

# ***Criticisms of Q Methodology and Proposed Rejoinders***

***Q Fortnightly Klatch, 3 April 2020***

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Q methodology has been the target of criticism since its inception more than 80 years ago, but most criticisms have been based on misunderstandings. Many of these criticisms persist and get conveyed like intellectual DNA from generation to generation and often show up in dissertation defenses, in reviews of rejected manuscripts, in articles and chapters, and in internet searches. A selection of criticisms will be presented along with correctives and counter-arguments that may prove useful to those who wish to inoculate themselves against the transmission of error.

## **Topics**

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The Initial Divide: Reciprocity vs. Nonreciprocity

Cattell's Data Box

Potpourri of Criticisms and the Medici Effect (1950s–Present)

Q Methodology and the Pre– and Postmodernisms

- Feminism
- Social constructivism and the British Dialect
- The California Way
- Critical discourse analysis
- Quantitative/qualitative/mixed methods

## The Initial Divide: Reciprocity vs. Nonreciprocity

| <b><u>R Method</u></b> | Variables (traits) |          |          |   |          |
|------------------------|--------------------|----------|----------|---|----------|
| Cases<br>(persons)     | <i>A</i>           | <i>B</i> | <i>C</i> | . | <i>N</i> |
| <i>a</i>               | $aX_A$             | $aX_B$   | $aX_C$   | . | $aX_N$   |
| <i>b</i>               | $bX_A$             | $bX_B$   | $bX_C$   | . | $bX_N$   |
| <i>c</i>               | $cX_A$             | $cX_B$   | $cX_C$   | . | $cX_N$   |
| .                      | .                  | .        | .        | . | .        |
| <i>n</i>               | $nX_A$             | $nX_B$   | $nX_C$   | . | $nX_N$   |

| <b><u>Q Method</u></b> | Variables (persons) |          |          |   |          |
|------------------------|---------------------|----------|----------|---|----------|
| Cases<br>(traits)      | <i>a</i>            | <i>b</i> | <i>c</i> | . | <i>n</i> |
| <i>A</i>               | $AX_a$              | $AX_b$   | $AX_c$   | . | $AX_n$   |
| <i>B</i>               | $BX_a$              | $BX_b$   | $BX_c$   | . | $BX_n$   |
| <i>C</i>               | $CX_a$              | $CX_b$   | $CX_c$   | . | $CX_n$   |
| .                      | .                   | .        | .        | . | .        |
| <i>N</i>               | $NX_a$              | $NX_b$   | $NX_c$   | . | $NX_n$   |

- Burt, C. (1972). The reciprocity principle. In S.R. Brown & D.J. Brenner (Eds.), *Science, psychology, and communication* (pp. 39-56). New York: Teachers College Press.
- Brown, S.R. (1972). A fundamental incommensurability between objectivity and subjectivity. In S.R. Brown & D.J. Brenner (Eds.), *Science, psychology, and communication* (pp. 57-94). New York: Teachers College Press.

From Stephenson, W. (1953). *The study of behavior: Q-technique and its methodology*. Chicago: University of Chicago Press.

Our own position was that, although this reciprocity applies to any one matrix of data, the more fundamental concern is with two different matrices—one of which is based upon postulates of one kind and the other upon postulates of quite a different order. The one was our system (1), of the early paper (Stephenson, 1936), or R-methodology, as we now call it; the other was our system (2), or Q-methodology. These are not, and never can be, reciprocals of one another. But we defined what was reciprocal to system (1) and also to (2), namely, our systems (3) and (4), respectively.... There never was a single matrix of scores to which *both* R and Q apply. (pp. 14-15)

Brown, S.R. (2006). A match made in heaven: A marginalized methodology for studying the marginalized. *Quality & Quantity*, 40, 361-382.

