

# Package ‘qsort’

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**Type** Package

**Title** Scoring Q-Sort Data

**Version** 0.2.3

**Description** Computes scores from Q-sort data, using criteria sorts and derived scales from subsets of items.  
The 'qsort' package includes descriptions and scoring procedures for four different Q-sets commonly used in developmental psychology research: Attachment Q-set (version 3.0) (Waters, 1995, <[doi:10.1111/j.1540-5834.1995.tb00214.x](https://doi.org/10.1111/j.1540-5834.1995.tb00214.x)>); California Child Q-set (Block and Block, 1969, <[doi:10.1037/0012-1649.21.3.508](https://doi.org/10.1037/0012-1649.21.3.508)>); Maternal Behaviour Q-set (version 3.1) (Pederson et al., 1999, <<https://ir.lib.uwo.ca/cgi/viewcontent.cgi?article=1000&context=psychologypub>>); Preschool Q-set (Baumrind, 1968 revised by Wanda Bronson, <[doi:10.1111/j.1540-5834.1995.tb00214.x](https://doi.org/10.1111/j.1540-5834.1995.tb00214.x)>).

**Imports** cowplot, ggplot2, gridExtra, purrr, stats

**Suggests** devtools, knitr, roxygen2, rmarkdown

**Depends** R (>= 2.10)

**License** GPL-3

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 6.1.0

**VignetteBuilder** knitr

**NeedsCompilation** no

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**Repository** CRAN

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ex_qsort	<i>Example datasets for qsort package</i>
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### Description

A list containing four hypothetical Q-sort datasets: Attachment Q-set (aqs; version 3.0) (Waters, 1995); California Child Q-set (ccq; Block and Block, 1969); Maternal Behaviour Q-set (version 3.1) (mbqs; Pederson et al., 1999); Preschool Q-set (pq; Baumrind, 1968 revised by Wanda Bronson).

### Usage

```
ex_qsort
```

### Format

Data frames with 10 rows and a variable number of columns, depending on the number of Q-set items (aqs = 90, ccq = 100, mbqs = 90, pq = 72)

**participant** Subject identification.

**classroom** Group identification.

**qset1 to ...** Items' scores.

### Details

For these examples, items were given random scores (1 to 9; least to most characteristic respectively) following a rectangular distribution. For the ccq Q-set this corresponds to placing 11 items in each of the 9 categories, plus an additional one in the center category (i.e., 12 items in category 5). For the remaining Q-sets all the 9 categories include the same number of items (aqs = 10, mbqs = 10, pq = 8).

## References

- Baumrind, D. (1968). Manual for the Preschool Behaviour Q-set. Parental Research Project. Berkeley, CA: Institute of Human Development, University of California.
- Block, J. H., & Block, J. (1969). The California Child Q-Set. Berkeley, CA: Institute of Human Development, University of California.
- Pederson, D. R., Moran, G., & Bento, S. (1999). Maternal Behaviour Q-sort (version 3.1). London, ON: Psychology Department, Western University.
- Waters, E. (1995). Appendix A: The attachment Q-set (Version 3. 0). Monographs of the Society for Research in Child Development, 60, 234-246.

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print\_cards

*print\_cards*

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## Description

print\_cards creates a pdf document in a specified directory, with item's descriptions displayed on separate cards.

## Usage

```
print_cards(qset, desc_col = "description", dir.print)
```

## Arguments

- |           |   |
|-----------|---|
| qset      | A data frame containing the Q-set items' descriptions. For details see for example ?qset_aqs, ?qset_cqq, ?qset_mbqs and ?qset_pq. |
| desc_col  | Column name of qsets data frame containing items' descriptions.   |
| dir.print | Directory path where .pdf file will be saved  |

## Value

a pdf document with item's descriptions displayed on separate cards.

## References

- Baumrind, D. (1968). Manual for the Preschool Behaviour Q-set. Parental Research Project. Berkeley, CA: Institute of Human Development, University of California.
- Block, J. H., & Block, J. (1969). The California Child Q-Set. Berkeley, CA: Institute of Human Development, University of California.
- Pederson, D. R., Moran, G., & Bento, S. (1999). Maternal Behaviour Q-sort (version 3.1). London, ON: Psychology Department, Western University.
- Waters, E. (1995). Appendix A: The attachment Q-set (Version 3. 0). Monographs of the Society for Research in Child Development, 60, 234-246.

