

CORRECTION

Corrigendum: Distinguishing Between Need Support and Regulatory Focus with LIWC

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Following the publication of our recent article in *Collabra: Psychology* [<https://www.collabra.org/articles/10.1525/collabra.185/>] we wish to bring the following corrigendum to your attention.

Corrigendum

In the version of the paper initially published, several tables in the main text had typographical errors. These errors were not in the data files or the results reported in the supplementary materials, and they do not affect

any of the conclusions in the paper. The author thanks her students, Trish Burkins, Janak Judd, and Jennifer Ochiagha, for finding these errors. These errors have been corrected in the preprint version of the paper on the OSF and PsyArXiv.

Table 3: Study 1a: Condition Statistics and Tests of Between-Condition Differences on LIWC Word Categories used at least 0.5% of the Time.

| Word Type | Examples | High NS | | Low NS | | Tests of between-condition differences | | | | |
|-----------------------|----------------------|----------|-----------|----------|-----------|--|-------------|------------|----------------|----------|
| | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>df</i> | <i>t</i> | Mean diff. | 95% CI | <i>d</i> |
| High NS higher | | | | | | | | | | |
| Clout/influence | ^a | 26.53 | 25.25 | 17.46 | 19.74 | 477.41 | 4.50 | 9.07 | [5.11, 13.05] | 0.400 |
| Emotional tone | ^b | 69.53 | 31.15 | 23.69 | 29.17 | 499.96 | 17.04 | 45.84 | [40.56, 51.13] | 1.519 |
| Personal pronouns | I, them, her | 14.72 | 5.64 | 12.77 | 4.25 | 470.43 | 4.37 | 1.94 | [1.07, 2.82] | 0.388 |
| Interrogatives | how, when, what | 3.17 | 3.59 | 1.65 | 1.87 | 382.89 | 5.98 | 1.52 | [1.02, 2.03] | 0.531 |
| Positive emotion | love, nice, sweet | 3.94 | 3.66 | 1.59 | 2.18 | 413.96 | 8.80 | 2.36 | [1.83, 2.88] | 0.781 |
| Causation | because, effect | 2.81 | 3.84 | 1.53 | 2.05 | 387.75 | 4.70 | 1.28 | [0.75, 1.82] | 0.416 |
| Drives | ally, win, danger | 11.12 | 6.56 | 8.59 | 6.57 | 500.77 | 4.32 | 2.53 | [1.38, 3.68] | 0.385 |
| Reward | take, prize, benefit | 2.05 | 2.65 | 1.12 | 1.75 | 439.78 | 4.62 | 0.92 | [0.53, 1.32] | 0.410 |
| Low NS higher | | | | | | | | | | |
| Auxiliary verbs | am, will, have | 7.99 | 4.88 | 10.16 | 4.47 | 501.00 | -5.21 | -2.17 | [-2.99, -1.35] | -0.464 |
| Negations | no, not, never | 0.60 | 1.44 | 2.61 | 2.30 | 414.52 | -11.71 | -2.01 | [-2.35, -1.67] | -1.049 |
| Negative emotion | hurt, ugly, nasty | 0.20 | 0.74 | 3.29 | 3.28 | 272.45 | -14.51 | -3.09 | [-3.50, -2.67] | -1.306 |
| Anxiety | worried, fearful | 0.06 | 0.40 | 1.40 | 2.19 | 264.36 | -9.50 | -1.34 | [-1.62, -1.07] | -0.855 |
| Tentative | maybe, perhaps | 1.26 | 2.13 | 2.39 | 2.41 | 491.17 | -5.54 | -1.13 | [-1.52, -0.73] | -0.495 |
| Differentiation | hasn't, but, else | 1.84 | 2.68 | 3.73 | 3.02 | 491.79 | -7.45 | -1.90 | [-2.40, -1.40] | -0.665 |

Note: NS = need support. To limit the potential for false-positive results in the linguistic analyses, I set a conservative limit for statistical significance at $p < .001$, two-tailed, and $d \geq \pm .375$. Degrees of freedom are adjusted for heterogeneity of variance. Mean values indicate the mean percentage of all of the words that participants used that fell into a particular category, except the mean values for words per sentence and the summary variables (clout and tone). ^aThe clout/influence variable is by Kacewicz et al. (2014). ^bThe emotional tone variable is by Cohn et al. (2004).