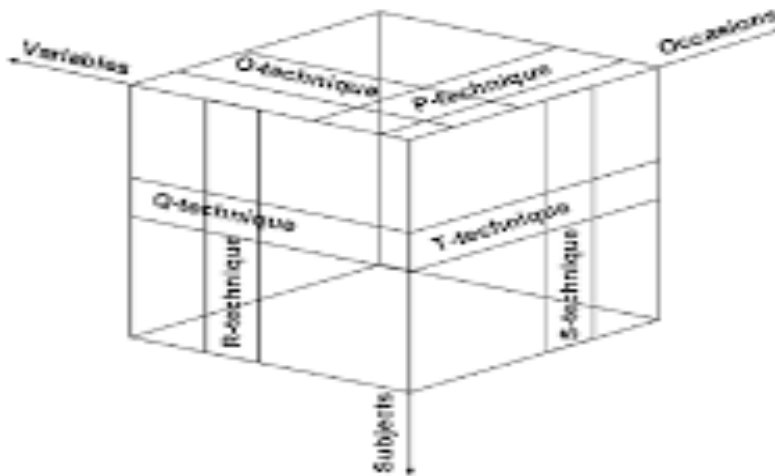
Stephenson, W. (1936). The foundations of psychometry: Four factor systems. *Psychometrika*, 1, 195-209.

Stephenson, William (1990). Fifty years of exclusionary psychometrics: I. Q technique. *Operant Subjectivity*, 13, 105-120.

Stephenson, William (1990). Fifty years of exclusionary psychometrics: II. Developments. *Operant Subjectivity*, 13, 141-162.

## **Methodologies vs. Applications: Cattell's Data Box**

During the 1950s, criticism became more heated. Cattell (1951), following Burt, began introducing a variety of other techniques (P, O, Q S, etc.), which Stephenson (1952) regarded as arbitrary, unnecessary, and as wide of the mark.



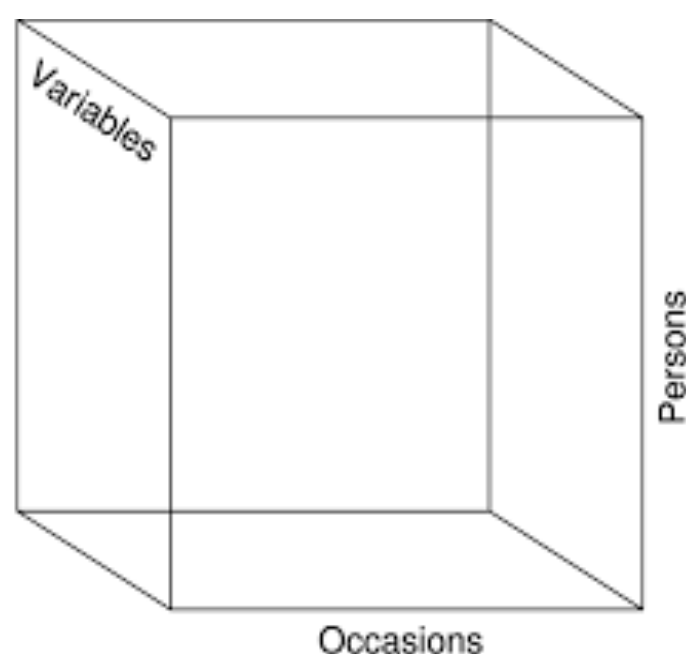
Cattell, R.B. (1951). On the disuse and misuse of P, Q, Qs and O techniques in clinical psychology. *Journal of Clinical Psychology*, 7, 203-214.

Stephenson, W. (1952). A note on Professor R.B. Cattell's methodological adumbrations. *Journal of Clinical Psychology*, 8, 206-207.

Miller, D. (1985). Comment. *Operant Subjectivity*, 8, 70-71.

Waller, N. G., & Meehl, P. E. (1998) *Multivariate taxometric procedures: Distinguishing types from continua*. Newbury Park, CA: Sage.

Responding to a criticism that he had misunderstood Stephenson's position, Miller stated that "we have not misunderstood Stephenson's method but have explicitly defined and profitably applied a variant of it" (p. 70), where the "variant" to which he referred (and attributed to Stephenson) consisted of the age-old method of taking a conventional R data matrix, transposing it, and analyzing the relations among the persons (or organizations in Miller's specific project), a step that Miller said that he had taken "to encourage readers to pursue Q approaches in greater breadth and detail" (p. 71), as if what he was proposing were fresh and new rather than the received wisdom of the statistical establishment.



