

Behavioral and Brain Sciences
Positive appraisal style: the mental immune system?
 --Manuscript Draft--

Manuscript Number:	BBS-D-14-00543
Full Title:	Positive appraisal style: the mental immune system?
Short Title:	Positive appraisal style: the mental immune system?
Article Type:	Commentary Article
Corresponding Author:	Dirk Tom Johnstone Hermans KU Leuven BELGIUM
Corresponding Author Secondary Information:	
Corresponding Author's Institution:	KU Leuven
Corresponding Author's Secondary Institution:	
First Author:	Laura Luyten, PhD
First Author Secondary Information:	
Order of Authors:	Laura Luyten, PhD
	Yannick Boddez, PhD
	Dirk Tom Johnstone Hermans
Order of Authors Secondary Information:	
Abstract:	Instead of converging to one all-embracing resilience mechanism, i.e., positive appraisal style, we encourage complementary research strategies, exploring both vulnerabilities and resilience factors, much like the biomedical sciences combine insights from pathophysiology and immunology. Furthermore, we argue that research with a strong focus on one central resilience mechanism may overlook or undervalue other processes that can aid in maintaining mental health.

Invited Commentary – Behavioral and Brain Sciences

1. Authors of the target article

Raffael Kalisch, Marianne B. Müller, and Oliver Tüscher

2. Word counts

Abstract: 61 words

Main text: 1045 words

References: 491 words

Entire text (total + addresses etc.): 1711 words

3. Title

Positive appraisal style: the mental immune system?

4. Full names

Laura Luyten

Yannick Boddez

Dirk Hermans

5. Institution

KU Leuven

6. Full institutional mailing address

KU Leuven

Psychology of Learning and Experimental Psychopathology

Tiensestraat 102 box 3712

3000 Leuven

Belgium

7. Institutional telephone numbers

+32 16 32 59 63

+32 16 32 60 01

8. Email addresses

laura.luyten@ppw.kuleuven.be

yannick.boddez@ppw.kuleuven.be

dirk.hermans@ppw.kuleuven.be

9. Home page url

ppw.kuleuven.be/clep

Positive appraisal style: the mental immune system?

Laura Luyten*, Yannick Boddez* & Dirk Hermans[§]

KU Leuven Psychology of Learning and Experimental Psychopathology, Tiensestraat 102 box 3712, 3000 Leuven, Belgium

*These authors contributed equally

[§]Corresponding author: dirk.hermans@ppw.kuleuven.be, +32 16 32 59 63

ABSTRACT

Instead of converging to one all-embracing resilience mechanism, i.e., positive appraisal style, we encourage complementary research strategies, exploring both vulnerabilities and resilience factors, much like the biomedical sciences combine insights from pathophysiology and immunology. Furthermore, we argue that research with a strong focus on one central resilience mechanism may overlook or undervalue other processes that can aid in maintaining mental health.

MAIN TEXT

Kalisch, Müller, & Tüscher (2014) break a lance for more resilience-focused research and make the strong claim that positive appraisal style is the single mechanism that can prevent the development of stress-related disorders. We can only applaud a transdiagnostic approach that explicitly combines research on brain and behavior in a well-considered translational framework. However, we have a few comments that may dampen some of the initial enthusiasm about this proposal. Our three main points concern the question whether a focus on resilience will result in the anticipated paradigm shift, some methodological considerations, and the appropriateness of one “all-in” resilience mechanism.

The authors’ description of resilience inspired us to an analogy with human immunology. Resilience is defined as maintaining mental health, despite exposure to stressors, and can be seen as the analogue of actively preserving physical health, despite exposure to pathogens like bacteria or viruses. If we pursue this comparison, positive appraisal style would correspond to the human immune system, since the authors claim that this is the one central resilience mechanism.

Our first main comment pertains to the desirability and de facto impact of radically focusing on resilience. In contrast to the authors' suggestion of a complete shift away from conventional disorder-focused research, we argue that it is important to understand the pathogen's mechanism of action in order to appreciate the immune response. In other words, we are advocates of complementary research strategies, exploring both vulnerabilities and resilience factors.

