

## 100 (and more) years of psychopathology research: Current views and promising developments

We are most happy to introduce this special issue on psychopathology. Our main aim is to provide readers with a collection of papers that highlights important developments in research on psychopathology. A core promise of psychopathology research is that it may provide theory-derived leads to improve clinical interventions. Indeed, the ultimate goal of most scientists in the field of psychopathology is to reduce psychological suffering. Yet, although many helpful interventions have been developed and implemented over the years, the overall success rate of interventions for mental disorders is still very modest (e.g., Holmes et al., 2014), and common disorders such as depression often run a chronic course (e.g., Solis et al., 2021). Needless to say, there may be potential in improving our insight in the processes that are crucial in the development and persistence of psychological suffering as a key to advance more effective treatments and achieve (more) sustained clinical improvement. We hope that this special issue contributes to this ultimate aim by putting the spotlights on a series of important current theories and methodological developments.

Selecting the landmark papers on the topic of psychopathology would be a daunting task, but there is little doubt that many would argue that the Watson and Rayner (1920) paper about the Little Albert study should be one of them. This paper and the ensuing research line perfectly illustrates the three main goals of research on psychopathology: understanding, predicting, and influencing. Indeed, Watson and Rayner (1920) did not only develop an *understanding* or specific theory of fear, but were also able to successfully *predict* the circumstances under which fear would arise. On top of that, they were able to *influence* fear levels: they did not only manage to make fear appear in Little Albert, but also to reduce fear levels by means of exposure and counterconditioning (Jones, 1924a and 1924b).

It has been 100 years since this landmark study was published and the diverse set of papers in this special issue give an idea of the different ways in which our understanding, ability to predict and means of influencing psychological suffering have evolved since then, and provide some perspectives on important remaining challenges that need to be followed up by future research. Below, we highlight the articles in this special issue according to their focus on either understanding (theory), predicting, or influencing.

### 1 Understanding: towards better theory

Several contributions focus on theoretical developments and improving theoretical models of the processes that drive the development and persistence of dysfunctional behaviour and mental complaints. In some of these contributions, broad theories about human behavior are applied to a broad range of psychological complaints. Van de Cruys and Van Dessel start from predictive processing theory, Mansell starts from perceptual control theory, and Moors and Boddez start from a goal-directed processing theory to shed light on critical mechanisms involved in various forms of psychological suffering. In other contributions, general theoretical principles are put to use to provide a detailed analysis of specific forms of psychological suffering. Glashouwer and de Jong show how emotion theories and findings about disgust may shed light on the key processes involved in food avoidance in individuals with anorexia nervosa, while Boddez et al. illustrate how stimulus generalization principles can account for the development of fearful behavior. In the same line, Everaert highlights how interpretation of ambiguous information may account for depressive complaints. Finally, two other contributions invoke specific causal mechanisms (rather than general theoretical principles) to shed light on a broad range of complaints. Ratner and Burrow focus on the explanatory power of a new construct termed “derailment”, while Lancel et al. discuss how insomnia can be a core causal agent involved in both the development and persistence of various psychopathologies.

For long, theory and clinical practice have been dominated by the view that mental disorders essentially reflect genetically determined brain diseases (e.g., Bentall, 2009). This view – which is still commonplace in clinical practice where the medical model dominates diagnostic manuals – conceptualizes psychopathology as deficits of individual people thereby ignoring the importance of environmental factors in constituting and shaping people’s psychological suffering. An interesting observation is that several theoretical contributions in this special issue move away from considering mental disorders as a mere problem of the individual. Instead, in several papers psychological complaints are interpreted as (overt or covert) behavior that can only be understood by analyzing the context in which it occurs. For example, Hopwood et al. invoke the interpersonal context as critical to explain (and modify) the occurrence of psychological suffering. Vanaken et al., on their turn, offer an analysis of how memories (e.g., intrusion) can be conceptualized as covert behavioral responses that are controlled by contextual variables. In a way, this is a return to the approach of Watson and colleagues who also relied on context to explain (and manipulate) the complaints of Little Albert (Watson and Rayner, 1920). Implications of this renewed focus on context are not only theoretical – it invokes abnormal contexts instead of abnormal individuals – but also include a need for new measurement methods that are tailored to take contextual factors into consideration.