Table 4: Study 1b: Condition Statistics and Tests of Between-Condition Differences on LIWC Word Categories used at least 0.5% of the Time.

| Word Type | Examples | High NS | | Low NS | | Tests of between-condition differences | | | | |
|-----------------------|----------------------|----------|-----------|----------|-----------|--|-------------|------------|----------------|----------|
| | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>df</i> | <i>t</i> | Mean diff. | 95% CI | <i>d</i> |
| High NS higher | | | | | | | | | | |
| Analytical thinking | ^a | 59.29 | 29.55 | 45.86 | 33.16 | 431.18 | 4.48 | 13.43 | [7.53, 19.32] | 0.427 |
| Clout/influence | ^b | 35.06 | 29.37 | 23.22 | 27.49 | 436.00 | 4.36 | 11.84 | [6.50, 17.18] | 0.416 |
| Emotional tone | ^c | 81.30 | 28.35 | 44.33 | 36.83 | 410.91 | 11.78 | 36.97 | [30.80, 43.14] | 1.124 |
| Positive emotion | love, nice, sweet | 7.54 | 7.93 | 4.34 | 6.00 | 404.01 | 4.75 | 3.20 | [1.87, 4.52] | 0.455 |
| Social processes | mate, talk, they | 8.32 | 7.48 | 5.38 | 7.01 | 433.59 | 4.26 | 2.95 | [1.59, 4.31] | 0.407 |
| Friends | buddy, neighbor | 1.06 | 2.66 | 0.22 | 0.84 | 259.86 | 4.47 | 0.84 | [0.47, 1.21] | 0.428 |
| Affiliation | ally, friend, social | 5.37 | 6.58 | 2.43 | 6.80 | 453.78 | 4.60 | 2.94 | [1.69, 4.20] | 0.440 |
| Low NS higher | | | | | | | | | | |
| Auxiliary verbs | am, will, have | 5.69 | 4.47 | 9.04 | 6.46 | 390.08 | -6.30 | -3.34 | [-4.39, -2.30] | -0.601 |
| Common adverbs | very, really | 3.05 | 3.23 | 5.15 | 4.52 | 396.37 | -5.61 | -2.10 | [-2.84, -1.37] | -0.535 |
| Negations | no, not, never | 0.50 | 1.32 | 1.63 | 1.89 | 391.77 | -7.27 | -1.13 | [-1.43, -0.82] | -0.694 |
| Negative emotion | hurt, ugly, nasty | 0.22 | 0.74 | 2.46 | 2.81 | 249.89 | -11.45 | -2.24 | [-2.63, -1.86] | -1.090 |
| Anxiety | worried, fearful | 0.06 | 0.43 | 1.12 | 1.72 | 246.88 | -8.84 | -1.06 | [-1.30, -0.82] | -0.842 |
| Cognitive processes | cause, know, ought | 10.00 | 7.01 | 14.30 | 8.36 | 424.28 | -5.83 | -4.30 | [-5.75, -2.85] | -0.557 |
| Differentiation | hasn't, but, else | 2.22 | 2.84 | 3.68 | 3.39 | 424.47 | -4.90 | -1.46 | [-2.05, -0.88] | -0.468 |
| Feel | feels, touch | 1.14 | 2.09 | 2.25 | 2.58 | 419.52 | -4.93 | -1.10 | [-1.55, -0.66] | -0.471 |

Note: NS = need support. To limit the potential for false-positive results in the linguistic analyses, I set a conservative limit for statistical significance at $p < .001$, two-tailed, and $d \geq \pm .402$. Degrees of freedom are adjusted for heterogeneity of variance. Mean values indicate the mean percentage of all of the words that participants used that fell into a particular category, except the mean values for words per sentence and the summary variables (analytical thinking, clout, and tone). ^aThe analytical thinking variable is by Pennebaker et al. (2015). ^bThe clout/influence variable is by Kacewicz et al. (2014). ^cThe emotional tone variable is by Cohn et al. (2004).

