DynaMORE

Dynamic MOdelling of REsilience

H2020 - 777084

D3.2 - Paper on optimised resilience factor solution, already validated against observational data (identified and tested key resilience factors)

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Author list

Organisation	Name	Contact information
LIR	**Prof. Dr. Raffael Kalisch**	**rkalisch@uni-mainz.de**

Executive Summary

Appraisal refers to the evaluation of stimuli or situations with respect to an individual's goals and needs. Stimuli or situations that are appraised as a threat to one' goals and needs ('stressors') induce stress responses ('stress'). Stressor appraisal occurs on various dimensions, of which the magnitude or cost of a potential adverse outcome, the probability of the outcome, and an individual's coping potential are the most important. Individuals show subjective biases on each of these dimensions, which can range from extremely unrealistically negative to extremely unrealistically positive. Positive appraisal style (PAS) is an integrative construct. Individuals with a PAS have an average tendency to appraise stressors in a realistic to mildly unrealistically positive fashion across the different stressor appraisal dimensions; hence, they typically avoid both negative and also delusionally positive appraisals. Positive appraisal style theory of resilience (PASTOR) posits that this global bias is key for stress resilience, as it enables individuals to generate stress responses when needed but also to avoid unnecessary and over-shooting stress responses that will exhaust one's resources and prevent resource replenishment during times of severe or lasting stressor exposure. We here use data from three prospective-longitudinal studies to compare recently validated self-report instruments for PAS with existing measures of appraisal biases in single dimensions in their relative predictive potential for resilience, using regularized regression methodology. We find that one PAS instrument, reflecting a tendency to produce general positive appraisal contents (PASS-content), and an optimism instrument, supposed to reflect a positive appraisal bias on the probability dimension, are consistent predictors of resilience over long time frames and superior in this quality to the other instruments (measures of positive appraisal processes, self-efficacy, and control). Generally, our results confirm the important role of appraisal biases in resilience. Item and nomological network analyses further indicate that the PASS-content instrument may more closely reflect individual differences in appraisal than the optimism instrument and thus be well suited for mechanistically interpretable prediction models based on well-defined psychological constructs. By contrast, the optimism instrument may reflect differences in life perspectives in addition to differences in appraisal. This makes the instrument less mechanistically interpretable; however, it may be better suited for clinical prediction models aiming at individual-level prognosis on the basis of maximized explained variance.

1. Deliverable report

This deliverable reports on the efforts of the DynaMORE consortium to model resilience, by identifying key factors predictive for resilience outcomes, optimizing the resilience factor solution, and validating the obtained resilience factor solution against observational data. During this work, the consortium has collaborated with the EU Horizon 2020 project RESPOND (grant nr. 101016127).

The resulting manuscript is attached to this report:
Petri-Romao_etal_PAS_ComparativeAnalysis_ResilienceModeling.

The manuscript has been made public at:

https://osf.io/preprints/psyarxiv/58ft9

2. Conclusion

We identify two factors (positive appraisal style and optimism) as key ingredients of predictive resilience modeling, positive appraisal style being more relevant for mechanistically interpretable models and optimism for clinical decision-making models. These insights are used in further work of DynaMORE to work on model validation against interventional data (see Deliverable D3.3).