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## Cattell's Data Box

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- **R-Technique:** Variables by Persons
  - Most common Factor Analysis approach
- **Q-Technique:** Persons by Variables
  - Cluster analysis – subgroups of people
- **P-Technique:** Variables by Occasions
  - Intra-individual time series analyses
- **O-Technique:** Occasions by Variables
  - Time-dependent (historical) clusters
- **S-Technique:** People by Occasions
  - People clustering based on growth patterns
- **T-Technique:** Occasions by People
  - Time-dependent clusters based on people

# Factor Matrix

| Ps  | A         | B         | C         | D         |
|-----|-----------|-----------|-----------|-----------|
| 1.  | <b>78</b> | -21       | -05       | 24        |
| 2.  | <b>77</b> | 31        | 13        | 14        |
| 3.  | <b>71</b> | 09        | 37        | -11       |
| 4.  | <b>70</b> | 08        | 13        | 16        |
| 5.  | <b>57</b> | 11        | 21        | -14       |
| 6.  | <b>57</b> | 09        | 15        | 39        |
| 7.  | <b>48</b> | 39        | -25       | 04        |
| 8.  | 25        | <b>80</b> | 07        | 11        |
| 9.  | 31        | <b>51</b> | -18       | 36        |
| 10. | 39        | <b>51</b> | 26        | -05       |
| 11. | 23        | 27        | <b>65</b> | 19        |
| 12. | 30        | 18        | <b>51</b> | 30        |
| 13. | 30        | -12       | <b>48</b> | 09        |
| 14. | 03        | 09        | 03        | <b>79</b> |
| 15. | 32        | 05        | 33        | <b>53</b> |
| 16. | <b>55</b> | 02        | <b>40</b> | 08        |
| 17. | <b>52</b> | 15        | <b>50</b> | 13        |
| 18. | <b>51</b> | 26        | <b>40</b> | 24        |
| 19. | <b>51</b> | 04        | <b>60</b> | 00        |
| 20. | 37        | <b>42</b> | <b>40</b> | 06        |
| 21. | 29        | 16        | <b>44</b> | <b>48</b> |

| Statements                                                     | Factor Arrays |    |    |    |
|----------------------------------------------------------------|---------------|----|----|----|
|                                                                | A             | B  | C  | D  |
| 1. Creative.                                                   | +2            | +2 | +1 | +1 |
| 2. I fail to return things or put them back where they belong. | -3            | -1 | -2 | 0  |
| 3. I enjoy being the center of attention.                      | +2            | -2 | -3 | +3 |
| 4. Shy.                                                        | -2            | -1 | +5 | -4 |
| 5. Cooperative.                                                | +4            | +3 | +3 | +2 |
| 6. I deal well with stress.                                    | +1            | +4 | -2 | -2 |
| 7. I procrastinate about important tasks.                      | -3            | -3 | -1 | -4 |
| 8. Fearful.                                                    | +1            | -4 | +2 | -1 |
| 9. Talkative.                                                  | +1            | -2 | -3 | +4 |
| 10. I tend to find fault with others.                          | 0             | -4 | -2 | -2 |
| 11. Negligent.                                                 | -4            | -3 | 0  | 0  |
| 12. I dislike change.                                          | -1            | -5 | +2 | +1 |
| 13. I worry about many different things.                       | +3            | +1 | +3 | +1 |
| 14. I am open to trying new things.                            | +1            | +5 | +2 | 0  |
| 15. Organized.                                                 | +3            | 0  | 0  | -2 |
| 16. Placid.                                                    | -1            | 0  | +4 | +1 |
| 17. I pay attention to details.                                | +3            | -1 | 0  | +2 |
| 18. Shallow.                                                   | -4            | 0  | 0  | -1 |
| 19. I prefer solitude.                                         | -1            | -2 | +1 | -3 |
| 20. I have a forgiving nature.                                 | -1            | +2 | +5 | +3 |
| 21. I am happy to think about abstract concepts.               | +2            | 0  | -1 | 0  |
| 22. Rude.                                                      | -5            | 0  | -5 | -1 |
| 23. I do a thorough job.                                       | +5            | +1 | +1 | -3 |
| 24. I dislike making small talk.                               | -2            | -2 | -1 | 0  |
| 25. Flexible.                                                  | +1            | +3 | +3 | +4 |
| 26. Emotional.                                                 | +2            | +2 | +4 | +5 |
| 27. I prefer work that is routine.                             | +1            | -3 | +2 | -2 |
| 28. Passive.                                                   | -2            | -3 | 0  | -1 |
| 29. Dependable.                                                | -2            | +5 | -1 | +3 |
| 30. Insightful.                                                | +2            | +1 | +1 | -3 |
| 31. I like to start conversations.                             | 0             | 0  | 0  | +2 |
| 32. Independent.                                               | +5            | +4 | +1 | +3 |
| 33. Bossy.                                                     | 0             | 0  | -4 | -2 |
| 34. I feel anxious.                                            | 0             | -3 | +3 | -1 |

