
WHAT ARE YOUR USERS
Really **THINKING? AN**
OBJECTIVE WAY TO UNCOVER
THE SUBJECTIVE

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AGENDA

- Discuss Q Methodology
- Discuss Multiple Intelligence Theory
- Show results of the study done here and elsewhere
- Suggest other uses for Q
- Questions

Q METHODOLOGY

- Provides a method for the systematic analysis of subjectivity
- Provides a way to model viewpoints
- Developed in 1935 by William Stephenson
- Roots in psychometrics and scaling theory in social sciences
- Blending of quantitative and qualitative techniques

Q STUDY COMPONENTS

- Concourse
 - The flow of communication around any topic
- Q Sample
 - Statements of opinion extracted from concourse
 - Can be non-textual
- Conditions of instruction
 - Describes the basis of the sort
 - Same statements can be sorted under different conditions
- Q Sorting

Q OUTPUT

- PQMethod program (freeware)
- Factor analysis or principle components analysis
- Gives factor loadings for individuals
- Gives factor loadings for statements
- Distinguishing statements for each factor

INTERPRETATION OF Q SORT

- Q analysis identifies factors/clusters/groupings
- Q reveals categories that are user-driven
 - Functional rather than logical distinctions

MULTIPLE INTELLIGENCE THEORY

- Dr. Howard Gardner, Harvard, 1983
- People are intelligent in many ways
- Used to develop better teaching methods based on learning styles or intelligence

MULTIPLE INTELLIGENCE THEORY

- Linguistic intelligence ("word smart"):
- Logical-mathematical intelligence ("number/reasoning smart")
- Spatial intelligence ("picture smart")
- Bodily-Kinesthetic intelligence ("body smart")
- Musical intelligence ("music smart")
- Interpersonal intelligence ("people smart")
- Intrapersonal intelligence ("self smart")
- Naturalist intelligence ("nature smart")

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- According to the Theory of Multiple Intelligences Theory (MIT), what characteristics to IAs exhibit?
- What factors emerge from Q sorts on IAs?
- Other Q Methodology applications in IA

SAMPLE

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- Students in the KSU IAKM program (18)

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- Professionals at the IA Summit (14)

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- Professionals at the IA Summit (14)
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- -5 to +5

Directions: Rank statements so that they are arranged exactly in the pattern shown below. "5" is most like you, and "-5" is least like you.

-5	-4	-3	-2	-1	0	1	2	3	4	5
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- What does this mean?
 - Each of the 2 groups sorted statements in similar ways
 - The differences between the groups can be shown by “distinguishing” and “non-distinguishing” statements in each factor

FACTOR LABELS & CHARACTERISTICS

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- Factor 1: “Heart”

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- Factor 1: “Heart”
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- Factor 2: “Head”
 - Analytical, cerebral, mental modelers, inward
 - Use discussion to work out their own

FACTOR 1: REPRESENTATIVE “MOST LIKE” STATEMENTS

FACTOR 1: REPRESENTATIVE “MOST LIKE” STATEMENTS

Intelligence	Statement
INTER	Helping others solve their problems
INTER	Listening carefully to both the words and the feelings
INTER	In-depth discussions with others
VISPA	Picturing events, situations or stories in my head
LINGV	Reading books, articles, and other printed materials
INTRA	Mentally “playing” with ideas to see where it leads me

FACTOR 1: REPRESENTATIVE “LEAST LIKE” STATEMENTS

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Intelligence	Statement
MUSIC	Creating original music to express ideas
BODYK	Creating an interpretive dance to express an idea
MUSIC	Performing music
MUSIC	Connecting new information to musical forms or music history
BODYK	Creating or acting in a skit or play
MUSIC	Inventing new lyrics to a traditional song in order to remember new information

FACTOR 2: REPRESENTATIVE “MOST LIKE” STATEMENTS

FACTOR 2: REPRESENTATIVE “MOST LIKE” STATEMENTS

Intelligence	Statement
LOGMA	Understanding why something works as it does
LINGV	Reading books, articles, and other printed materials
VISPA	Creating or studying maps, graphs or other visual aids to understand new information
INTRA	Mentally “playing” with ideas to see where it leads me
LOGMA	Figuring out where new ideas fit in existing conceptual systems
INTER	In-depth discussions with others

FACTOR 2: REPRESENTATIVE “LEAST LIKE” STATEMENTS

FACTOR 2: REPRESENTATIVE “LEAST LIKE” STATEMENTS

Intelligence	Statement
BODYK	Creating an interpretive dance to express an idea
MUSIC	Inventing new lyrics to a traditional song in order to remember new information
MUSIC	Connecting new information to musical forms or music history
MUSIC	Using rhyming patterns to remember new information
MUSIC	Creating original music to express ideas
LINGV	Systematically memorizing information through repetition

