Attentional Re-training: What We Know and What We Have to Do

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Introduction

- Conceptual clarification:
  - Attentional retraining (& attentional bias)

- Overview:
  - Theoretical & methodological aspects
  - Attentional re-training: a meta-analysis
  - Attentional re-training through PsyTech, UBB

Theoretical & methodological aspects

- Attention biases and psychopatology
  - Attention biases in anxiety: Bar-Haim et al., 2007
  - Attention biases in addictive behaviors: Field & Cox, 2008
- Measuring attention biases: main tasks
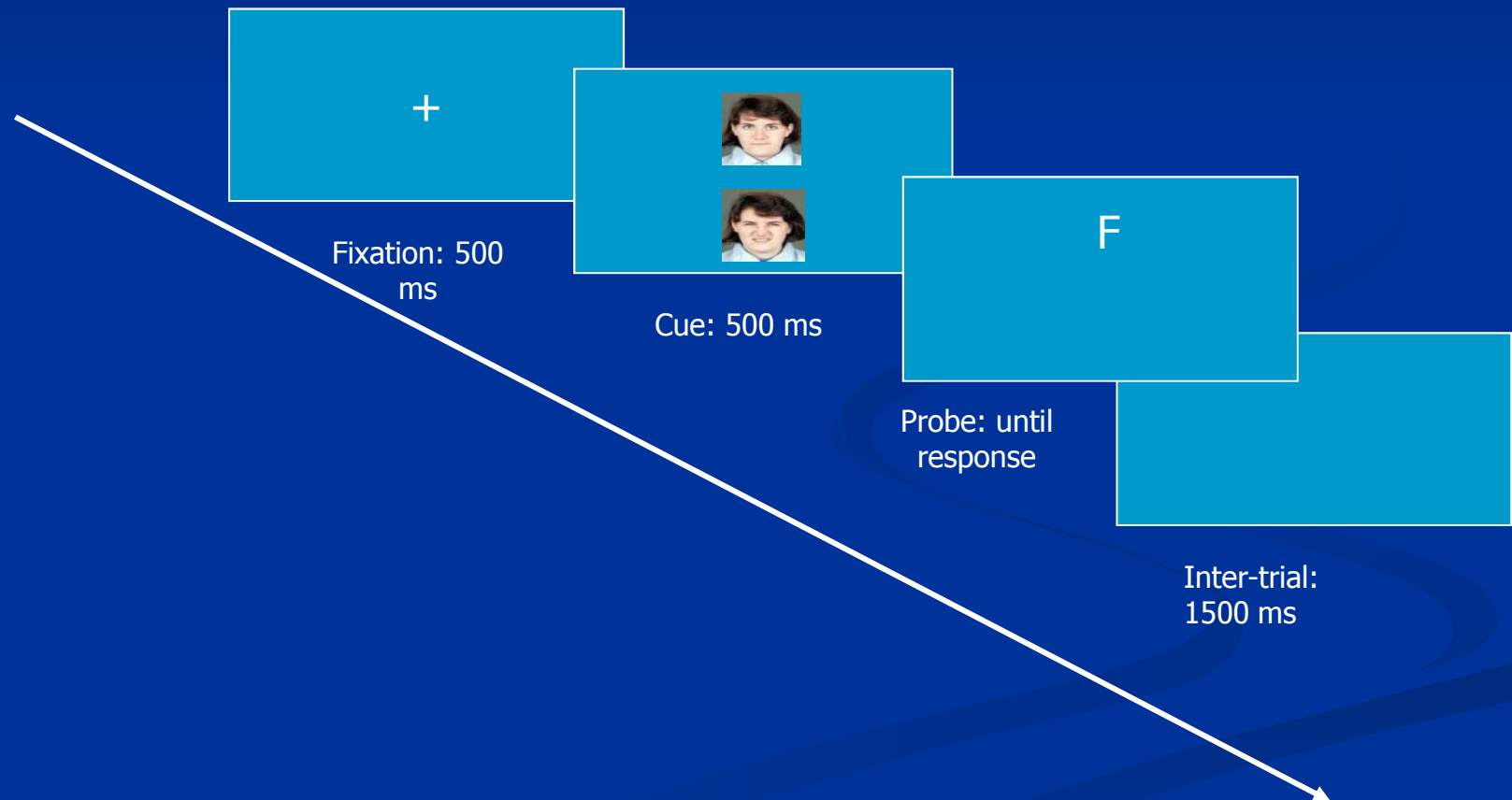 - Emotional Stroop task
  - Dot probe methodology

Dot-probe task
(MacLeod, Mathews, & Tata, 1986)

