SUPPORTING ONLINE MATERIALS (Supplementary Tables S1-S5; Figures S1-S3)

RE-TRAINING AUTOMATIC ACTION TENDENCIES CHANGES ALCOHOLIC PATIENTS'

APPROACH BIAS FOR ALCOHOL AND IMPROVES TREATMENT OUTCOME

Reinout W. Wiers[1]

Carolin Eberl[2]

Mike Rinck[3]

Eni S. Becker[3]

Johannes Lindenmeyer[2]

1. Department of Psychology, University of Amsterdam, Amsterdam, The Netherlands.

2. Salus Klinik Lindow, Germany

3. Behavioural Science Institute (BSI), Radboud University Nijmegen, The Netherlands;

Correspondence:

Prof. Dr. R.W. Wiers, University of Amsterdam, Roetersstraat 15, 1018 WB Amsterdam, The

Netherlands.

Tel: +31.20.5256842

Email: R.Wiers@uva.nl

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Supplementary Table S1

Overview of the IAT procedure.

		IAT		
Block	Trials	Function	Left key	Right key
1	24	Target practice	Alcohol	Soft-drink
2	24	Attribute practice	Approach	Avoid
3	16	Combination practice	Alcohol	Soft-drink
4	32	Combination test	Approach Alcohol	Avoid Soft-drink
5	24	Reversed target practice	Approach Soft-drink	Avoid Alcohol
6	16	Reversed combination practice	Soft-drink	Alcohol
7	32	Reversed combination test	Approach Soft-drink	Avoid Alcohol
			Approach	Avoid

Note. Both the side of the keyboard for the categories and the order of the combined blocks were counterbalanced across participants.

Supplementary Table S2

Stimuli IAT

*Approach ("Annäherung") words***:**
Greifen (reach out), nehmen (take), berühren (touch), anfassen (grab), holen (collect), annähern (approach)
Avoidance ("Vermeidung") words:
Vermeiden (avoid), ausweichen (elude), wegschieben (push away), entfernen (remove), flüchten (flee), verschwinden (disappear)
Alcohol ("Alkohol") words:
Bier (beer), Wein (wine), Schnaps (liquor), Wodka (vodka), Whiskey, Rum.
Soft-drink ("Nicht-Alkohol") words:
Cola (coke), Fanta, Orangensaft (orange juice), Apfelsaft (apple juice), Wasser (water), Pepsi.

Supplementary Table S3.

Main Results with alternative scoring algorithms.

AAT: difference in median RT (alcohol-approach) – (alcohol-avoid)	
Main Effect Time	$F(1,171) = 29.5, p < .001, \eta_p^2 = .15$
Main Effect Drink	$F(1,171) = 62.0, p < .001, \eta_p^2 = .27$
Time x Drink x Condition	$F(1,171) = 5.1, p = .025, \eta_p^2 = .03$
Main Effect Trained Stimuli	$F(1,171) = 2.8, p = .09, \eta_p^2 = .016$
Time x Trained Stimuli	$F(1,171) = 2.6, p = .11, \eta_p^2 = .015$
All other effects $F < 2., p > .20, \eta_p^2 < .01$	

IAT: effects with original scoring algorithm logRT (alcohol-approach) – (alcohol-avoid)	
Main Effect Time	$F(1,179) = 22.4, p < .001, \eta_p^2 = .11$
Time x Condition	$F(1,179) = 28.4, p < .001, \eta_p^2 = .14$

Supplementary Table S4

Main Results (effect sizes) for comparison between two experimental groups (E1 = Training with explicit instruction; E2 = Training without explicit instruction); between two control groups C1 = Continued Assessment/ Sham-training; C2 = No training), compared with the difference between the combined Experimental groups vs. the combined control groups, as reported in main paper.

Variable	E1 vs. E2	C1 vs. C2	(E1 + E2) vs. (C1+C2)
Alcohol AAT (D-score) ANOVA, Time X Condition	$\eta_p^2 = .009$ (p = .38)	$\eta_p^2 = .000$ (p = .96)	$\eta_p^2 = .050$ (p = .003)
IAT (D-score) ANOVA, Time X Condition	$\eta_p^2 = .024$ (p = .15)	$\eta_p^2 = .008$ (p = .39)	$\eta_p^2 = .127$ (p < .001)
Craving ANOVA, Time X Condition	$\eta_p^2 = .002$ (p = .65)	$\eta_p^2 = .004$ (p = .53)	$\eta_p^2 = .012$ (p = .13)
Treatment outcome Logistic regression (ITT), predictor condition (model with all covariates)	B = .51 (.43), p = .24	B = .33 (.50), p = .51	B = .76 (.30), p = .011

The only measure where the subgroups differed somewhat was the IAT, there E2 (indirect instruction group) demonstrated a slightly stronger change to alcohol-avoid associations then E1 (direct instruction), although clearly this difference did not reach significance.