TOP 6 DISTINGUISHING STATEMENTS






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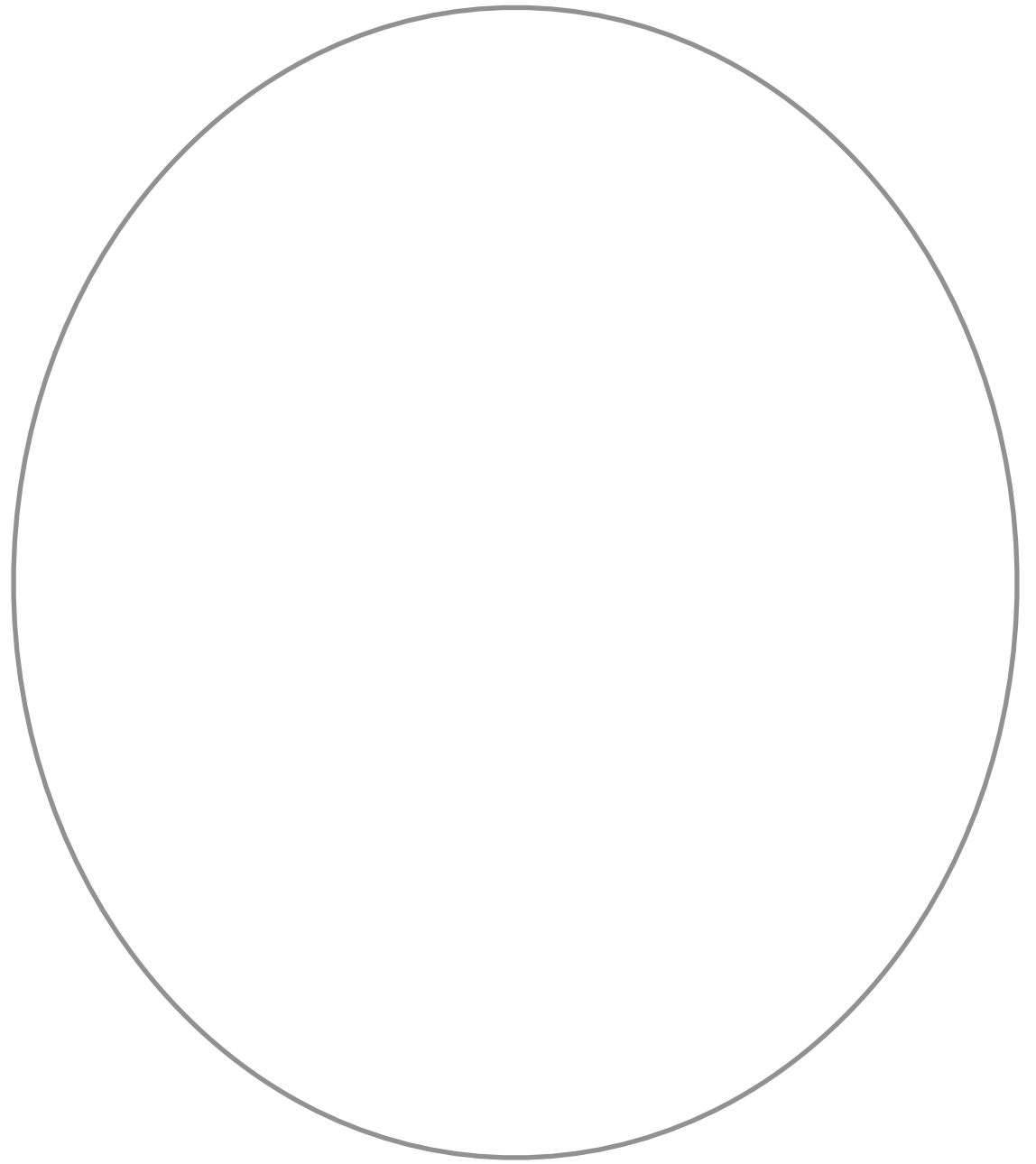
Intelligence	Statement	Avg. Rank F1	Avg. Rank F2
INTER	Helping others solve their problems	5	1
INTER	Listening carefully to both the words and the feelings	5	-1
INTER	In-depth discussions with others	4	3
VISPA	Picturing events, situations or stories in my head	4	2
INTRA	Working on tasks by myself	3	0
INTRA	Engaging in quiet time to think, read, and creatively write for insight and my own amusement	3	0