+

Emotional
stimulus

Neutral
stimulus
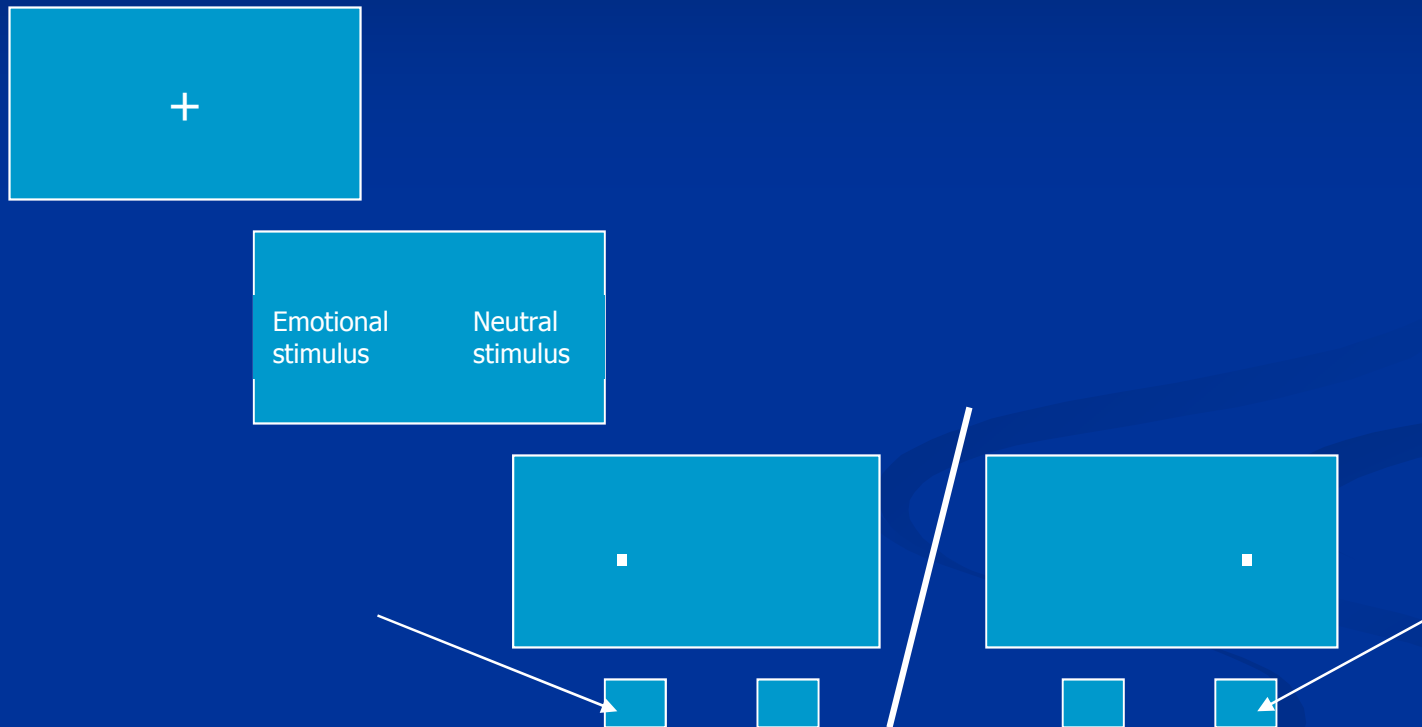
Modified dot-probe task

(MacLeod et al., 2002)

Fixation: 500 ms

Cue: 500 ms

Probe: until response

Inter-trial: 1500 ms

Attentional re-training: a meta-analysis

- Rationale:
  - There is now a substantial literature investigating attentional retraining efficacy in different conditions (anxiety, addictive behaviors, depression)

  - There is no integration of the available data (except for a single theoretical review of attention bias modification in anxiety: Bar-Haim, 2010)

Objectives

- To provide an estimation of average size effect of attentional retraining

- To test possible moderators of the size effect :
  - Sample type (nonclinical, subclinical, clinical)
  - Condition investigated (anxiety, substance abuse etc.)
  - Methodological aspects (number of sessions/trials, stimuli used etc.)