## Examples

```
print_cards(qset_aqs, desc_col = "description", dir.print = tempdir())
```

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qset_aqs	<i>AQS Q-set criteria scores and derived scales</i>
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## Description

A data frame containing the Attachment Q-set (aqs; version 3.0). In this dataset, column names ending in "\_c" refer to criteria sorts' scores, while column names ending in "\_s" refer to scales' scores.

## Usage

```
qset_aqs
```

## Format

AQS dataset with 90 rows (items) and 9 columns.

**item** Item number from 1 to 90.

**qset** aqs. Attachment Q-set (version 3.0) (Waters, 1995).

**sec\_c** Security criterion scores (retrieved from Waters et al., 1995).

**dep\_c** Dependency criterion scores (retrieved from Waters et al., 1995).

**pederson\_s** Pederson & Moran's (1995) scales (retrieved from Waters et al., 1995). comp = compliance; sb = secure base, fd = fussy/difficult; epc = enjoys physical contact; as = affective sharing.

**pederson\_s\_inv** Items to be inverted in Pederson and Moran scales.

**posada\_s** Posada et al.'s (1995) scales (retrieved from Waters et al., 1995). sim = smooth interactions with mother; pcm = physical contact with mother; ioa = interactions with other adults; pm = proximity to mother.

**posada\_s\_inv** Items to be inverted in Posada et al.'s scales.

**description** Item description (retrieved from Waters, 1995).

## References

Posada, G., Waters, E., Crowell, J. A., & Lay, K. (1995). Is it easier to use a secure mother as a secure base? Attachment Q-Sort correlates of the adult attachment interview. *Monographs of the Society for Research in Child Development*, 60 (2/3), 133-145.

Pederson, D. R., & Moran, G. (1995). A categorical description of infant-mother relationships in the home and its relation to Q-sort measures of infant-mother interaction. *Monographs of the Society for Research in Child Development*, 60 (2/3), 111-132.

Waters, E. (1995). Appendix A: The attachment Q-set (Version 3. 0). Monographs of the Society for Research in Child Development, 60 (2/3), 234-246.

Waters, E., Vaughn, B. E., Posada, G., & Kondo-Ikemura, K. (1995). Appendix D: Scoring key for Q-sort criteria and derived scales in the attachment Q-set and the attachment Q-set for infant macaques item sets. Monographs of the Society for Research in Child Development, 60 (2/3), 280-282.

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qset\_ccq

*CCQ Q-set criteria scores and derived scales*

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### Description

A data frame containing the California Child Q-set (ccq). In this dataset, column names ending in "\_c" refer to criteria sorts' scores, while column names ending in "\_s" refer to scales' scores.

### Usage

qset\_ccq

### Format

CCQ dataset with 100 rows (items) and 6 columns.

**item** Item number from 1 to 100.

**qset** ccq. California Child Q-set (Block & Block, 1969).

**scomp\_c** Social competence criterion scores (retrieved from Waters et al., 1985).

**sest\_c** Self-esteem criterion scores (retrieved from Waters et al., 1985).

**sest\_c** Self-esteem criterion scores (retrieved from Waters et al., 1985).

**egores\_c** Ego-resiliency criterion scores (Block & Block, 1980; retrieved from Brian Vaughn, personal communication).

**egocont\_c** Ego-control criterion scores (Block & Block, 1980; retrieved from Brian Vaughn, personal communication).

**shields\_s** Emotion regulation scale (retrieved from Shields and Cicchetti, 1997)

**shields\_s\_inv** Items to be inverted in emotion regulation scale.

**description** Item description (retrieved from Waters et al., 1985).

### References

Block, J. H., & Block, J. (1969). The California Child Q-Set. Berkeley, CA: Institute of Human Development, University of California.

Block, J. H., & Block, J. (1980). The role of ego-control and ego-resiliency in the organization of behavior. In W. A. Collins (Ed.), Minnesota symposium on child psychology: Vol. 13. Development of cognition affect, and social relations (pp. 39–101), Hillsdale, NJ: Erlbaum.

Shields, A., & Cicchetti, D. (1997). Emotion regulation among school-age children: The development and validation of a new criterion q-sort scale. *Developmental Psychology*, 33, 906-916.

Waters, E., Noyes, D. M., Vaughn, B. E., & Ricks, M. (1985). Q-sort definitions of social competence and self-esteem: Discriminant validity of related constructs in theory and data. *Developmental Psychology*, 21, 508-522.

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qset\_mbqs

*MBQS Q-set criteria scores and derived scales*

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### Description

A data frame containing the Maternal Behaviour Q-set (mbqs; version 3.1). In this dataset, column names ending in "\_c" refer to criteria sorts' scores, while column names ending in "\_s" refer to scales' scores.

