The Logic and Psychology of Psychotherapeutic Assessment

Paul Thagard and Laurette Larocque

Outline

1. Assessment
2. Pattern recognition
3. Causal reasoning
4. Explanatory coherence
5. Pragmatics
6. (Errors)

Assessment

1. **Assessors:** psychiatrists, clinical psychologists, psychotherapists, family physicians
2. **Problems**: depression, anxiety, stress, social problems, psychosis, etc.
3. **Goals**: identify problem and plan treatment

Open Questions

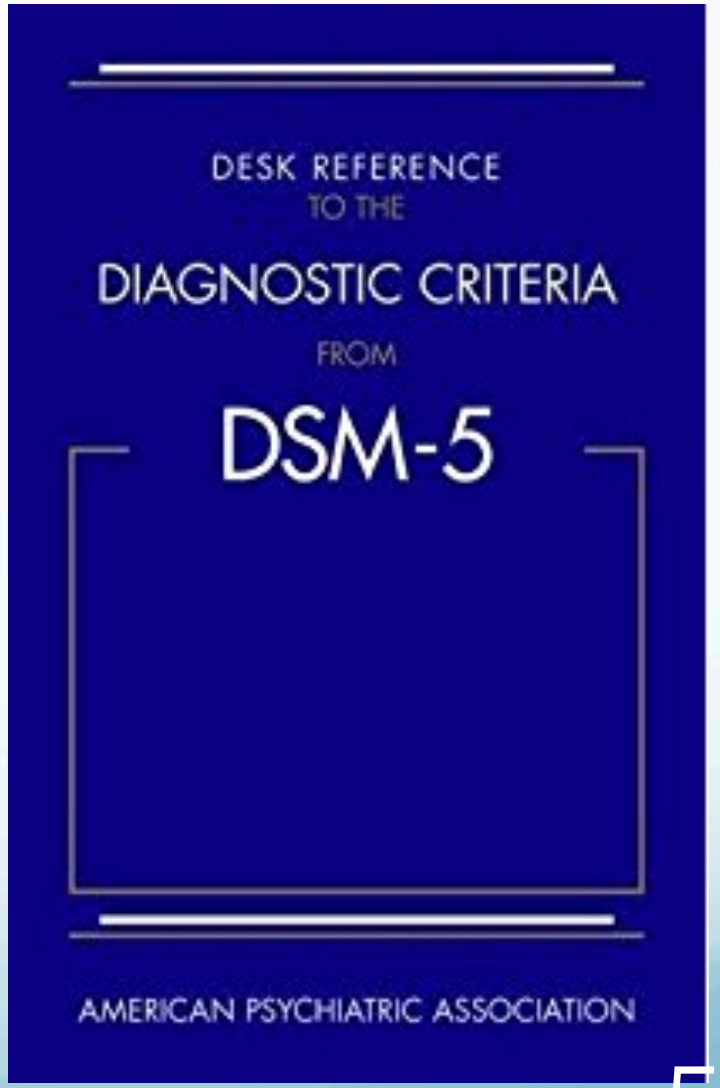
1. How do psychotherapists identify problems?
2. Is assessment the same as medical diagnosis?
3. What cognitive processes drive assessment?
4. How does assessment link with treatment?
5. What cognitive/affective errors arise?

Pattern Recognition

Mental disorders present with symptoms that can be listed.

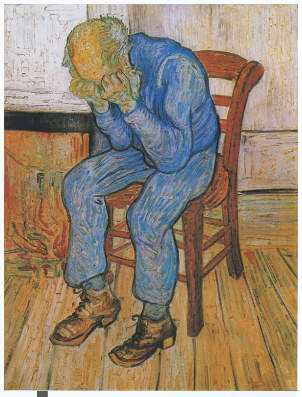
Match symptoms to the list.

The patient has the disorder that best matches the lists.



Example: Depression (5 of 9)

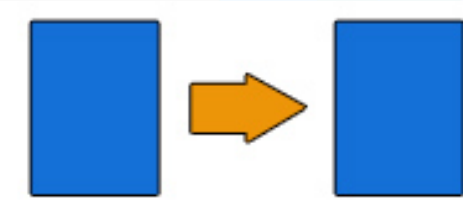
1. Depressed mood most of the day
2. Markedly diminished interest or pleasure
3. Significant weight loss or gain
4. Insomnia or hypersomnia
5. Psychomotor agitation or retardation
6. Fatigue or loss of energy nearly every day
7. Feelings of worthlessness or guilt
8. Diminished ability to think or concentrate
9. Recurrent thoughts of death or suicide



Problems with Matching

1. Patterns encourage mere counting rather than assessment of importance.
2. Disorders overlap a lot, and people combine
3. Disorders lack causal underpinnings (compare germ theory of disease, NIMH).
4. Identifying symptoms provides minimal clues to deep therapy, as opposed to quick (but sometimes effective) ones like cognitive-behavioral therapy.

