

# Comparison of Versions of Kinship Links

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May 28, 2013

**Outcome:** HeightZGenderAge;

**RelationshipPath:** Gen1Housemates [ID:1]; **Newer Links Version:** 72; **Older Links Version:** 69;

Newer Links: Uses parents' birthyear at 0, 5, 15, +; supports

Older Links: Uses birth state of Parent of Gen1 -awful ROC performance vs  
explicit, but good vs roster

R Groups specifically excluded: { 0, 0.0625 }

Drop pair if housemates are not confirmed in the same generation: FALSE

## 1 Ace - Comparison of $R$ Variants

(See the final table for an explanation of the different  $R$  variants.)

| $R$ Variant    | $a_{new}^2$ | $c_{new}^2$ | $e_{new}^2$ | $N_{new}$ | $a_{old}^2$ | $c_{old}^2$ | $e_{old}^2$ | $N_{old}$ |
|----------------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|
| R              | .90         | .00         | .10         | 4087      | .90         | .00         | .10         | 4059      |
| RFull          | .90         | .00         | .10         | 4172      | .90         | .00         | .10         | 4095      |
| RExplicit      | .81         | .05         | .15         | 3728      | .81         | .05         | .15         | 3728      |
| RImplicit      | .41         | .24         | .35         | 2655      | .87         | .00         | .13         | 2434      |
| RImplicitPass1 | .37         | .25         | .38         | 822       | .37         | .25         | .38         | 822       |
| RImplicit2004  | .75         | .09         | .16         | 2262      | .75         | .09         | .16         | 2262      |

Table 1: Comparison of  $R$  Variants (by rows) and of Links Versions (left vs right side).

## 2 Subgroups – R

| R     | Included in SEM | $N_{Pairs}$ | $s_1^2$ | $s_2^2$ | $s_{1,2}$ | $r$  | Determinant | PosDefinite |
|-------|-----------------|-------------|---------|---------|-----------|------|-------------|-------------|
| 0.062 | FALSE           | 54          | 0.71    | 0.97    | 0.17      | 0.21 | 0.7         | TRUE        |
| 0.125 | TRUE            | 88          | 0.91    | 0.95    | 0.15      | 0.16 | 0.8         | TRUE        |
| 0.250 | TRUE            | 255         | 1.01    | 1.11    | 0.27      | 0.26 | 1.0         | TRUE        |
| 0.500 | TRUE            | 3733        | 0.97    | 1.02    | 0.44      | 0.44 | 0.8         | TRUE        |
| 1.000 | TRUE            | 11          | 0.29    | 0.61    | 0.37      | 0.89 | 0.0         | TRUE        |

Table 2: R – Newer Version of Links

| R     | Included in SEM | $N_{Pairs}$ | $s_1^2$ | $s_2^2$ | $s_{1,2}$ | $r$  | Determinant | PosDefinite |
|-------|-----------------|-------------|---------|---------|-----------|------|-------------|-------------|
| 0.062 | FALSE           | 55          | 0.70    | 0.98    | 0.18      | 0.22 | 0.7         | TRUE        |
| 0.125 | TRUE            | 88          | 0.91    | 0.95    | 0.15      | 0.16 | 0.8         | TRUE        |
| 0.250 | TRUE            | 254         | 1.02    | 1.10    | 0.27      | 0.25 | 1.1         | TRUE        |
| 0.500 | TRUE            | 3706        | 0.98    | 1.02    | 0.45      | 0.45 | 0.8         | TRUE        |
| 1.000 | TRUE            | 11          | 0.29    | 0.61    | 0.37      | 0.89 | 0.0         | TRUE        |

Table 3: R – Older Version of Links

### 3 Subgroups – RFull

| RFull | Included in SEM | $N_{Pairs}$ | $s_1^2$ | $s_2^2$ | $s_{1,2}$ | $r$  | Determinant | PosDefinite |
|-------|-----------------|-------------|---------|---------|-----------|------|-------------|-------------|
| 0.000 | FALSE           | 511         | 0.94    | 0.83    | 0.21      | 0.24 | 0.7         | TRUE        |
| 0.062 | FALSE           | 54          | 0.71    | 0.97    | 0.17      | 0.21 | 0.7         | TRUE        |
| 0.125 | TRUE            | 88          | 0.91    | 0.95    | 0.15      | 0.16 | 0.8         | TRUE        |
| 0.250 | TRUE            | 255         | 1.01    | 1.11    | 0.27      | 0.26 | 1.0         | TRUE        |
| 0.375 | TRUE            | 75          | 1.09    | 1.21    | 0.51      | 0.44 | 1.1         | TRUE        |
| 0.500 | TRUE            | 3733        | 0.97    | 1.02    | 0.44      | 0.44 | 0.8         | TRUE        |
| 0.750 | TRUE            | 10          | 0.78    | 0.76    | 0.55      | 0.71 | 0.3         | TRUE        |
| 1.000 | TRUE            | 11          | 0.29    | 0.61    | 0.37      | 0.89 | 0.0         | TRUE        |