From a therapeutic point of view, it seems that this hand-in-hand approach may already have been set in motion. Over the past 15 years, several psychotherapeutic methods implicating positive (re)appraisal have been developed, e.g., positive psychotherapy (Seligman, Rashid, & Parks, 2006), well-being therapy (Fava & Tomba, 2009), strengths-based cognitive behavioral therapy (Padesky & Mooney, 2012), and to a certain extent maybe even mindfulness (Segal, Williams, & Teasdale, 2002) (it is noteworthy that the neural correlates of mindfulness and cognitive reappraisal are virtually the same; Opialla et al., 2014). Interestingly, all these treatment strategies are being put forward as helpful adjuncts that should not necessarily stand alone, but may be integrated with other therapies. This indicates that the positive appraisal angle is valuable, but mainly as a complement to the traditional approach.

On top of that, psychopathology and resilience researchers will often (admittedly, not always) be looking at two sides of the same coin. For example, depressive rumination is characterized by an abstract processing style (i.e., thinking about the causes, meanings and implications of an event). In line with this finding, recent studies have found that a concrete processing style (i.e., focusing on the specific perceptual details of an event) counteracts dysphoria (Watkins, Baeyens, & Read, 2009) and depression (Watkins et al., 2012). These examples illustrate that it seems advisable to not completely discard pathology research, but rather to combine it with the proposed resilience approach.

Our second main remark relates to some of the methodological innovations proposed by the authors. First of all, we are not sure if abandoning self-report measures in laboratory settings, and replacing them completely with physiological or behavioral parameters will prove to be a fruitful approach. While physiological measures might have the advantages of being more objective and translatable to animal research, self-report-based measures provide valid information about the subjects' experience, which could be viewed as the ultimate criterion when aiming to improve mental health (Boddez et al., 2013). Moreover, subjective measures might be useful in the investigation of high-level appraisal mechanisms, which appear to have neural correlates that differ from low-level mechanisms (Kalisch, Wiech, Critchley, & Dolan, 2006).

In addition, we would like to scrutinize some of the laboratory procedures that the authors propose as examples of reappraisal. Although we recognize that an extinguished stimulus is ambiguous (Bouton, 2002) and may be subject to appraisal, we would be wary of a priori equating extinction, a procedure in which the subject experiences that the outcome is changed externally, with a situation where the objective value of an event does not change (e.g., the sacked employee does not get his job back). The same holds for the counterconditioning procedures that the authors mention. We do not preclude that extinction or counterconditioning can be framed as reappraisal, but this awaits empirical demonstration, e.g., by showing that extinction performance is affected by manipulation of the well-known appraisal dimensions. Given our consideration about the actual change of stimulus outcome, we suggest that it may be (more) interesting to focus on conditioning procedures in which the threat value of a stimulus is changed in the absence of new direct experience with this stimulus, the so-called retrospective revaluation procedures, e.g., backward blocking (Boddez, Baeyens, Hermans, Van der Oord, & Beckers, 2013).

Our third main point concerns the potential risk of putting all one's eggs in the same positive appraisal basket, and this for at least two reasons. First, even though it may be meaningful to look for general, integrative principles (Meiser, 2011), a priori focusing on only one overarching mechanism, can make researchers lose sight of other important resilience (sub)mechanisms that may prove instrumental in the development of new treatment options. Two promising examples of such (sub)mechanisms are memory and attention. Pilot data suggest that memory specificity training reduces depressive symptoms (Raes, Williams, & Hermans, 2009). Also, positive mood produces a broadening of attention that may play an important role in the resilience against stressful events (Grol, Koster, Bruyneel, & De Raedt, 2014). Kalisch and colleagues can of course claim that these factors have an effect because they converge to positive appraisal, but, in such argumentation, appraisal itself becomes an explanandum, again underlining the importance of other, explanatory, (sub)mechanisms. In this regard, we also fear that broadening the definition of positive appraisal to a point where it includes everything, would render it a useless concept.

Second, we argue that it might sometimes be worthwhile to look for resilience mechanisms that may only protect against specific pathological processes (Rutter, 1993). For example, strong perceptual discrimination abilities may protect against overgeneralization (Lommen & Ehlers, 2014), but not against any pathological process. Or, if we return to our immunology analogy: just like the development of highly specific vaccines has been of vital importance to improve immunity to particular diseases, it may be valuable to not exclusively focus on general protective mechanisms.

ACKNOWLEDGEMENTS

We acknowledge the financial support from KU Leuven Centre for Excellence Grant PF/10/005 to Dirk Hermans and Research Foundation — Flanders (FWO) Research Grant 1504614N to Laura Luyten, who is a postdoctoral fellow of the FWO. Yannick Boddez received additional support from an Interuniversity Attraction Poles grant of the Belgian Science Policy Office (P7/33). We would like to thank Sabine Nelis for helpful comments on an earlier version of this paper.