### Usage

qset\_mbqs

### Format

MBQS dataset with 90 rows (items) and 4 columns.

**item** Item number from 1 to 90.

**qset** mbqs. Maternal Behaviour Q-set (version 3.1) (Pederson et al., 1999).

**sens\_s** Sensibility criterion scores (retrieved from Pederson et al., 1999).

**description** Item description (retrieved from Pederson et al., 1999).

### References

Pederson, D. R., Moran, G., & Bento, S. (1999). *Maternal Behaviour Q-sort (version 3.1)*. London, ON: Psychology Department, Western University.

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qset\_pq

*PQ Q-set criteria scores and derived scales*

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### Description

A data frame containing the Preschool Q-set (pq). In this dataset, column names ending in "\_c" refer to criteria sorts' scores, while column names ending in "\_s" refer to scales' scores.

### Usage

qset\_pq

**Format**

PQ dataset with 72 rows (items) and 6 columns.

**item** Item number from 1 to 72.

**qset** pq. Preschool Q-set (Baumrind, 1968 revised by Wanda Bronson).

**scomp\_c** Social competence criterion scores (retrieved from Waters et al., 1985).

**sest\_c** Self-esteem criterion scores (retrieved from Waters et al., 1985).

**sdes\_c** Social desirability criterion scores (retrieved from Waters et al., 1985).

**description** Item description (retrieved from Waters et al., 1985).

**References**

Baumrind, D. (1968). Manual for the Preschool Behaviour Q-set. Parental Research Project. Berkeley, CA: Institute of Human Development, University of California.

Waters, E., Noyes, D. M., Vaughn, B. E., & Ricks, M. (1985). Q-sort definitions of social competence and self-esteem: Discriminant validity of related constructs in theory and data. *Developmental Psychology*, 21, 508-522.

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qsort\_score

*qsort\_score*

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**Description**

qsort\_score returns a data frame with scores derived from criteria Q-sorts and from scales created from subsets of items.

**Usage**

```
qsort_score(x, qset, qsort_length, item1, subj_id = NULL, group_id = NULL)
```

**Arguments**

x	data frame. x should be in wide format, with each subject data in one row and the scores for qset items in different columns. Columns for qset items' scores should be ordered sequentially from left to right, starting with item 1.
qset	A data frame containing Q-set criterion scores and / or derived scales. For details see for example ?qset_aqs, ?qset_cqq, ?qset_mbqs and ?qset_pq.
qsort_length	The number of items in the qsort.
item1	Column name of x containing item 1 score
subj_id	Optional. Column name of x with subjects' identification codes.
group_id	Optional. Column name of x with groups' identification codes.

**Value**

qsort\_score function returns a data frame. This data frame will have a varying number of columns depending on the number of available criteria sorts and scales for the selected Q-set. Column names ending in "\_c" refer to criteria sorts' scores, while column names ending in "\_s" refer to scales' scores. Following Waters et al.'s (1985) suggestion about the influence of social desirability bias in Q-sort data, for Q-sets that have social desirability criterion scores, this data frame will also include criteria sorts' scores controlled for social desirability (i.e., partial correlations). Column names starting with "partial\_" refer to these scores. The different criteria sorts and scales for each Q-set can be consulted in the documentation of qsets object (?qsets).

**References**

- Baumrind, D. (1968). Manual for the Preschool Behaviour Q-set. Parental Research Project. Berkeley, CA: Institute of Human Development, University of California.
- Block, J. H., & Block, J. (1969). The California Child Q-Set. Berkeley, CA: Institute of Human Development, University of California.
- Pederson, D. R., Moran, G., & Bento, S. (1999). Maternal Behaviour Q-sort (version 3.1). London, ON: Psychology Department, Western University.
- Waters, E. (1995). Appendix A: The attachment Q-set (Version 3. 0). Monographs of the Society for Research in Child Development, 60, 234-246.
- Waters, E., Noyes, D. M., Vaughn, B. E., & Ricks, M. (1985). Q-sort definitions of social competence and self-esteem: Discriminant validity of related constructs in theory and data. Developmental Psychology, 21, 508-522.

**Examples**

```
data_ccq <- qsort_score(ex_qsort$ccq,
                      qset_ccq,
                      qsort_length = 100,
                      item1 = "ccq1",
                      subj_id = "participant",
                      group_id = "classroom")

data_ccq

data_aqs <- qsort_score(ex_qsort$aqs,
                      qset_aqs,
                      qsort_length = 90,
                      item1 = "aqs1")
```



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