Method

- Search for studies
  - Electronic search
    - Databases: PsychINFO, Medline
    - Key words:
      - attention bias modification
      - attention (re)training,
      - manipulation of attention bias
  - Other information sources:
    - References of identified articles

Method

- Inclusion criteria
  - Procedure tested: ABM using modified dot-probe task
  - Randomized trials, with a control group
  - Primary outcome: the effect of ABM procedure upon a clinical relevant problem (substance abuse, subjective distress etc.)
  - English language
  - Suficient information to compute size effect index

Method   QUOROM diagram

Potentially relevant studies identified and screened for retrieval (n= 1201, duplicates included)

Studies excluded, for irrelevance (n = 1171)

Potentially appropriate studies retrieved for more detailed examination (n = 30)

Studies excluded, for:

• not having a control group (n = 9)

• using another procedure (n = 3)

• not having as primary outcome a clinical relevant problem (n = 1)

• not empirical study (n = 1)

• using simultanously two procedures for attentional training (n = 1)

• not sufficient data to compute effect size index (n = 1)

Studies included in meta-analysis (n = 14)

Method

- Data on the following variables were collected:
    - Study ID (author & year of publication)
    - Sample type (nonclinical, subclinical, clinical)
    - Number of participants per condition
    - Disorder, if appropriate (anxiety, addiction etc)
    - Methodological aspects:
        - Number of sessions (treatment dose)
        - Number of trials per session
        - Stimuli type

Method

- Coding categories for dependent variables:
  - Domain-specific distress (e.g. LSAS, PSWQ)
  - General subjective distress (e.g. STAI, BDI)

- We categorized also the dependent variable as:
  - Self-reported measures (e.g. SPAI)
  - Interview-based (e.g. LSAS, HAM-D) & objective measures (e.g. time to relapse)

Study	Sample	Disorder	N	Number of sessions	Number of trials	Stimuli type	Cohen s d*
Amir et al., 2009a	clinical	General anxiety	29	8	240	words	0.659
Amir et al., 2008	subclinical	Social phobia	94	1	160	pictures	0.288
Amir et al., 2009b	clinical	Social phobia	44	8	160	pictures	0.371
Field et al., 2009	nonclinical	Smoking	48	1	896	pictures	0.187
Field et al., 2007	clinical	Alcoholism	40	1	560	pictures	0.072
Hazen et al., 2009	subclinical	General anxiety	24	5	216	words	0.173
Klumpp & Amir, 2010	subclinical	Social phobia	53	1	160	pictures	0.079
Li et al., 2009	subclinical	Social phobia	24	7	720	pictures	0.172
Najmi & Amir, 2010	subclinical	OCD	52	1	288	words	0.076
Schmidt et al., 2009	clinical	Social phobia	36	8	160	pictures	0.563
Schoenmakers et al., 2007	clinical	Alcoholism	106	1	624	pictures	0.238
Schoenmakers et al., 2010	clinical	Alcoholism	43	5	520	pictures	0.097
See et al., 2009	nonclinical	-	40	15	192	words	0.106
Wells & Beevers, 2010	subclinical	Depression	31	4	196	pictures	0.132

*ds for multiple outcomes were combined within each study to obtain an overall effect

Results - descriptives

- 14 studies, with a total of 664 participants
  - Addiction: 4 studies
    - Alchoolism: 3 studies
    - Smoking: 1 study
  - Anxiety disorders: 9 studies
    - Social anxiety: 5 studies
    - General anxiety: 2 studies
    - Others: 2 studies
  - Dysphoria: 1 study
- 43 effect sizes computed

Results effect size calculation

- Between-groups effect sizes for each study using Cohen's *d*
- Mean overall effect size
  - Analyze unit: Cohen's *d* per outcome measure
  - Model for calculation: Random effects
- Multiple outcomes: Categorized and combined within each domain

Results

- Weighted mean overall effect size: $D = 0.449$ ($S.E. = 0.04$, 95% CI: 0.356-0.542)

- $Qt = 62.21$, significant at $p < 0.05$.

- Continuous moderators: no. of sessions & trials
  - Number of sessions: Beta $= 0.562$, $R^2 = 0.319$, $p < 0.000$
  - Number of trials: Beta $= 0.081$, $R^2 = 0.007$, $p = 0.607$

- No. of sessions as categorical moderator (one vs. multiple sessions)

Study type	Cohen s d	S.E.	95% CI	Qb
One session	0.262	0.064	0.456 – 0.709	12.619*
Multiple sessions	0.582	0.067	0.129 – 0.399	

*Significant at $p < 0.05$

Results　categorical moderators

Moderator		Cohen s d	S.E.	95% CI	Qb
Stimuli type	Words	0.437	0.084	0.271 - 0.603	0.836
	Images	0.428	0.055	0.318 - 0.537	
Measure type	Self-report	0.352	0.060	0.234 - 0.470	5.126*
	Clinician-based	0.549	0.073	0.404 - 0.694	
Distress type	Subjective	0.422	0.078	0.269 - 0.576	1.254
	General	0.420	0.058	0.306 - 0.534	
Disorder	Anxiety	0.461	0.056	0.350 - 0.571	2.126
	Addiction	0.363	0.086	0.195 - 0.530	
Sample type	Clinical	0.474	0.065	0.346 – 0.602	0.576
	Subclinical	0.414	0.078	0.261 – 0.567	