|                                                       |    |    |    |    |
|-------------------------------------------------------|----|----|----|----|
| 35. I have a great deal of interest in other people.  | 0  | +1 | -1 | +2 |
| 36. Energetic.                                        | +3 | +3 | +2 | 0  |
| 37. Careless.                                         | -3 | -1 | -2 | 0  |
| 38. I manipulate others for personal gain.            | -2 | -1 | -5 | -5 |
| 39. I rarely feel sad or depressed                    | 0  | -2 | -3 | +2 |
| 40. Unsophisticated.                                  | -3 | -2 | 0  | +1 |
| 41. Logical.                                          | +3 | +2 | +2 | -1 |
| 42. Jealous.                                          | -3 | -1 | -1 | -2 |
| 43. I have an active imagination.                     | +1 | +1 | +1 | +4 |
| 44. I can be cold and aloof.                          | -1 | -1 | -2 | -3 |
| 45. Trustful.                                         | +4 | +4 | +4 | +5 |
| 46. Daring.                                           | 0  | +1 | -4 | +3 |
| 47. I am easily distracted.                           | 0  | -4 | +2 | -1 |
| 48. Inquisitive.                                      | 0  | +3 | 0  | -3 |
| 49. I persevere until the task is finished.           | +4 | +3 | 0  | +1 |
| 50. I have few artistic interests.                    | -1 | -1 | 0  | 0  |
| 51. Relaxed.                                          | -1 | +2 | -2 | +2 |
| 52. Impractical.                                      | -4 | -2 | -3 | +1 |
| 53. I am outgoing and sociable.                       | +2 | +2 | -1 | +1 |
| 54. Withdrawn.                                        | -2 | 0  | -2 | -5 |
| 55. I am considerate and kind to almost everyone.     | +2 | +1 | +3 | +2 |
| 56. I get nervous easily.                             | +1 | -5 | +1 | -1 |
| 57. Thoughtless.                                      | -5 | 0  | -4 | 0  |
| 58. I remain calm in tense situations.                | -2 | +2 | -3 | -2 |
| 59. I carefully think things through before speaking. | 0  | +1 | +1 | 0  |
| 60. Unreflective.                                     | -1 | 0  | -1 | -4 |

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## Potpourri of Criticisms and the Medici Effect

Kampen, J.K., & Tamás, P. (2014). Overly ambitious: Contributions and current status of Q methodology. *Quality & Quantity*, 48, 3109-3126.

Brown, S.R., Danielson, S., & van Exel, J. (2015). Overly ambitious critics and the Medici Effect: A reply to Kampen and Tamás. *Quality & Quantity*, 49, 523-537.

### 1950s

**Mowrer (1953)**, a colleague of Cattell's, echoed many of Cattell's views, but then later apologized privately to Stephenson for having done so (Stephenson, ca. 1965, personal communication).

Mowrer, O.H. (1953). "Q-technique"—description, history, and critique. In O.H. Mowrer (Ed.), *Psychotherapy* (pp. 316-375). New York: Ronald.

