

# Using LLM-powered chatbot as an administrative modality in Psychological assessment

Diego Figueiras and Blanca Zutano  
Ana and Blanca's University

We create a chatbot for purposes of Psychological assessment and contrast responses with traditional inventory responses. Large language model powers the chatbot – how do we train? We aim for an optimal-point estimate with the chatbot using the metaphor of a computerized adaptive test. Questions are tailored to respondent trait-level. These scores are compared against scores from traditional measures. Criterion associations are [better/similar/worse]

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## Borsboom philosophy (Grok 5/14/25)

Network psychometrics, as shaped by Denny Borsboom, is grounded in a philosophical shift from traditional psychometric models, emphasizing a network perspective on psychological phenomena. This approach draws from causal realism, complex systems theory, and a rejection of latent variable models as the sole explanatory framework. Below are the key philosophical underpinnings:

- **Causal Realism:** Borsboom advocates for understanding psychological constructs (e.g., depression, intelligence) as networks of interacting components (e.g., symptoms, behaviors) rather than as reflections of a single latent variable. Symptoms like sadness or fatigue in depression are not mere indicators of an underlying cause but are causally connected, influencing each other directly (e.g., sadness → sleep problems → fatigue). This aligns with a realist ontology where the network itself is the phenomenon, not a proxy for something unobservable.
- **Rejection of Latent Variable Dogma:** Traditional psychometrics often assumes latent variables (e.g., a “depression” factor) cause observed behaviors. Borsboom challenges this, arguing that latent variables are often statistical conveniences, not necessarily real entities. Network psychometrics treats psychological constructs as emergent properties of dynamic, reciprocal interactions among observable variables, sidestepping the need for latent causes unless empirically justified.
- **Complex Systems Perspective:** Inspired by systems theory, Borsboom views psychological phenomena as complex, self-organizing systems. Networks exhibit properties like feedback loops, tipping points, and hysteresis (e.g., a person may remain depressed even after an initial trigger subsides due to self-reinforcing symptom networks). This perspective emphasizes dynamics over static measurement, aligning with a process-based ontology.
- **Mutualism and Emergent Phenomena:** Borrowing from biological and ecological models, Borsboom’s mutualism suggests that psychological traits emerge from mutual interactions among lower-level components (e.g., cognitive abilities reinforcing each other). This contrasts with the idea of a single, top-down cause, emphasizing a bottom-up, interactive process where the whole (the construct) arises from the parts (the network).
- **Pragmatic Epistemology:** Network psychometrics prioritizes empirical utility and predictive power over rigid adherence to traditional models. Borsboom emphasizes that models should be judged by their ability to explain and predict real-world data, encouraging iterative refinement of network models based on empirical findings rather than dogmatic assumptions about latent structures.
- **Interdisciplinary Influence:** The approach integrates insights from graph theory, statistical mechanics, and philosophy of science (e.g., rejecting reification of statistical constructs). It reflects a broader anti-reductionist stance, acknowledging that psychological phenomena are multiply determined and context-dependent, resisting oversimplified causal stories.

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Correspondence concerning this article should be addressed to Diego Figueiras, Ana and Blanca's University, 1234 Capital St., Albany, NY, USA, Email: [sm@example.org](mailto:sm@example.org)

In summary, Borsboom’s network psychometrics is philosophically rooted in a causal, dynamic, and emergent view

of psychological phenomena, prioritizing observable interactions over latent abstractions. It embraces complexity, rejects reification of statistical constructs, and aligns with a realist yet pragmatic approach to understanding the mind. For a deeper

dive, Borsboom's seminal works, like *A Network Theory of Mental Disorders* (2017), articulate these ideas with empirical applications.