* Significant at p < 0.05

Discussion

- Attentional re-training: what we know
  - The mean effect size is moderate
  - The efficacy of this treatment procedure is strengthened by treatment dose (number of sessions)
  - Measure type moderates the effect, with greater mean of size effect reported for clinician-based measures
  - Disorder type, sample type, number of trials per session or stimuli used does not moderate the effect

Discussion

- These results must be interpreted considering the following limits:
  - Not all effect sizes were computed from means and standard deviations
  - Extremely limited age variability - the majority of participants are students
  - Little variability of the research groups

Discussion

- Attentional Re-Training: what we have to do
  - Find out the mechanisms: How/why does it work?
  - Are its effects durable?
  - What is the optimal treatment dose?
  - How can it be integrated with classic CBT?

  - The results should be replicated (and extended) by independent researchers

Attentional Re-Training through PsyTech, UBB

- www.clinicadepsihologie.ro
- First online delivery of attentional re-training
- First effectiveness study
- Investigates the possible impact of attentional re-training upon cognitive factors (e.g., AT)
- Integrates attentional retraining with classic CBT sessions

INTRODUCERE

Una dintre dezvoltările inovative majore în psihoterapiile cognitive şi comportamentale (CBT) este „Retraining-ul atenţional" („Attentional bias modification"; ABM). Prin exerciţii de asociere derulate pe computer, elaborate după o logică psihoterapeutică, sunt corectate distorsiunile negative automate în prelucrarea informaţiei care generează probleme emoţionale (spre exemplu stări de anxietate). O serie de studii clinice controlate (vezi mai jos pentru o listă orientativă) au arătat că acest tratament este extrem de eficient în diverse tulburări de anxietate.

Clinica Universitară de Psihologie „Babeş-Bolyai – PsyTech" vine în întâmpinarea nevoilor indivizilor care suferă de probleme emoţionale, făcând intervenţia accesibilă online.

Tratamentul specific este integrat în abordarea psihoterapeutică/de consiliere generală. El poate fi aplicat (a) la sediul Clinicii, (b) online, între şedinţele clasice de psihoterapie de la sediul Clinicii sau (c) doar online (mai rar). Paşii care trebuie urmaţi pentru a accesa acest tratament sunt:

- 1) Contactarea **Clinicii Universitare de Psihologie „Babeş-Bolyai – PsyTech"** pentru a fi alocat unui psihoterapeut;

- 2) Crearea unui cont online, facând click pe linkul de mai jos. Dupa ce vă veţi crea cont va urma o evaluare de tip screening (chestionare online). Dupa completarea cu succes al screening-ului, contul dvs. va trebui aprobat de catre un psihoterapeut, iar abia apoi veti putea accesa online tratamentul.

- 3) Accesarea online a tratamentului cu ABM, **de doua ori pe săptămână**, timp de 4 săptămâni, conform recomandărilor psihoterapeutului. Şedinţa va dura maximum 30 de minute din care 15 minute intervenţia propriu zisă, şi 15 minute completarea scalelor, amândouă fiind obligatorii pentru terminarea şedinţei.

- 4) Ţinerea legăturii, pe parcursul tratamentului, cu terapeutul, prin telefon şi/sau e-mail. Ocazional vor fi programate şi întâlniri faţă în faţă.

SIGN-UP
Faceţi click aici dacă doriţi să vă faceţi un cont pentru a beneficia de tratament.

LOGIN
Daca aveţi deja un cont, faceţi click aici.

Găsiţi mai jos principalele studii care arată eficienţa acestui tratament cognitiv-comportamental inovativ; studiile asupra tulburărilor de anxietate sunt marcate cu *

*Amir, N., Beard, C., Burns, M., & Bomyea, J. (2009). Attention modification program in individuals with generalized anxiety disorder. Journal of Abnormal Psychology, 118 (1), 28-33.
*Amir, N., Beard, C., Taylor, C. T., Klumpp, H., Elias, J., Burns, M., & Chen, X. (2009). Attention training in individuals with generalized social phobia: A randomized controlled trial. Journal of Consulting and Clinical Psychology, 77 (5), 961-973.
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Baert, S., De Raedt, R., Schacht, R., & Koster, E. H. W. (2010). Attentional bias training in depression: Therapeutic effects depend on depression severity. Journal of Behavior Therapy and Experimental Psychiatry, 41 (3), 265-274.
Bar-Haim, Y. (2010). Attentional bias modification (ABM): A novel treatment for anxiety disorders. Journal of Child psychology and Psychiatry, 51 (8), 859-870.
*Hayes, S., Hirsch, C., & Mathews, A. (2010). Facilitating a benign attentional bias reduces negative thought intrusions. Journal of Abnormal

Thank you!