REFERENCES

- Boddez, Y., Baeyens, F., Hermans, D., Van der Oord, S., & Beckers, T. (2013). Increasing the selectivity of threat through post-training instructions: identifying one stimulus as source of danger reduces the threat value of surrounding stimuli. *Journal of Experimental Psychopathology*, 4(4), 315-324. doi: 10.5127/jep.028512
- Boddez, Y., Baeyens, F., Luyten, L., Vansteenwegen, D., Hermans, D., & Beckers, T. (2013). Rating data are underrated: validity of US expectancy in human fear conditioning. *Journal of Behavior Therapy and Experimental Psychiatry*, 44(2), 201-206. doi: 10.1016/j.jbtep.2012.08.003
- Bouton, M. E. (2002). Context, ambiguity, and unlearning: sources of relapse after behavioral extinction. *Biological Psychiatry*, 52(10), 976-986.
- Fava, G. A., & Tomba, E. (2009). Increasing psychological well-being and resilience by psychotherapeutic methods. *Journal of Personality*, 77(6), 1903-1934. doi: 10.1111/j.1467-6494.2009.00604.x
- Grol, M., Koster, E. H., Bruyneel, L., & De Raedt, R. (2014). Effects of positive mood on attention broadening for self-related information. *Psychological Research*, 78(4), 566-573. doi: 10.1007/s00426-013-0508-6
- Kalisch, R., Müller, M. B., & Tüscher, O. (2014). A conceptual framework for the neurobiological study of resilience. *Behavioral and Brain Sciences*, 1-49. doi: 10.1017/S0140525X1400082X
- Kalisch, R., Wiech, K., Critchley, H. D., & Dolan, R. J. (2006). Levels of appraisal: a medial prefrontal role in high-level appraisal of emotional material. *NeuroImage*, 30(4), 1458-1466. doi: 10.1016/j.neuroimage.2005.11.011
- Lommen, M. J. J., & Ehlers, A. (2014). New interventions for fear generalisation. Paper presented at the 6th European Meeting on Human Fear Conditioning, Affligem, Belgium.
- Meiser, T. (2011). Much pain, little gain? Paradigm-specific models and methods in experimental psychology. *Perspectives on Psychological Science*, 6(2), 183-191. doi: 10.1177/1745691611400241
- Opialla, S., Lutz, J., Scherpiet, S., Hittmeyer, A., Jäncke, L., Rufer, M., . . . Brühl, A. B. (2014). Neural circuits of emotion regulation: a comparison of mindfulness-based and cognitive reappraisal strategies. *European Archives of Psychiatry and Clinical Neuroscience*. doi: 10.1007/s00406-014-0510-z
- Padesky, C. A., & Mooney, K. A. (2012). Strengths-based cognitive-behavioural therapy: a four-step model to build resilience. *Clinical Psychology & Psychotherapy*, 19(4), 283-290. doi: 10.1002/cpp.1795
- Raes, F., Williams, J. M., & Hermans, D. (2009). Reducing cognitive vulnerability to depression: a preliminary investigation of MEmory Specificity Training (MEST) in inpatients with depressive symptomatology. *Journal of Behavior Therapy and Experimental Psychiatry*, 40(1), 24-38. doi: 10.1016/j.jbtep.2008.03.001
- Rutter, M. (1993). Resilience: some conceptual considerations. *Journal of Adolescent Health*, 14(8), 626-631, 690-626.
- Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: a new approach to preventing relapse*. New York ; London: Guilford Press.
- Seligman, M. E., Rashid, T., & Parks, A. C. (2006). Positive psychotherapy. *American Psychologist*, 61(8), 774-788. doi: 10.1037/0003-066X.61.8.774
- Watkins, E. R., Baeyens, C. B., & Read, R. (2009). Concreteness training reduces dysphoria: proof-of-principle for repeated cognitive bias modification in depression. *Journal of Abnormal Psychology*, 118(1), 55-64. doi: 10.1037/a0013642
- Watkins, E. R., Taylor, R. S., Byng, R., Baeyens, C., Read, R., Pearson, K., & Watson, L. (2012). Guided self-help concreteness training as an intervention for major depression in primary care: a phase II randomized controlled trial. *Psychological Medicine*, 42(7), 1359-1371. doi: 10.1017/S0033291711002480