In their review of Stephenson (1953) *The Study of Behavior: Q-Technique and Its Methodology*, **Cronbach and Gleser (1954)**, after criticizing several key ideas, wrote with great fervor that "it is imperative to discourage students of personality and social psychology from copying Stephenson's designs..." (p. 330, italics in original), which Stephenson (1954) dismissed as originating from erroneous first assumptions: Had he been trying to do what Cronbach and Gleser imagined, their criticisms might have held water, but he wasn't.

Cronbach, L.J., & Gleser, G.C. (1954). Review of *The Study of Behavior: Q-technique and Its Methodology*, by W. Stephenson. *Psychometrika*, 19, 327-330.

Stephenson, W. (1954). Comments on Cronbach and Gleser's review of: *The study of behavior: Q-technique and its methodology*. *Psychometrika*, 19, 331-333.

**Edwards and Horst (1953)**, among others, focused on the spectre of social desirability....

Edwards, A.L., & Horst, P. (1953). Social desirability as a variable in Q technique studies. *Educational and Psychological Measurement*, 13, 620-625.

Kogan, W.S., Quinn, R., Ax, A.F., & Ripley, H.S. (1957). Some methodological problems in the quantification of clinical assessment by Q array. *Journal of Consulting Psychology*, 21, 57-62.

**Cartwright (1957)** recommended that Kendall's tau statistic be used to cover situations in which a forced Q-sort distribution was utilized, presumably because such distributions rendered Pearson's  $r$  inapplicable.

Cartwright, D.S. (1957). A computational procedure for tau correlation. *Psychometrika*, 22, 97-104.

By decade's end, **Jackson and Bidwell (1959)** volunteered to relieve Q methodology of its presumed reliance on the method of paired comparisons, which for  $N = 80$  statements would have necessitated  $1/2N(N - 1) = 3,160$  decisions, requiring an estimated two to three hours of Q-sorting effort. Of course, since Q technique had never relied on paired comparisons in the first place, the modified procedure that Jackson and Bidwell had conceived was stillborn.

Jackson, D.M., & Bidwell, C.E. (1959). A modification of Q-technique. *Educational & Psychological Measurement*, 19, 221–232 (1959)

### **1960s**

**Wittenborn (1961)** rode in on a crest of prior misunderstandings to which he chose to contribute rather than question....

Wittenborn, J.R. (1961). Contributions and current status of Q methodology. *Psychological Bulletin*, 58, 132–142.

**Sundland (1962)** recommended that Q technique be abandoned due to what he considered to be the inherent correlation among statements....

Sundland, D.M. (1962). The construction of Q-sorts: A criticism. *Psychological Review*, 69, 62–64.

Stephenson, W. (1963). Independency and operationism in Q-sorting. *Psychological Record*, 13, 269–272.

**Loevinger (1965)** was critical due to what she regarded as unresolvable problems of sampling from a population of statements....

Loevinger, J. (1965). Person and population as psychometric concepts. *Psychological Review*, 72, 143–155.

**Phillips et al. (1965)** were skeptical of Q technique's capacity to detect systematic movement toward self-ideal congruence in psychotherapy and doubted Q's ability to meet the technical standards required.

Phillips, E.L., Raiford, A., & El-Batrawi, S. (1965). The Q sort reevaluated. *Journal of Consulting Psychology*, 29, 422–425.

**Nahinsky (1967)** and **Neff and Cohen (1967)** converged in different ways on the issue of variance analysis and were critical of Stephenson in this regard, unmindful that he had mainly recommended variance designs for purposes of Q-sample construction but not ANOVA for the analysis of Q-sort data.

Nahinsky, I.E. (1967). A Q sort analysis of variance involving the dimensions of sorts, groups, and items. *Journal of Experimental Education*, 35(3), 36–41.

Neff, W.S., & Cohen, J. (1967). A method for the analysis of the structure and internal consistency of Q-sort arrays. *Psychological Bulletin*, 68, 361–368.

## **1970s and '80s**

**Johnson (1970)** sought to correct a perceived defect by showing how Q methodology could be applied to hundreds of respondents.

