Robustness analyses with alternative scoring methods

[0,0,1] instead of [0,1,2] - Hypothesis 1, producibility

```
Linear mixed model fit by REML. t-tests use Satterthwaite's method
['lmerModLmerTest']

Formula: strobtest1 ~ relrep + (1 | paper)


REML criterion at convergence: -75.1


Scaled residuals:
     Min       1Q   Median       3Q      Max
-2.73308 -0.36381  0.06264  0.48909  2.28743


Random effects:
 Groups   Name        Variance Std.Dev.
 paper    (Intercept) 0.04380  0.2093
 Residual             0.01657  0.1287
Number of obs: 300, groups:  paper, 192


Fixed effects:
             Estimate Std. Error       df t value Pr(>|t|)
(Intercept) 5.690e-01  2.076e-02 2.533e+02  27.411   <2e-16 ***
relrepTRUE  1.657e-03  2.487e-02 2.561e+02   0.067    0.947
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


Correlation of Fixed Effects:
           (Intr)
relrepTRUE -0.558
```

[0,0,1] instead of [0,1,2] - Hypothesis 1, effectiveness

```
Linear mixed model fit by REML. t-tests use Satterthwaite's method
['lmerModLmerTest']
```

Formula: efftest1 ~ relrep + (1 | paper)

REML criterion at convergence: -83.1

Scaled residuals:

```
     Min        1Q    Median        3Q       Max
-2.65648  -0.42403   0.07548   0.34573   2.76695
```


Random effects:

```
 Groups    Name         Variance  Std.Dev.
 paper     (Intercept)  0.02957   0.1720
 Residual               0.02176   0.1475
Number of obs: 300, groups:  paper, 192
```


Fixed effects:

```
              Estimate Std. Error        df t value Pr(>|t|)
(Intercept)    0.33164    0.01950 243.87162  17.005   <2e-16 ***
relrepTRUE     0.01592    0.02531 290.70240   0.629     0.53
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```


Correlation of Fixed Effects:

```
           (Intr)
relrepTRUE -0.603
```

[0,0,1] instead of [0,1,2] - Hypothesis 2a, producibility

Linear mixed model fit by REML. t-tests use Satterthwaite's method ['lmerModLmerTest']

Formula: strobtest1 ~ OSF1vsAP + relrep + (1 | paper)

REML criterion at convergence: -115.3

Scaled residuals:

```
    Min      1Q  Median      3Q     Max
-2.9626 -0.4131  0.1330  0.3801  2.6521
```


Random effects:

Groups	Name	Variance	Std.Dev.
paper	(Intercept)	0.02979	0.1726
Residual		0.01326	0.1151

Number of obs: 222, groups: paper, 143

Fixed effects:

	Estimate	Std. Error	df	t value	Pr(>|t|)	
(Intercept)	0.45672	0.02858	166.91699	15.979	< 2e-16	***
OSF1vsAP	0.25883	0.03295	156.84888	7.855	5.94e-13	***
relrepTRUE	0.00460	0.02502	193.73446	0.184	0.854	

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Correlation of Fixed Effects:

	(Intr)	OSF1AP
OSF1vsAP	-0.686	
relrepTRUE	-0.446	0.025

[0,0,1] instead of [0,1,2] - Hypothesis 2a, effectiveness

```
Linear mixed model fit by REML. t-tests use Satterthwaite's method
['lmerModLmerTest']
```

Formula: efftest1 ~ OSF1vsAP + relrep + (1 | paper)

REML criterion at convergence: -74.4

Scaled residuals:

Min	1Q	Median	3Q	Max
-2.70226	-0.50421	-0.07879	0.44359	2.97253

Random effects:

Groups	Name	Variance	Std.Dev.
paper	(Intercept)	0.02727	0.1651
Residual		0.01987	0.1410

Number of obs: 222, groups: paper, 143

Fixed effects:

	Estimate	Std. Error	df	t value	Pr(>|t|)	
(Intercept)	0.25108	0.02995	158.80626	8.382	2.62e-14	***
OSF1vsAP	0.17527	0.03432	147.61110	5.107	9.97e-07	***
relrepTRUE	0.02531	0.02807	212.33125	0.902	0.368	

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Correlation of Fixed Effects:

	(Intr)	OSF1AP
OSF1vsAP	-0.676	
relrepTRUE	-0.471	0.020

[0,0,1] instead of [0,1,2] - Hypothesis 2b, producibility

Linear mixed model fit by REML. t-tests use Satterthwaite's method ['lmerModLmerTest']

Formula: strobtest1 ~ OSF1vsSP + relrep + (1 | paper)

REML criterion at convergence: -51.7

Scaled residuals:

```
    Min      1Q  Median      3Q     Max
-2.3963 -0.3120  0.1341  0.4243  1.8169
```


Random effects:

```
 Groups    Name        Variance Std.Dev.
 paper    (Intercept) 0.03059  0.1749
 Residual              0.01300  0.1140
```

Number of obs: 133, groups: paper, 100

Fixed effects:

	Estimate	Std. Error	df	t value	Pr(>|t|)	
(Intercept)	0.537846	0.054934	95.900882	9.791	4.23e-16	***
OSF1vsSP	0.181456	0.059345	95.671676	3.058	0.00289	**
relrepTRUE	-0.001957	0.030823	86.980335	-0.063	0.94953	

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Correlation of Fixed Effects:

```
           (Intr) OSF1SP
OSF1vsSP   -0.894
relrepTRUE -0.124 -0.138
```

[0,0,1] instead of [0,1,2] - Hypothesis 2b, effectiveness

```
Linear mixed model fit by REML. t-tests use Satterthwaite's method
['lmerModLmerTest']
```

```
Formula: efftest1 ~ OSF1vsSP + relrep + (1 | paper)
```

```
REML criterion at convergence: -15.6
```

```
Scaled residuals:
    Min       1Q  Median       3Q      Max
-1.9287 -0.6805 -0.1226  0.4911  1.9906
```

```
Random effects:
 Groups   Name        Variance Std.Dev.
 paper    (Intercept) 0.02654  0.1629
 Residual             0.02554  0.1598
Number of obs: 133, groups:  paper, 100
```

```
Fixed effects:
             Estimate Std. Error        df t value Pr(>|t|)
(Intercept) 2.714e-01  5.898e-02 9.369e+01   4.601 1.32e-05 ***
OSF1vsSP    1.686e-01  6.365e-02 9.225e+01   2.648  0.00952 **
relrepTRUE  2.108e-03  3.765e-02 1.128e+02   0.056  0.95546
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Correlation of Fixed Effects:
           (Intr) OSF1SP
OSF1vsSP   -0.885
relrepTRUE -0.145 -0.150
```

[0,0,1] instead of [0,1,2] - Hypothesis 3, producibility

```
Linear mixed model fit by REML. t-tests use Satterthwaite's method
['lmerModLmerTest']
```

Formula: strobtest1 ~ months + relrep + (1 | paper)

REML criterion at convergence: -63.4

Scaled residuals:

Min	1Q	Median	3Q	Max
-2.72959	-0.36387	0.06249	0.48667	2.28306

Random effects:

Groups	Name	Variance	Std.Dev.
paper	(Intercept)	0.04397	0.2097
Residual		0.01661	0.1289

Number of obs: 300, groups: paper, 192

Fixed effects:

	Estimate	Std. Error	df	t value	Pr(>|t|)	
(Intercept)	5.678e-01	4.895e-02	2.934e+02	11.601	<2e-16	***
months	3.075e-05	1.175e-03	2.945e+02	0.026	0.979	
relrepTRUE	1.606e-03	2.498e-02	2.577e+02	0.064	0.949	

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Correlation of Fixed Effects:

	(Intr)	months
months	-0.905	
relrepTRUE	-0.172	-0.072

[0,0,1] instead of [0,1,2] - Hypothesis 3, effectiveness

```
Linear mixed model fit by REML. t-tests use Satterthwaite's method
['lmerModLmerTest']

Formula: efftest1 ~ months + relrep + (1 | paper)


REML criterion at convergence: -72.1


Scaled residuals:
     Min        1Q   Median        3Q       Max
-2.64111  -0.43292  0.08035   0.34625   2.78210


Random effects:
 Groups    Name         Variance Std.Dev.
 paper     (Intercept)  0.02965  0.1722
 Residual               0.02176  0.1475
Number of obs: 300, groups:  paper, 192


Fixed effects:
              Estimate Std. Error        df t value Pr(>|t|)
(Intercept)   0.366574   0.047188 274.314298   7.768  1.6e-13 ***
months       -0.000921   0.001133 272.092348  -0.813    0.417
relrepTRUE    0.017004   0.025361 290.421306   0.670    0.503
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


Correlation of Fixed Effects:
           (Intr) months
months     -0.910
relrepTRUE -0.202 -0.052
```

[0,1,1] instead of [0,1,2] – Hypothesis 1, producibility

