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## VIEWPOINT

# Reification of the *P* Factor Draws Attention Away From External Causes of Psychopathology

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Summarizing specific psychopathology symptoms into higher order factors has a long tradition in mental health science (e.g., externalizing vs. internalizing problems; Achenbach, 1966). More recently, the general psychopathology factor (*p* factor) has gained much interest and currently reflects the highest level of the psychopathology hierarchy. The *p* factor is modeled from covariance of transdiagnostic psychopathology symptoms. Because such covariance is robust (persons who score higher on symptom X compared to others also tend to score higher on symptom Y), there have been many factor-analytic studies that claim the discovery of—and/or empirical support for—a general psychopathology factor.

A common interpretation of the *p* factor is that it reflects “a person’s liability to mental disorder” (Caspi & Moffitt, 2018, p. 831), that is, it acts as a common cause residing in a person that induces vulnerability to all sorts of mental health problems, explaining symptom covariance. In this viewpoint, we express our concerns about this interpretation of the *p* factor, the most important being that the *p*-factor literature tends to reify *p* as a person-internal causal latent entity (see also Watts et al., 2024). As a result, all attention is being put on causal factors within the person, neglecting common causes in the environment.


Reification is “the act of changing something abstract (=existing as a thought or idea) into something real.”<sup>1</sup> Readers may be familiar with reification in debates about *Diagnostic and Statistical Manual of Mental Disorders* classifications, which are descriptive in nature but often used causally in scientific papers as well as everyday

language (e.g., when we say a person’s attention-deficit hyperactivity disorder makes them hyperactive instead of saying that their hyperactivity is classified as attention-deficit hyperactivity disorder). In the case of the *p* factor, a similar reification happens when *p* (a statistical description) is taken to reflect an underlying common cause that induces vulnerability to psychopathology.<sup>2</sup> In other words, *p* then becomes a thing that a person has and that can influence symptoms (cf., Caspi & Moffitt, 2018), instead of simply a summary index of psychopathology severity (Fried et al., 2021).

A typical consequence of reification in the domain of psychopathology is that it decontextualizes mental health and puts the causal explanation of problems within the person (e.g., te Meerman et al., 2022). Indeed, almost all hypotheses that have been put forward as to what the common cause behind the *p* factor is are person-internal. A recent review identified intellectual functioning, disordered thought, negative emotionality, emotion dysregulation, and unspecified (individual) mechanisms, including genetic variation (Watts et al., 2024). However, common causes for transdiagnostic symptom load (and therefore *p*) do not need to reside within individuals. Symptoms can also hang together because of common causes in the environment, outside of a person, such as poverty, structural discrimination, and victimization (Kirkbride et al., 2024). For example, parents of families living in intergenerational poverty will score high on symptom criteria such as worry (about their finances), anxiety (about their children’s future), feelings of reproach (about the chances they can offer their children), and so on, all primarily caused by their circumstances.

The focus on internal causes in the *p*-factor literature has led to overlooking such external causes for high symptom load. This is a missed scientific opportunity, as such factors may (partly) explain prominent findings in the *p*-factor literature. First, a key finding in the *p*-factor literature is that high symptom load (high *p*) appears to be relatively stable over the life course and that it is associated with a family history of psychopathology indicators. Instead of providing evidence that *p* is a person-internal trait-like entity (cf. Caspi & Moffitt, 2018), these findings could also be explained by structural environmental factors such as intergenerational poverty or structural discrimination, which keep causing symptoms throughout the life

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<sup>1</sup> Definition from Cambridge dictionary, <https://dictionary.cambridge.org/dictionary/english/reification> (August 26, 2024).

<sup>2</sup> Notably, as part of the practice of factor analysis is to interpret factors as potential common causes (even in the absence of substantive theory), we believe that all factor-analytic research is at risk of reifying latent variables.

course and over generations. In a study on criterion validity of  $p$ , Forbes et al. (2021) find some first evidence for this idea as  $p$  appeared to be associated with being unemployed, in poor physical health, or having experienced a financial crisis in the last year. A second prominent finding in the  $p$ -factor literature is the relation between  $p$  and academic performance (e.g., Lahey et al., 2015). This relation may also be explained by environmental common causes: when there is bullying at school, high social pressure to perform, or poverty, this may lead to both high symptom load and poorer academic performance. Indeed, we argue that if there actually are common causes underlying  $p$ , they may be found in the environment instead of within the person.

Considering external causes also has implications for communicating  $p$ -factor research to patients, clinicians, policymakers, and society at large. The causes for a high score on  $p$  do not need to reside within the person, and communicating  $p$  as a person-internal vulnerability can be stigmatizing and harmful as understanding oneself as a chronically vulnerable person, irrespective of context, may induce feelings of hopelessness. In the worst case, a person-internal perspective on  $p$  may even hide issues of social injustice from sight in both research and practice. This is also clinically relevant, as structural adverse life circumstances beg for societal interventions and not (only) medical or psychological ones (Kirkbride et al., 2024).

Notably, we do not propose that psychopathology symptoms arise only from external causes and that these would be the same for everyone. Recent theoretical developments in psychopathology, such as enactive psychiatry (de Haan, 2020) and complex systems approaches (Olthof et al., 2023), point to a dynamic interplay of biological, psychological, and sociocultural processes as the organizational causality (de Haan, 2020) that constitutes mental health. This interplay differs across people and hence there are many possible ways by which one can get overall high symptom load. While these approaches attach no causal priority to specific levels (because the levels are formally inseparable), they do emphasize that the biological and psychological levels are always embedded in a sociocultural environment, which constrains a person's mental health. And in many cases, the sociocultural environment will contain strong predictors or causes of mental health problems, such as intergenerational poverty (Kirkbride et al., 2024).

To conclude, the reification of the  $p$  factor has put person-internal common causes of psychopathology high on the research agenda, while person-external common causes are overlooked. We argue that person-external causes are not only important and highly relevant for the  $p$ -factor literature—they may also make for better prevention and intervention targets. We should not mistake descriptive heuristics of data (such as the  $p$  factor and other higher order factors) for underlying person-internal explanations and be wary of the

consequences that such a reification can have. When considering the actual causes of transdiagnostic symptom load we should also consider person-external ones.

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