Johnson, R.M.: Q analysis of large samples. *Journal of Marketing Research*, 7, 104–105.

**Cragan and Shields (1981)** also endeavored to bring Q methodology into conformity with the doctrine of large numbers.

Cragan, J.F., & Shields, D.C. (1981). The identifying characteristics of public fire safety educators: an empirical analysis. In J.F. Cragan, J.F. & D.C. Shields (Eds.), *Applied communication research: A dramatic approach* (pp. 219–234). Prospect Heights, IL: Waveland Press.

**Thompson et al. (1983)** promoted the idea that Q methodology could be strengthened by combining it with R methodology....

Thompson, B., Frankiewicz, R.G., & Ward, G.R. (1983). Cross-technique validation of attitude measures. *Operant Subjectivity*, 6, 37–50.

Stephenson, W. (1983). Comment. *Operant Subjectivity*, 6, 50-55.

**Conover and Feldman (1984)** used the factor loadings from Q studies as predictors of other variables.

Conover, P.J., & Feldman, S. (1984). Group identification, values, and the nature of political beliefs. *American Politics Quarterly*, 12, 151–175.

**Bolland (1985)** resuscitated an old issue that received much attention in the 1950s—that of forced-versus free-choice Q sorts.

Bolland, J.M. (1985). The search for structure: an alternative to the forced Q-sort technique. *Political Methodology*, 11(1–2), 91–107.

Brown, S.R. (1985). Comments on "The Search for Structure." *Political Methodology*, 11, 109-117.

**Gould (1985)** contrasted Q methodology with Atkin's mathematical method of Q-analysis ... claiming that Q methodology could not faithfully represent anything since it forces complex realities onto Procrustean beds of linearity as required by linear correlation.

Gould, P. (1985). A new Q too? *Operant Subjectivity*, 8, 42–53.

Brown, S.R. (1984). "Q-analysis": Caveat emptor. *Operant Subjectivity*, 8, 6-17.

Brown, S.R. (1985). Comment on "A New Q Too?" *Operant Subjectivity*, 8, 54-62.

**Garrard and Hausman (1985)**, apparently unaware of the growing use of Q in the social sciences, recommended replacing the name "Q Sort" in favor of "Priority Sort," simply on the basis of the fact that the latter was focused on decision making rather than psychological assessment.

Garrard, J., & Hausman, W. (1985). The priority sort: an empirical approach to program planning and evaluation. *American Journal of Social Psychiatry*, 5(5), 29–36.

## **1990s**

**Howard (1995–1996)** offered a combination questionnaire and Q sort as a way to obtain responses more quickly and from a more respectable number of respondents....

Howard, L.W. (1995-1996). Quest-sort: A paper-and-pencil alternative to card-sorting Q samples. *Operant Subjectivity*, 19, 12–22.

Brown, S.R. (1995-1996). Comments on Professor Howard’s Quest-Sort. *Operant Subjectivity*, 19, 23-30.

**Billard (1999)** suggested ways to help Q methodology to become more democratic....

Billard, S. (1999). How Q methodology can be democratized. *Feminism & Psychology*, 9, 357-366.

**Peterson et al. (1999)** offered a modification explicitly for the study of group dynamics....

Peterson, R.S., Owens, P.D., & Martorana, P.V. (1999). The group dynamics Q-sort in organizational research: A new method for studying familiar problems. *Organization Research Methods*, 2, 107–139.

## **2000–present**

Dziopa, F., & Ahern, K. (2011). A systematic literature review of the applications of Q-technique and its methodology. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences*, 7(2), 39-55.

- Variables/Cases ratio
- Shape of Q-sort distribution
- Q-sample structuring
- Factor rotation
- Generalization: “Q-methodology is not designed for large nonrandomized participant samples ... and thus results of the studies cannot be claimed to be generalizable” (p. 41)

| <u>R</u> | <u>Var</u> | <u>S</u> | <u>Sort</u> |
|----------|------------|----------|-------------|
| 1        | X1         | 1        | X1          |
| 2        | X2         | 2        | X2          |
| 3        | X3         | 3        | X3          |
| ⋮        | ⋮          | ⋮        | ⋮           |
| n        | Xn         | N        | XN          |

Kampen, J.K., & Tamás, P. (2014). Overly ambitious: Contributions and current status of Q methodology. *Quality & Quantity*, 48, 3109-3126.