Table 5: Study 2: Condition Statistics and Tests of Between-Condition Differences on LIWC Word Categories used at least 0.5% of the Time.

| Word Type | Examples | Hopes | | Duties | | Tests of between-condition differences | | | | |
|----------------------------------|----------------------|--------------|--------------|--------------|--------------|--|-------------|--------------|-----------------------|----------|
| | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>df</i> | <i>t</i> | Mean diff. | 95% CI | <i>d</i> |
| Hopes higher | | | | | | | | | | |
| Emotional tone | ^a | 62.94 | 35.25 | 42.91 | 33.80 | 444.04 | 6.13 | 20.02 | [13.60, 26.44] | 0.580 |
| Words with more than six letters | – | 18.88 | 12.64 | 13.66 | 8.15 | 379.11 | 5.16 | 5.19 | [3.21, 7.17] | 0.488 |
| Positive emotion | love, nice, sweet | 3.69 | 4.32 | 2.08 | 3.08 | 426.22 | 4.91 | 1.61 | [0.96, 2.25] | 0.465 |
| Reward | take, prize, benefit | 3.17 | 3.78 | 1.75 | 2.84 | 411.85 | 4.49 | 1.42 | [0.80, 2.04] | 0.425 |
| Work | job, majors, read | 10.26 | 8.92 | 6.25 | 8.94 | 445.00 | 4.74 | 4.00 | [2.34, 5.56] | 0.448 |

(Contd.)

| Word Type | Examples | Hopes | | Duties | | Tests of between-condition differences | | | | |
|-----------------------|---------------------|--------------|--------------|--------------|--------------|--|--------------|--------------|-----------------------|----------|
| | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>df</i> | <i>t</i> | Mean diff. | 95% CI | <i>d</i> |
| Duties higher | | | | | | | | | | |
| LIWC dictionary words | – | 91.28 | 8.58 | 94.31 | 6.03 | 398.04 | –4.32 | –3.03 | [–4.41, –1.65] | –0.409 |
| Total function words | it, to, no, very | 52.82 | 10.97 | 58.29 | 10.26 | 445.00 | –5.45 | –5.47 | [–7.45, –3.50] | –0.515 |
| Total pronouns | I, them, itself | 15.51 | 7.73 | 19.68 | 7.86 | 445.00 | –5.67 | –4.18 | [–5.63, –2.73] | –0.536 |
| Personal pronouns | I, them, her | 12.15 | 6.29 | 15.46 | 6.52 | 445.00 | –5.46 | –3.31 | [–4.50, –2.12] | –0.517 |
| Third person singular | she, her, him | 0.24 | 1.32 | 2.01 | 3.60 | 281.58 | –6.89 | –1.77 | [–2.27, –1.26] | –0.651 |
| Negations | no, not, never | 0.27 | 0.97 | 1.27 | 2.02 | 321.08 | –6.68 | –1.00 | [–1.30, –0.71] | –0.631 |
| Negative emotion | hurt, ugly, nasty | 0.30 | 1.10 | 1.02 | 2.06 | 340.08 | –4.77 | –0.74 | [–1.05, –0.44] | –0.450 |
| Social processes | mate, talk, they | 4.36 | 6.20 | 9.25 | 7.85 | 423.26 | –7.31 | –4.89 | [–5.44, –3.58] | –0.691 |
| Family | daughter, dad, aunt | 0.60 | 2.77 | 2.05 | 3.24 | 548.25 | –5.10 | –1.45 | [–2.01, –0.89] | –0.482 |
| Female references | girl, her, mom | 0.44 | 2.80 | 2.27 | 4.51 | 372.88 | –5.15 | –1.83 | [–2.53, –1.13] | –0.487 |
| Differentiation | hasn't, but, else | 0.99 | 2.12 | 2.74 | 3.50 | 367.94 | –6.37 | –1.74 | [–2.28, –1.20] | –0.602 |

Note: To limit the potential for false-positive results, I set a conservative limit for inclusion in this table at $p < .001$, two-tailed, and $d \geq \pm .399$. Degrees of freedom are adjusted for heterogeneity of variance. Mean values indicate the mean percentage of all of the words that participants used that fell into a particular category, except the mean values for words with more than six letter, LIWC dictionary words, and the summary variable (tone). ^aThe emotional tone variable is by Cohn et al. (2004).