```
Linear mixed model fit by REML. t-tests use Satterthwaite's method
['lmerModLmerTest']
```

Formula: strobtest2 ~ relrep + (1 | paper)

REML criterion at convergence: -225.6

Scaled residuals:

```
     Min       1Q   Median       3Q      Max
-2.80649 -0.22777  0.05878  0.32125  2.49368
```


Random effects:

```
 Groups    Name         Variance Std.Dev.
 paper     (Intercept) 0.031055 0.17623
 Residual              0.008461 0.09199
Number of obs: 300, groups:  paper, 192
```


Fixed effects:

```
             Estimate Std. Error        df t value Pr(>|t|)
(Intercept)  7.748e-01  1.654e-02  2.572e+02  46.839   <2e-16 ***
relrepTRUE  -8.676e-04  1.877e-02  2.351e+02  -0.046    0.963
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```


Correlation of Fixed Effects:

```
           (Intr)
relrepTRUE -0.529
```

[0,1,1] instead of [0,1,2] – Hypothesis 1, effectiveness

```
Linear mixed model fit by REML. t-tests use Satterthwaite's method
['lmerModLmerTest']

Formula: efftest2 ~ relrep + (1 | paper)


REML criterion at convergence: -59.7


Scaled residuals:
    Min      1Q  Median      3Q     Max
-2.2547 -0.5439 -0.1376  0.4095  2.3769


Random effects:
 Groups    Name        Variance Std.Dev.
 paper     (Intercept) 0.02660  0.1631
 Residual              0.02641  0.1625
Number of obs: 300, groups:  paper, 192


Fixed effects:
             Estimate Std. Error        df t value Pr(>|t|)
(Intercept)   0.46642    0.01986 234.40030  23.480   <2e-16 ***
relrepTRUE    0.01126    0.02645 296.78527   0.426    0.671
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


Correlation of Fixed Effects:
           (Intr)
relrepTRUE -0.617
```

[0,1,1] instead of [0,1,2] – Hypothesis 2a, producibility

```
Linear mixed model fit by REML. t-tests use Satterthwaite's method
['lmerModLmerTest']
Formula: strobtest2 ~ OSF1vsAP + relrep + (1 | paper)


REML criterion at convergence: -258.3


Scaled residuals:
    Min       1Q  Median       3Q      Max
-3.1545 -0.2570  0.1320   0.3357   2.4848


Random effects:
 Groups    Name         Variance Std.Dev.
 paper     (Intercept)  0.019065 0.1381
 Residual               0.005625 0.0750
Number of obs: 222, groups:  paper, 143


Fixed effects:
              Estimate Std. Error        df t value Pr(>|t|)
(Intercept) 7.012e-01  2.145e-02 1.785e+02  32.693  < 2e-16 ***
OSF1vsAP    1.834e-01  2.484e-02 1.725e+02   7.385 6.25e-12 ***
relrepTRUE  4.864e-03  1.747e-02 1.765e+02   0.278    0.781
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


Correlation of Fixed Effects:
           (Intr) OSF1AP
OSF1vsAP   -0.694
relrepTRUE -0.421  0.031
```

[0,1,1] instead of [0,1,2] – Hypothesis 2a, effectiveness

```
Linear mixed model fit by REML. t-tests use Satterthwaite's method
['lmerModLmerTest']
```

```
Formula: efftest2 ~ OSF1vsAP + relrep + (1 | paper)
```

```
REML criterion at convergence: -56.3
```

```
Scaled residuals:
     Min        1Q    Median        3Q       Max
-2.43527  -0.53911  -0.03526   0.53438   2.32149
```

```
Random effects:
 Groups    Name         Variance  Std.Dev.
 paper     (Intercept)  0.02328   0.1526
 Residual               0.02502   0.1582
Number of obs: 222, groups:  paper, 143
```

```
Fixed effects:
              Estimate  Std. Error        df  t value  Pr(>|t|)
(Intercept)    0.41596     0.03014  149.00011   13.802  < 2e-16 ***
OSF1vsAP       0.12781     0.03438  138.27202    3.717 0.000292 ***
relrepTRUE     0.02086     0.02944  218.35114    0.709 0.479367
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Correlation of Fixed Effects:
           (Intr) OSF1AP
OSF1vsAP   -0.668
relrepTRUE -0.489  0.020
```