Supplementary Table S5

Logistic Regression Results for Patients with known follow-up results (N = 188)

	B	Se (B)	Wald	p
Gender	1.178	.421	7.81	.005
Duration of alcohol problem (years)	-.038	.019	4.05	.045
Number of Detoxifications	-.017	.028	.34	.47
Alcohol problems (AUDIT)	-.048	.022	4.51	.034
Duration of treatment (days)	.012	.010	1.53	.22
Depression (BDI)	-.011	.025	.18	.66
Mental Burden (SCL-90)	.012	.021	.319	.57
Condition (Experimental / Control)	.80	.33	5.89	.015

Supplementary Figure S1 Example of Screen-setup of the IAT

EXAMPLE OF "COMPATIBLE" PHASE ALCOHOL-APPROACH IAT
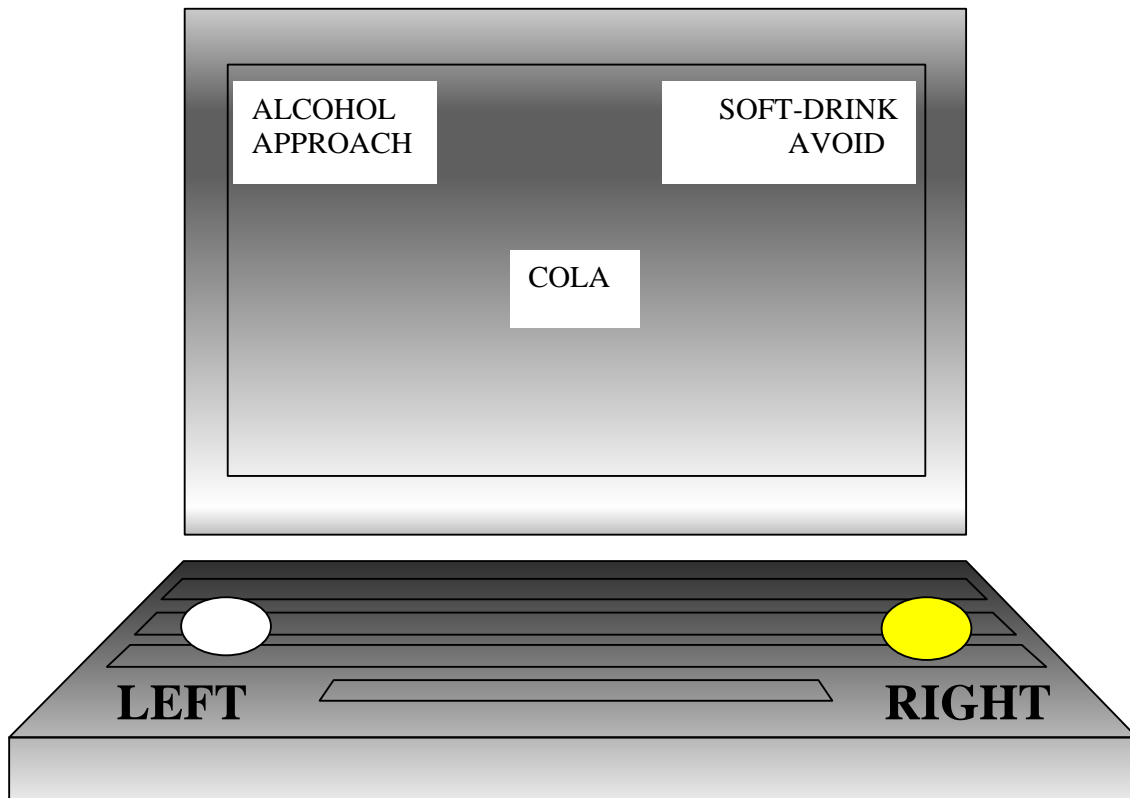
Supplementary Figure S2: Examples of the pictures used in the AAT

Example for pictures of beer. (Landscape, portrait and squared format)
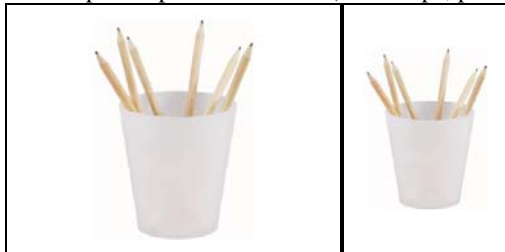

Example for pictures of wine. (Landscape, portrait and squared format)

Example for pictures of hard liquor. (Landscape, portrait and squared format)

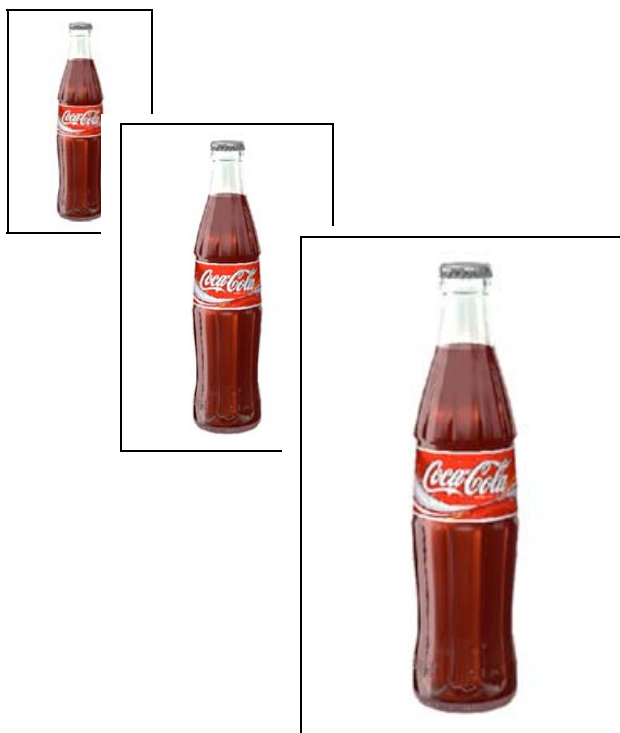Example for pictures of soda. (Landscape, portrait and squared format)

Example for neutral pictures (Landscape and portrait format)

Supplementary Figure S3: Increase and decrease of picture size in the AAT

Decrease of picture size, when pushing the joystick

Increase in picture size, when pulling the joystick