Table 4: RFull – Newer Version of Links

| RFull | Included in SEM | $N_{Pairs}$ | $s_1^2$ | $s_2^2$ | $s_{1,2}$ | $r$  | Determinant | PosDefinite |
|-------|-----------------|-------------|---------|---------|-----------|------|-------------|-------------|
| 0.000 | FALSE           | 511         | 0.94    | 0.83    | 0.21      | 0.24 | 0.7         | TRUE        |
| 0.062 | FALSE           | 55          | 0.70    | 0.98    | 0.18      | 0.22 | 0.7         | TRUE        |
| 0.125 | TRUE            | 88          | 0.91    | 0.95    | 0.15      | 0.16 | 0.8         | TRUE        |
| 0.250 | TRUE            | 254         | 1.02    | 1.10    | 0.27      | 0.25 | 1.1         | TRUE        |
| 0.375 | TRUE            | 26          | 1.19    | 1.31    | 0.20      | 0.16 | 1.5         | TRUE        |
| 0.500 | TRUE            | 3706        | 0.98    | 1.02    | 0.45      | 0.45 | 0.8         | TRUE        |
| 0.750 | TRUE            | 10          | 0.78    | 0.76    | 0.55      | 0.71 | 0.3         | TRUE        |
| 1.000 | TRUE            | 11          | 0.29    | 0.61    | 0.37      | 0.89 | 0.0         | TRUE        |

Table 5: RFull – Older Version of Links

### 4 Subgroups – RExplicit

| RExplicit | Included in SEM | $N_{Pairs}$ | $s_1^2$ | $s_2^2$ | $s_{1,2}$ | $r$  | Determinant | PosDefinite |
|-----------|-----------------|-------------|---------|---------|-----------|------|-------------|-------------|
| 0.000     | FALSE           | 40          | 0.80    | 1.00    | 0.20      | 0.22 | 0.8         | TRUE        |
| 0.062     | FALSE           | 2           | 0.07    | 0.29    | 0.15      | 1.00 | 0.0         | FALSE       |
| 0.250     | TRUE            | 257         | 1.04    | 1.15    | 0.30      | 0.27 | 1.1         | TRUE        |
| 0.375     | TRUE            | 34          | 1.01    | 1.18    | 0.27      | 0.25 | 1.1         | TRUE        |
| 0.500     | TRUE            | 3437        | 0.97    | 1.02    | 0.44      | 0.45 | 0.8         | TRUE        |

Table 6: RExplicit – Newer Version of Links

| RExplicit | Included in SEM | $N_{Pairs}$ | $s_1^2$ | $s_2^2$ | $s_{1,2}$ | $r$  | Determinant | PosDefinite |
|-----------|-----------------|-------------|---------|---------|-----------|------|-------------|-------------|
| 0.000     | FALSE           | 40          | 0.80    | 1.00    | 0.20      | 0.22 | 0.8         | TRUE        |
| 0.062     | FALSE           | 2           | 0.07    | 0.29    | 0.15      | 1.00 | 0.0         | FALSE       |
| 0.250     | TRUE            | 257         | 1.04    | 1.15    | 0.30      | 0.27 | 1.1         | TRUE        |
| 0.375     | TRUE            | 34          | 1.01    | 1.18    | 0.27      | 0.25 | 1.1         | TRUE        |
| 0.500     | TRUE            | 3437        | 0.97    | 1.02    | 0.44      | 0.45 | 0.8         | TRUE        |

Table 7: RExplicit – Older Version of Links

## 5 Subgroups – RImplicit

| RImplicit | Included in SEM | $N_{Pairs}$ | $s_1^2$ | $s_2^2$ | $s_{1,2}$ | $r$  | Determinant | PosDefinite |
|-----------|-----------------|-------------|---------|---------|-----------|------|-------------|-------------|
| 0.000     | FALSE           | 160         | 1.00    | 0.78    | 0.25      | 0.28 | 0.7         | TRUE        |
| 0.250     | TRUE            | 52          | 0.98    | 1.50    | 0.49      | 0.41 | 1.2         | TRUE        |
| 0.500     | TRUE            | 2603        | 0.96    | 1.00    | 0.43      | 0.44 | 0.8         | TRUE        |