Table 6: Vaughn (2018): Condition Statistics and Tests of Between-Condition Differences on LIWC Word Categories used at least 0.5% of the Time.

| Word Type | Examples | Hopes | | Duties | | Tests of between-condition differences | | | | |
|----------------------|----------------------|----------|-----------|----------|-----------|--|----------|------------|-----------------|----------|
| | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>df</i> | <i>t</i> | Mean diff. | 95% CI | <i>d</i> |
| Hopes higher | | | | | | | | | | |
| Analytical thinking | ^a | 69.01 | 28.30 | 53.94 | 32.77 | 588.19 | 6.04 | 15.07 | [10.17, 19.98] | 0.492 |
| Emotional tone | ^b | 61.77 | 34.27 | 43.13 | 34.48 | 599.00 | 6.64 | 18.63 | [13.13, 24.14] | 0.542 |
| Positive emotion | love, nice, sweet | 3.82 | 4.32 | 2.27 | 3.06 | 536.24 | 5.09 | 1.56 | [0.96, 2.16] | 0.416 |
| Achievement | win, success, better | 4.38 | 5.38 | 2.38 | 3.85 | 539.66 | 5.24 | 2.00 | [1.25, 2.75] | 0.428 |
| Reward | take, prize, benefit | 3.56 | 5.06 | 1.80 | 2.83 | 466.50 | 5.24 | 1.75 | [1.10, 2.41] | 0.429 |
| Work | job, majors, read | 9.72 | 9.27 | 5.88 | 6.55 | 535.95 | 5.87 | 3.84 | [2.56, 5.13] | 0.479 |
| Leisure | cook, chat, movie | 2.89 | 5.64 | 0.90 | 2.09 | 377.53 | 5.73 | 1.99 | [1.31, 2.68] | 0.469 |
| Duties higher | | | | | | | | | | |
| Clout/influence | ^c | 24.73 | 23.57 | 34.59 | 30.00 | 569.65 | –4.48 | –9.86 | [–14.19, –5.54] | –0.365 |
| Words per sentence | – | 15.52 | 6.68 | 18.26 | 8.05 | 599.00 | –4.53 | –2.73 | [–3.92, –1.55] | –0.369 |

(Contd.)

| Word Type | Examples | Hopes | | Duties | | Tests of between-condition differences | | | | |
|-----------------------|----------------------|-------------|-------------|-------------|-------------|--|--------------|--------------|-----------------------|----------|
| | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>df</i> | <i>t</i> | Mean diff. | 95% CI | <i>d</i> |
| Total function words | it, to, no, very | 53.33 | 10.33 | 58.40 | 8.46 | 599.00 | -6.58 | -5.07 | [-6.58, -3.55] | -0.537 |
| Total pronouns | I, them, itself | 15.54 | 7.13 | 19.24 | 6.93 | 599.00 | -6.45 | -3.70 | [-4.83, -2.57] | -0.526 |
| Personal pronouns | I, them, her | 12.31 | 6.02 | 14.80 | 6.02 | 599.00 | -5.07 | -2.49 | [-3.46, -1.53] | -0.414 |
| Third person singular | she, her, him | 0.20 | 1.07 | 1.86 | 3.48 | 358.05 | -7.93 | -1.66 | [-2.08, -1.25] | -0.645 |
| Conjunctions | and, but, whereas | 4.69 | 4.05 | 6.62 | 4.47 | 599.00 | -5.55 | -1.93 | [-2.62, -1.25] | -0.453 |
| Negations | no, not, never | 0.42 | 1.10 | 1.27 | 2.13 | 452.50 | -6.16 | -0.85 | [-1.12, -0.58] | -0.501 |
| Negative emotion | hurt, ugly, nasty | 0.41 | 1.37 | 1.53 | 2.95 | 426.97 | -5.98 | -1.12 | [-1.49, -0.75] | -0.487 |
| Social processes | mate, talk, they | 4.39 | 6.23 | 9.82 | 8.70 | 545.33 | -8.82 | -5.44 | [-6.65, -4.23] | -0.718 |
| Family | daughter, dad, aunt | 0.70 | 2.64 | 2.01 | 3.65 | 548.25 | -5.04 | -1.31 | [-1.82, -0.80] | -0.411 |
| Female references | girl, her, mom | 0.31 | 1.60 | 2.03 | 4.30 | 383.37 | -6.49 | -1.72 | [-2.24, -1.20] | -0.376 |
| Male references | boy, his, dad | 0.41 | 1.70 | 1.38 | 3.54 | 433.92 | -4.29 | -0.97 | [-1.41, -0.52] | -0.528 |
| Differentiation | hasn't, but, else | 1.31 | 2.35 | 2.67 | 3.48 | 528.34 | -5.66 | -1.37 | [-1.84, -0.89] | -0.348 |
| Affiliation | ally, friend, social | 1.45 | 3.06 | 3.39 | 5.24 | 486.33 | -5.54 | -1.94 | [-2.63, -1.25] | -0.451 |