- The nature of subjectivity: "... the present state-of-the-art science does not permit direct measurement of mental states or subjective representations"
- Concourse and Q samples: "the QM literature remains uncomfortably silent with respect to how to assemble and verify completeness of a concourse, and how to verify or falsify the representativeness of a sample drawn therefrom"
- Factor analysis: "the point of focus in QM is the transposed matrix" (Sect. 2.3) and centroid factor analysis is "an obsolete method" (Sect. 2.3). If Kampen and Tamás are not familiar with key ideas such as specificity (J.R. Kantor), psychological cues (Egon Brunswik), abductive logic (Charles Peirce), tacit knowledge (Michael Polanyi), and operantcy (B.F. Skinner), as well as the statistical ideas of Spearman, Thurstone, et al., then they are probably not well positioned to understand Stephenson on factor analysis.
- The forced Q-sort distribution: They assert that because individuals' actual distribution of feelings about the Q statements may not follow a normal distribution, forcing them to sort the statements in a normal distribution distorts the representation of their views, and thus distorts the resulting factors: "the method used does not appear to be able to detect if respondents would have been clustered if the Q sort was unstructured".
- Items:persons ratio
- Researcher bias: Conventional "R type" research is, of course, like QM susceptible to researcher bias. However, in most empirical "R" research, meticulous effort is undertaken to identify, minimize and, when that is not possible, account for these sources of bias. QM, by contrast, is dismissive of such concerns.
- Q methodologists are "epistemologically naïve" in believing that the method removes researcher bias (Sect. 1) is based on a faulty premise—i.e., that researcher and observer are one and the same.
- It is asserted at various points (e.g., in Sect. 3.1) that Q methodology has no interest in generalization—more forcefully, that it rejects matters of external validity—but Q factors are themselves generalizations.

Brown, S.R., Danielson, S., & van Exel, J. (2015). Overly ambitious critics and the Medici Effect: A reply to Kampen and Tamás. *Quality & Quantity*, 49, 523-537.

Tamás, P.A., & Kampen, J.K. (2015). Heresy and the church of Q: A reply. *Quality & Quantity*, 49, 539-540.

| most disagree |     |     |     |     |     |     |     |     |     | most agree |  |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------|--|
| -5            | -4  | -3  | -2  | -1  | 0   | +1  | +2  | +3  | +4  | +5         |  |
|               |     |     |     |     |     |     |     |     |     |            |  |
|               |     |     |     |     |     |     |     |     |     |            |  |
|               |     |     |     |     |     |     |     |     |     |            |  |
|               |     |     |     |     |     |     |     |     |     |            |  |
| (4)           | (4) | (4) |     |     |     |     |     | (4) | (4) | (4)        |  |
|               |     |     | (5) | (5) | (5) | (5) | (5) |     |     |            |  |

### **Characteristics of The Medici**

- They do not and have not belonged to the community of scholars who have been interested in subjectivity and in the use of Q technique and method in its study.
- Generally, their critical essays, like Wittenborn (1961), constitute their sole “contribution” to the Q methodology literature.
- In those instances in which they have proposed an innovative modification, they have shown no further interest in it:
  - Billard (1999), for instance, proposed democratizing Q methodology, but then never followed up.
  - Bolland (1985) proposed a solution to the problem (as he saw it) that the Q-sorting task was cognitively too complex for the human mind to cope with, but then he never pursued it.
  - Howard (1995–1996) similarly demonstrated no further interest in his Quest–sort,
  - Jackson and Bidwell (1959) never returned to their modification,
  - Nahinsky (1967) showed how to apply variance analysis to Q sorts and then moved on to other interests.
  - Garrard and Hausman (1985) have apparently never again used the Priority Sort that they introduced with such fanfare.
  - Vogel and Lowham (2007) expressed certainty about the superiority of cluster analysis over factor analysis, but were never heard from again.
- If their careers in recent decades have overlapped the existence of the Q journal (*Operant Subjectivity*, 1977-present)...:
  - They have not been subscribers.
  - They have not attended any of the annual Q conferences.
  - They have not been subscribers to the Q-Method electronic discussion list.
  - They have not familiarized themselves with the literature, theories, concepts, etc. of the conceptual framework that they so confidently and enthusiastically criticize.