[0,1,1] instead of [0,1,2] – Hypothesis 2b, producibility

```
Linear mixed model fit by REML. t-tests use Satterthwaite's method
['lmerModLmerTest']
Formula: strobtest2 ~ OSF1vsSP + relrep + (1 | paper)


REML criterion at convergence: -162.3


Scaled residuals:
    Min      1Q  Median      3Q     Max
-3.3090 -0.3764  0.1973  0.4604  1.8293


Random effects:
 Groups   Name        Variance Std.Dev.
 paper    (Intercept) 0.01212  0.11007
 Residual             0.00606  0.07785
Number of obs: 133, groups:  paper, 100


Fixed effects:
             Estimate Std. Error        df t value Pr(>|t|)
(Intercept)  0.766094   0.035373 95.584356  21.658  < 2e-16 ***
OSF1vsSP     0.121796   0.038210 95.172367   3.188  0.00194 **
relrepTRUE   0.004602   0.020473 92.705486   0.225  0.82264
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


Correlation of Fixed Effects:
           (Intr) OSF1SP
OSF1vsSP   -0.892
relrepTRUE -0.129 -0.141
```

[0,1,1] instead of [0,1,2] – Hypothesis 2b, effectiveness

```
Linear mixed model fit by REML. t-tests use Satterthwaite's method
['lmerModLmerTest']

Formula: efftest2 ~ OSF1vsSP + relrep + (1 | paper)


REML criterion at convergence: -2.9


Scaled residuals:
    Min      1Q  Median      3Q     Max
-2.2391 -0.5328  0.0572  0.8043  1.8830


Random effects:
 Groups   Name        Variance Std.Dev.
 paper    (Intercept) 0.02115  0.1454
 Residual             0.03406  0.1845
Number of obs: 133, groups:  paper, 100


Fixed effects:
             Estimate Std. Error        df t value Pr(>|t|)
(Intercept) 3.829e-01  5.977e-02 9.194e+01   6.406 6.27e-09 ***
OSF1vsSP    1.709e-01  6.443e-02 8.945e+01   2.653  0.00944 **
relrepTRUE  5.569e-03  4.023e-02 1.229e+02   0.138  0.89014
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


Correlation of Fixed Effects:
           (Intr) OSF1SP
OSF1vsSP   -0.881
relrepTRUE -0.157 -0.152
```

[0,1,1] instead of [0,1,2] – Hypothesis 3, producibility

```
Linear mixed model fit by REML. t-tests use Satterthwaite's method
['lmerModLmerTest']
```

Formula: strobtest2 ~ months + relrep + (1 | paper)

REML criterion at convergence: -213.8

Scaled residuals:

Min	1Q	Median	3Q	Max
-2.81267	-0.23065	0.05349	0.35903	2.55182

Random effects:

Groups	Name	Variance	Std.Dev.
paper	(Intercept)	0.030967	0.17598
Residual		0.008521	0.09231

Number of obs: 300, groups: paper, 192

Fixed effects:

	Estimate	Std. Error	df	t value	Pr(>|t|)	
(Intercept)	7.515e-01	3.814e-02	2.969e+02	19.704	<2e-16	***
months	6.197e-04	9.136e-04	2.968e+02	0.678	0.498	
relrepTRUE	-1.969e-03	1.887e-02	2.382e+02	-0.104	0.917	

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Correlation of Fixed Effects:

	(Intr)	months
months	-0.901	
relrepTRUE	-0.154	-0.083

[0,1,1] instead of [0,1,2] – Hypothesis 3, effectiveness

```
Linear mixed model fit by REML. t-tests use Satterthwaite's method
['lmerModLmerTest']
```

```
Formula: efftest1 ~ months + relrep + (1 | paper)
```

```
REML criterion at convergence: -72.1
```

```
Scaled residuals:
     Min       1Q   Median       3Q      Max
-2.64111 -0.43292  0.08035  0.34625  2.78210
```

```
Random effects:
 Groups   Name        Variance Std.Dev.
 paper    (Intercept) 0.02965  0.1722
 Residual             0.02176  0.1475
Number of obs: 300, groups:  paper, 192
```

```
Fixed effects:
             Estimate Std. Error         df t value Pr(>|t|)
(Intercept)  0.366574   0.047188 274.314298   7.768  1.6e-13 ***
months      -0.000921   0.001133 272.092348  -0.813    0.417
relrepTRUE   0.017004   0.025361 290.421306   0.670    0.503
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Correlation of Fixed Effects:
           (Intr) months
months     -0.910
relrepTRUE -0.202 -0.052
```