SELECTED CONSENSUS STATEMENTS

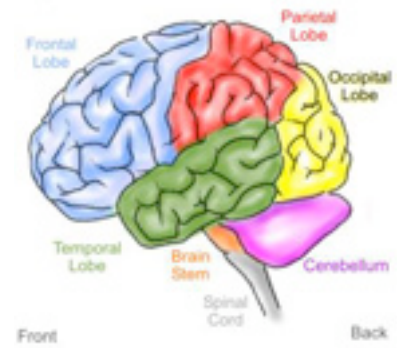


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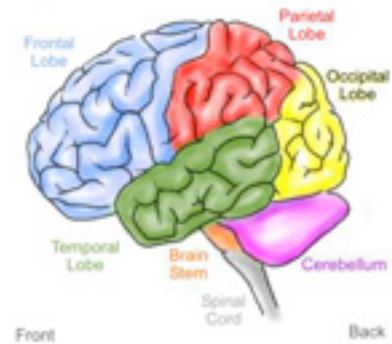
Intelligence	Statement	Rank Trend
INTER	In-depth discussions with others	
LINGV	Reading books, articles, and other printed materials	
INTRA	Mentally “playing” with ideas to see where it leads me	
VISPA	Creating or studying flow charts that explain cause-and-effect relationships	
VISPA	Creating concept webs or concept maps to understand relationships among concepts	



Regions of the Human Brain



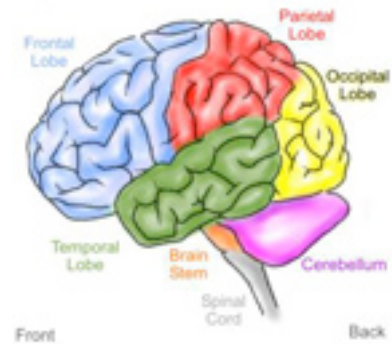
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Creating/Studying
data and
visualizations for
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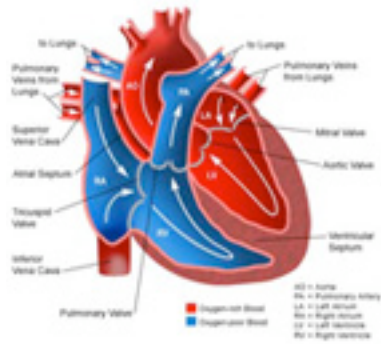
Why does this
work as it does?

Regions of the Human Brain

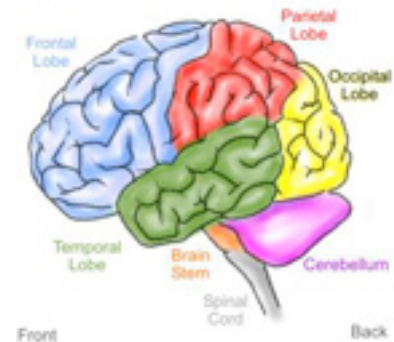


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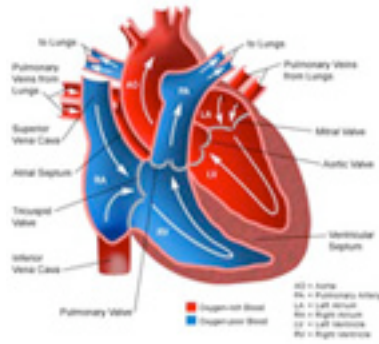


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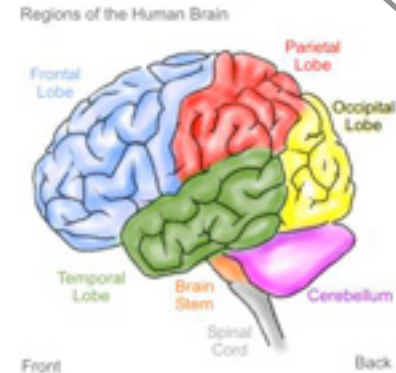
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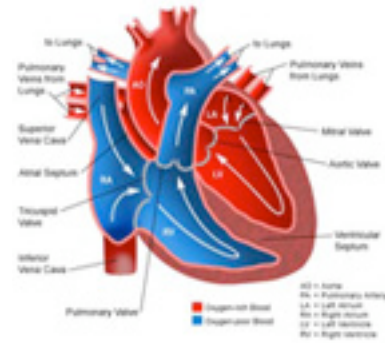
Listening to, and helping others solve problems

Mental visualizers



Creating/Studying data and visualizations for understanding

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Listening to, and helping others solve problems

Mental visualizers

Engagers

Readers

Mental-modelers

Regions of the Human Brain



Creating/Studying data and visualizations for understanding

Why does this work as it does?

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- Elicit preferences for content

OTHER Q APPLICATIONS FOR IA

- Richer Personas
- Augment focus groups
- Elicit preferences for content
- Elicit design and pattern preferences

FURTHER READING

- McKeown, B. and Thomas, D. (1988). *Q Methodology*. Sage Publications: New York.
- *Operant Subjectivity: The Q Methodology Newsletter*
- Gardner, H. (1999). *Intelligence Reframed: Multiple Intelligences for the 21st Century*. Basic Books: New York.

THANKS

- Discussion?
- Questions?