Table 8: RImplicit – Newer Version of Links

| RImplicit | Included in SEM | $N_{Pairs}$ | $s_1^2$ | $s_2^2$ | $s_{1,2}$ | $r$  | Determinant | PosDefinite |
|-----------|-----------------|-------------|---------|---------|-----------|------|-------------|-------------|
| 0.000     | FALSE           | 160         | 1.00    | 0.78    | 0.25      | 0.28 | 0.7         | TRUE        |
| 0.250     | TRUE            | 15          | 1.14    | 0.54    | 0.03      | 0.03 | 0.6         | TRUE        |
| 0.500     | TRUE            | 2419        | 0.97    | 0.98    | 0.43      | 0.44 | 0.8         | TRUE        |

Table 9: RImplicit – Older Version of Links

## 6 Subgroups – RImplicitPass1

| RImplicitPass1 | Included in SEM | $N_{Pairs}$ | $s_1^2$ | $s_2^2$ | $s_{1,2}$ | $r$  | Determinant | PosDefinite |
|----------------|-----------------|-------------|---------|---------|-----------|------|-------------|-------------|
| 0.000          | FALSE           | 1           |         |         |           |      |             |             |
| 0.500          | TRUE            | 822         | 0.94    | 1.01    | 0.42      | 0.44 | 0.8         | TRUE        |

Table 10: RImplicitPass1 – Newer Version of Links

| RImplicitPass1 | Included in SEM | $N_{Pairs}$ | $s_1^2$ | $s_2^2$ | $s_{1,2}$ | $r$  | Determinant | PosDefinite |
|----------------|-----------------|-------------|---------|---------|-----------|------|-------------|-------------|
| 0.000          | FALSE           | 1           |         |         |           |      |             |             |
| 0.500          | TRUE            | 822         | 0.94    | 1.01    | 0.42      | 0.44 | 0.8         | TRUE        |

Table 11: RImplicitPass1 – Older Version of Links

## 7 Subgroups – RImplicit2004

| RImplicit2004 | Included in SEM | $N_{Pairs}$ | $s_1^2$ | $s_2^2$ | $s_{1,2}$ | $r$  | Determinant | PosDefinite |
|---------------|-----------------|-------------|---------|---------|-----------|------|-------------|-------------|
| 0.125         | TRUE            | 70          | 0.78    | 0.94    | 0.03      | 0.04 | 0.7         | TRUE        |
| 0.250         | TRUE            | 42          | 0.77    | 0.98    | 0.22      | 0.25 | 0.7         | TRUE        |
| 0.375         | TRUE            | 297         | 0.96    | 1.22    | 0.51      | 0.47 | 0.9         | TRUE        |
| 0.500         | TRUE            | 1823        | 0.96    | 0.96    | 0.44      | 0.45 | 0.7         | TRUE        |
| 0.750         | TRUE            | 30          | 0.65    | 0.90    | 0.46      | 0.60 | 0.4         | TRUE        |

Table 12: RImplicit2004 – Newer Version of Links

| RImplicit2004 | Included in SEM | $N_{Pairs}$ | $s_1^2$ | $s_2^2$ | $s_{1,2}$ | $r$  | Determinant | PosDefinite |
|---------------|-----------------|-------------|---------|---------|-----------|------|-------------|-------------|
| 0.125         | TRUE            | 70          | 0.78    | 0.94    | 0.03      | 0.04 | 0.7         | TRUE        |
| 0.250         | TRUE            | 42          | 0.77    | 0.98    | 0.22      | 0.25 | 0.7         | TRUE        |
| 0.375         | TRUE            | 297         | 0.96    | 1.22    | 0.51      | 0.47 | 0.9         | TRUE        |
| 0.500         | TRUE            | 1823        | 0.96    | 0.96    | 0.44      | 0.45 | 0.7         | TRUE        |
| 0.750         | TRUE            | 30          | 0.65    | 0.90    | 0.46      | 0.60 | 0.4         | TRUE        |

Table 13: RImplicit2004 – Older Version of Links

## 8 Explanation of $R$ Variants

| Variant               | Explanation   |
|-----------------------|---|
| $R$                   | We recommend researchers typical use this version.  |
| $R_{Full}$            | The most complete version we have; doesn't exclude groups like $R=0$ .                    |
| $R_{Pass1}$           | Supposed to be fooled only by errors in the subject's/mother's knowledge                  |
| $RImplicit$           | Uses only implicit items  |
| $RImplicit_{Pass1}$   | Uses only implicit items & supposed to be fooled only by knowledge errors                 |
| $RImplicit_{Mother}$  | Uses only mother's implicit items (exists only for Gen2)                                  |
| $RImplicit_{Subject}$ | Uses only subject's implicit items  |
| $RImplicit_{2004}$    | The state of the links in 2004. Rodgers & Rowe for Gen1; Rodgers, Johnson & Bard for Gen2 |
| $RExplicit$           | Uses only explicit items  |
| $RExplicit_{Pass1}$   | Uses only explicit items & supposed to be fooled only by knowledge errors                 |