Note: To limit the potential for false-positive results, I set a conservative limit for inclusion in this table at $p < .001$, two-tailed, and $d \geq \pm .344$. Degrees of freedom are adjusted for heterogeneity of variance. Mean values indicate the mean percentage of all of the words that participants used that fell into a particular category, except the mean values for words per sentence and the summary variables (analytical thinking, tone, and clout). ^aThe analytical thinking variable is by Pennebaker et al. (2015). ^bThe emotional tone variable is by Cohn et al. (2004). ^cThe clout/influence variable is by Kacwicz et al. (2014).

Table 8: Hopes and High Need-Support Conditions of the Combined Dataset: Condition Statistics and Tests of Between-Condition Differences on LIWC Word Categories used at least 0.5% of the Time.

| Word Type | Examples | Hopes | | High NS | | Tests of between-condition differences | | | | |
|-----------------------|----------------------|----------|-----------|----------|-----------|--|----------|------------|----------------|----------|
| | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>df</i> | <i>t</i> | Mean diff. | 95% CI | <i>d</i> |
| Hopes higher | | | | | | | | | | |
| Work | job, majors, read | 9.95 | 9.12 | 6.34 | 8.83 | 987.32 | 6.33 | 3.61 | [2.49, 4.73] | 0.402 |
| High NS higher | | | | | | | | | | |
| Total pronouns | I, them, itself | 15.52 | 7.39 | 18.58 | 7.30 | 992.00 | -6.56 | -3.06 | [-3.97, -2.14] | -0.417 |
| Conjunctions | and, but, whereas | 4.88 | 4.12 | 7.32 | 4.47 | 992.00 | -8.99 | -2.45 | [-2.98, -1.91] | -0.571 |
| Interrogatives | how, when, what | 1.13 | 2.47 | 2.58 | 3.27 | 872.54 | -7.80 | -1.45 | [-1.81, -1.08] | -0.502 |
| Social processes | mate, talk, they | 4.38 | 6.21 | 7.40 | 6.62 | 992.00 | -7.44 | -3.03 | [-3.83, -2.23] | -0.473 |
| Feel | feels, touch | 0.55 | 1.55 | 1.58 | 2.20 | 836.15 | -8.48 | -1.03 | [-1.27, -0.79] | -0.548 |
| Affiliation | ally, friend, social | 1.51 | 3.21 | 4.30 | 5.42 | 749.49 | -9.74 | -2.79 | [-3.35, -2.23] | -0.634 |

Note: NS = need support. To facilitate comparisons with the bold-font effect sizes in Table 7, which were $d \geq \pm .402$, I set a conservative limit for inclusion in Table 8 at $p < .001$, two-tailed, and $d \geq \pm .402$. Degrees of freedom are adjusted for heterogeneity of variance. Mean values indicate the mean percentage of all of the words that participants used that fell into a particular category.

Competing Interests

The author has no competing interests to declare.

Reference

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