## **Q Methodology and the Pre– and Postmodernisms**

### ***Feminism***

- Gallivan, J (1994). Subjectivity and the psychology of gender: Q as a feminist methodology. In J. Gallivan, S.D. Crozier & V.M. Lalande (Eds.), *Women, girls, and achievement* (pp. 29-36). Toronto: Captus University Publications.
- Kitzinger, C. (1986). Introducing and developing Q as a feminist methodology: A study of accounts of lesbianism. In S. Wilkinson (Ed.), *Feminist social psychology* (pp. 151-172). Milton Keynes and Philadelphia: Open University Press.
- Kitzinger, C. (1987). *The social construction of lesbianism* (Inquiries in Social Construction series). London: Sage.
- Kitzinger, C. (1999). Commentary: Researching subjectivity and diversity: Q-methodology in feminist psychology. *Psychology of Women Quarterly*, 23, 267-276.
- Snelling, S.J. (2004). Q-methodology and the political opportunity of feminist psychology. *Feminism & Psychology*, 14, 519-521.

### ***Social Constructivism and the British Dialect***

- Stainton Rogers, R. & Stainton Rogers, W. (1990). What the Brits got out of the Q: And why their work may not line up with the American way of getting into it! *Electronic Journal of Communication/La Revue Electronique de Communication*, 1(1).
- Watts, S., & Stenner, P. (2012). *Doing Q methodological research: Theory, method and interpretation*. Sage, Thousand Oaks (2012)

### ***The California Way***

- Block, J. (1961). *The Q-sort method in personality assessment and psychiatric research*. Springfield, IL: Charles C Thomas.
- Block, J. (2008). *The Q-sort in character appraisal: Encoding subjective impressions of persons quantitatively*. Washington: American Psychological Association.

### ***Critical Discourse Analysis***

- Burke, L.E.C-A. (2015). Exploiting the qualitative potential of Q methodology in a post-colonial critical discourse analysis. *International Journal of Qualitative Methods*, 14, 65-79.
- Druschke, C.G., Booth, E.G., & Lundberg, E. (2019). Q-rhetoric and controlled equivocation: Revising “the scientific study of subjectivity” for cross-disciplinary collaboration. *Technical Communication Quarterly*, 28(2), 137-151.
- Robbins, P., & Krueger, R. (2000). Beyond bias? The promise and limits of Q method in human geography. *Professional Geographer*, 52, 636-648.
- Sneegas, G. (2020). Making the case for critical Q methodology. *The Professional Geographer*, 72, 78-87.

## **Quantitative/Qualitative/Mixed Methods**

- Franz, A., Worrell, M., & Vögele, C. (2013). Integrating mixed method data in psychological research: Combining Q methodology and questionnaires in a study investigating cultural and psychological influences on adolescent sexual behavior. *Journal of Mixed Methods Research*, 7, 370-389.
- Newman, I., & Ramlo, S. (2010). Using Q methodology and Q factor analysis in mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (2<sup>nd</sup> ed., pp. 505-530). Thousand Oaks, CA: Sage.
- Ramlo, S. (2016). Mixed method lessons learned from 80 years of Q methodology. *Journal of Mixed Methods Research*, 10(1), 28-45.
- Ramlo, S. (2020). Divergent viewpoints about the statistical stage of a mixed method: Qualitative versus quantitative orientations. *International Journal of Research & Method in Education*, 43(1), 93-111.
- Ramlo, S.E., & Newman, I. (2011). Q methodology and its position in the mixed-methods continuum. *Operant Subjectivity*, 34, 172-191.