Additional Analyses

Relation Training Performance and Near-Transfer Task Performance

Change detection task. As not all individuals may benefit equally from training, we examined the relation between change in performance on the dual n-back training task and change in performance on the CDT. Within the WMT condition we calculated correlations between the change in mean dual n-back level across training, thus from the first training session to the last session, and the change in K-score on the change detection task. However, no significant relations were observed, all ps > .05.

Scrambled sentence task. Additionally, within the CBM-I condition we examined the relation between change on the CBM-I training catch trials (from the 1st to last training session) and change in performance on the SST (from pre- to post-training), to account for inter-individual differences in the benefit from training. This revealed a near significant correlation, r = .44, p = .052, indicating that a greater change in performance (i.e. positivity) on the catch trials in the CBM-I training task transferred to a greater increase in positive interpretation bias on the scrambled sentence task.

Individual Differences in Impact of Training on Self-Report Measures

To take into account inter-individual differences in training effectiveness on working memory capacity and interpretation bias, we explored whether changes in performance on the CDT distractor-item and four-item trials, and changes in positivity index on the SST correlated with the change in self-report measures of anxiety (STAI trait), worry (PSWQ), and attentional control (ACS). Changes in performance on the CDT, both on the distractor-item and four-item type, were not significantly correlated with changes in self-reported anxiety, worry, or attentional control, all ps > .05. Changes in positivity index on the SST did correlate with changes in anxiety, r = -.37, p = .004, changes in worry, r = -.40, p = .002, and with changes in attentional control, r = .35, p = .006. This shows that a greater increase in

positivity index on the SST was associated with greater decreases in self-reported anxiety and worry, and greater increases in self-reported attentional control.

Breathing Focus Task

Mood breathing period. Mixed ANOVAs were performed on the mood ratings during the breathing periods, with reactivity (pre-worry vs. post-worry) and time (pre-training vs. post-training) as within-subject factors and condition (control vs. WMT vs. CBM-I) as between-subjects factor. For ratings of anxiety, this analysis revealed a main effect of reactivity, $F(1,57) = 40.72$, $p < .001$, $\eta_p{}^2 = .42$, reflecting a general increase in anxiety from pre- to post-worry. Additionally, a main effect of time was observed, $F(1,57) = 32.13$, $p < .001$, $\eta_p{}^2 = .36$, and a Time x Condition interaction, $F(2,57) = 3.85$, $p = .027$, $\eta_p{}^2 = .12$. Bonferroni corrected follow-up paired t-tests, separately per training condition, showed that the CBM-I condition reported a decrease in anxiety from pre-training ($M = 56.88$, $SD = 18.89$) to post-training ($M = 29.55$, $SD = 19.85$), $t(19) = 6.08$, $p < .001$, $d = 1.41$. However, the control condition reported no significant decrease in anxiety from pre-training ($M = 45.75$, $SD = 21.46$) to post-training ($M = 35.68$, $SD = 21.49$), $t(19) = 2.12$, $p = .047$, $d = 0.47$, and neither did the WMT condition report a decrease in anxiety from pre-training ($M = 52.45$, $SD = 19.76$) to post-training ($M = 41.38$, $SD = 20.49$), $t(19) = 2.01$, $p = .059$, $d = 0.55$.

For ratings of depressed feelings, the analysis[1] revealed a main effect of reactivity, $F(1,54) = 25.71$, $p < .001$, $\eta_p{}^2 = .32$, reflecting a general increase in depressed feelings from pre- to post-worry. Additionally, a marginally significant main effect of time was observed, $F(1,54) = 3.51$, $p = .066$, $\eta_p{}^2 = .06$, and a Time x Reactivity interaction, $F(1,54) = 3.02$, $p = .088$, $\eta_p{}^2 = .05$.

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[1] Results are reported after excluding 3 multivariate outliers, one subject from each training condition.

For ratings of happy feelings, the analysis[2] revealed a main effect of reactivity, $F(1,55) = 32.59$, $p < .001$, $\eta_p{}^2 = .37$, a marginally significant Reactivity x Condition interaction, $F(2,55) = 2.94$, $p = .061$, $\eta_p{}^2 = .10$, a marginally significant Time x Condition interaction, $F(2,55) = 3.02$, $p = .057$, $\eta_p{}^2 = .10$, and marginally significant Time x Reactivity x Condition interaction, $F(2,55) = 2.95$, $p = .061$, $\eta_p{}^2 = .10$. However, Bonferroni corrected paired t-tests, separately for each training condition, showed that none of the training conditions reported a significant change in reactivity over time. The CBM-I condition reported no significant change in reactivity of happy feelings from pre-training ($M = -11.50$, $SD = 12.80$) to post-training ($M = -5.65$, $SD = 9.84$), $t(19) = 1.94$, $p = .068$, $d = 0.51$, neither did the control condition show a change in reactivity from pre-training ($M = -5.53$, $SD = 13.33$) to post-training ($M = -1.26$, $SD = 16.39$), $t(18) = 1.05$, $p = .307$, $d = 0.28$, nor did the WMT condition show a change in reactivity from pre-training ($M = -8.00$, $SD = 13.46$) to post-training ($M = -15.00$, $SD = 15.86$), $t(18) = 1.40$, $p = .178$, $d = 0.48$.

Mood worry period. Mixed ANOVAs with time (pre-training vs. post-training) as within-subject factor and condition (control vs. WMT vs. CBM-I) as between-subjects factor were performed on self-reported mood ratings during the worry period. For anxiety ratings this analysis revealed only a significant main effect of time, $F(1,57) = 6.64$, $p = .013$, $\eta_p{}^2 = .10$, reflecting a general decrease. For self-reported depressed and happy feelings during the worry period, these analyses revealed neither a main effect of time, nor a Time x Condition interaction, all ps > .05.

Self-report ratings worry period. Mixed ANOVAs with time (pre-training vs. post-training) as within-subject factor and condition (control vs. WMT vs. CBM-I) as between-subjects factor were performed on self-report ratings of time spent on worrying during the worry period, difficulty to worry during the worry period, and self-reported stress during the

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[2] Results are reported after excluding 2 multivariate outliers (> 2.5SDs), one subject from the control training condition and one from the WMT training condition.

worry period. None of these analyses revealed a main effect of time or a Time x Condition interaction, all ps > .05. However, the analysis on self-report ratings of time spent on worrying during the worry period revealed a near significant main effect of condition, $F(2,57) = 2.98$, $p = .059$, $\eta_p^2 = .10$. Bonferroni corrected independent t-tests revealed no significant differences between the control and WMT condition, $t(38) = 2.11$, $p = .041$, between the control and CBM-I condition, $t(38) = 1.95$, $p = .059$, nor between the WMT and CBM-I condition, $t(38) = 0.42$, $p = .674$.