## 2 Predicting: towards better (and personalized) measurement

As mentioned above, an important goal of science in general and of psychopathology research specifically is prediction. To examine the predictive or prognostic value of particular measures for the presence, development, persistence, or recurrence of psychological suffering, we need both high quality prediction measures and high quality outcome measures. Several papers in the special issue focus on this important matter and advocate an approach in which the individual (rather than group averages) is at the forefront. In one of these contributions

Mestdagh and Dejonckheere critically discuss the added value of real-time (ambulatory) assessment methods and highlight the relevance of these methods to unravel the dynamic signature of individuals' symptoms and emotions over time and in their own personal ecology. Helmich et al. describe a pathway to the identification and proper measurement of “early warning signals” that allow for personalized predictions of increases in levels of psychological suffering, and highlight the promise of assessing early warning systems as a clinical tool that allows to intervene before symptom escalation. Relatedly, Strauman explores the utility of combining a dynamical systems perspective with a self-regulation perspective to model and predict the onset of depressive episodes. Finally, Bringmann provides a critical evaluation of the current possibilities and limitations of the assessment and statistical modelling of person-specific symptom networks.

Together these developments in optimizing (real-time) personal assessment procedures and (statistical) modeling of person specific responses and interactions not only help improve our insight in the processes involved in psychological suffering but also signify a shift away from thinking in terms of categorically defined syndromes and interpreting complaints as mere signs of an underlying (brain) disorder. Instead the developments discussed in these contributions highlight the importance of causal relations between complaints (e.g., from insomnia to concentration problems) thereby pointing to novel ways of conceptualizing mental disorders (e.g., Borsboom & Cramer, 2013) and fruitful ways to improve treatment effectiveness via personalized interventions.

### 3 Influencing: towards better treatment

On top of understanding and predicting, scientists also aim to influence phenomena of interest. In the context of psychopathology research, this is an exceptionally important goal as being able to influence psychopathology means being able alleviate psychological suffering. As an exemplary showcase of how understanding and influencing can be linked, Barry et al.

provide a review of Memory Specificity training, an intervention developed from basic science that has found clinical utility with respect to the treatment of depression. Cornelissen and Tovée shift the focus from depression to eating disorders and discuss a novel theory-derived cognitive bias modification intervention to recalibrate the categorical boundary at which bodies are judged as overweight, which showed promising effect on body image concerns and patients' more general psychological profile.

Two more contributions illustrate how technological breakthroughs can further advance treatment. Geraets et al. discuss advances in virtual reality (VR) based treatments and further steps that are needed for VR to realize its potential to make treatments more (cost-)effective and to make them available to a larger group of people. Van Dale et al. zoom out and make a similar case for not only VR, but for the use of technology in mental healthcare in general.

#### 4 Bringing it all together

Finally, two contributions provide a meta perspective on psychopathology research and discuss the link between the scientific goals of *understanding*, *predicting* and *influencing*. De Houwer discusses challenges for the “true” understanding and for the measurement of cognitive processes that are proposed to be involved in psychological suffering. He pleads for a pragmatic stance and emphasizes that what matters is not if a theory about psychopathological phenomena is “correct” (in an ontological sense) but whether a theory is useful in terms of the ultimate aim of reducing psychological suffering. He therefore points to the importance of regular reality checks to assess whether research practices that aim to improve our understanding of psychopathology actually ameliorate treatment and to revert to other research practices where necessary. Although his contribution focusses on “cognitive” psychopathology, his arguments also apply to psychopathology research in general. Lange et al., on their turn, consider the relevance of the Research Domain Criteria (RDoC) for guiding

research. RDoC is an approach that retained the physical reductionism of the (still) prevailing medical model of psychopathology but moved to a more dimensional instead of strictly categorical take on mental disorders. In their contribution they make a detailed comparison between RdoC and Experimental Psychopathology (EPP). EPP and RDoC both provide a framework to study psychological suffering at the intersection of fundamental and applied research. Their comparison highlights ways to boost psychopathology research by combining the strengths of these two approaches.

We hope that this introduction provides a helpful contextualization of the invited contributions and is helpful in illustrating the immanent connection across the covered themes that runs from understanding via prediction to influencing. Together, the articles of this issue provide a timely overview of current research with regard to each of the core goals of psychopathology research that hopefully not only facilitates getting a quick overview of important developments in the domain of psychopathology but also inspires future research to contribute to the ultimate aim of reducing psychological suffering. We wish you a pleasant read!

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