Causal Patterns



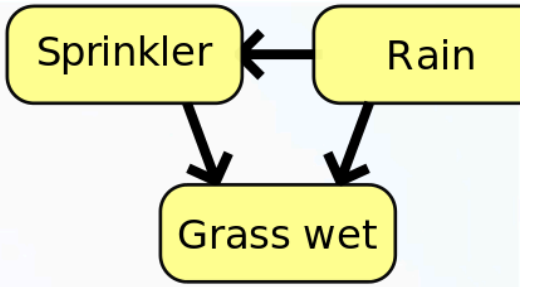
Stressors: economic, occupational, family, educational

Triggers: precipitating events

Symptoms: current manifestation

Stressors + triggers ⇒ symptoms

Treatment: intervene causally

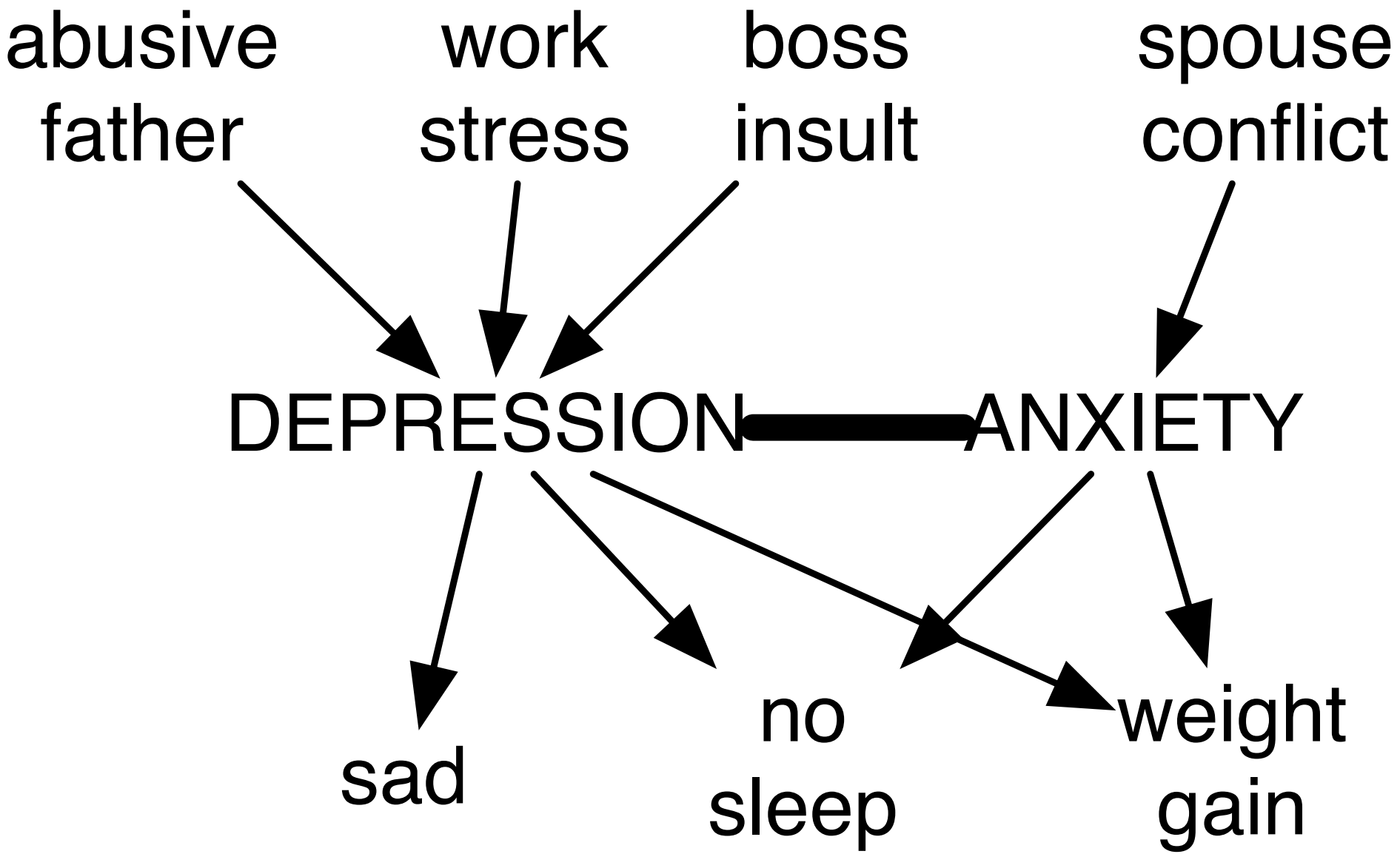


Why not Bayesian?

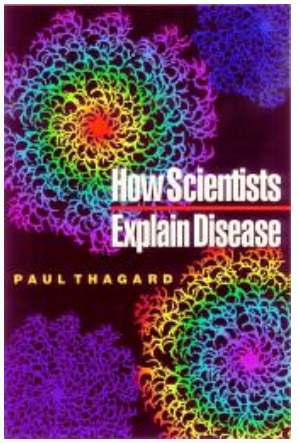
1. Probabilities are largely unknown.
2. Interpretation of probability is problematic.
3. Probabilistic thinking is psychologically difficult. Need to explain errors.
4. Bayesian methods ignore other relevant psychological processes, e.g. analogy, empathy, treatment intentions.
5. Technical difficulties: large networks, feedback loops.

Explanatory Coherence

1. Morrison: the best diagnosis most satisfactorily explains the data, signs, and symptoms of illness.
2. Inference to the best explanation requires layers of causes, e.g. motives -> actions -> clues.
3. Layers of causes and alternative explanations are efficiently computed by maximizing explanatory coherence: Thagard 1992, 2000, 2009, 2012.


abusive father
work stress
boss insult
spouse conflict
DEPRESSION
ANXIETY
sad
no sleep
weight gain

Constraint Satisfaction



1. Positive constraints: hypotheses explain evidence.
2. Data priority: evidence based on observation and experiment are better. (Not perfect: patients may lie – also a coherence problem).
3. Negative constraints: incompatible hypotheses.
4. Maximize coherence by neural and other algorithms.

Pragmatic Enhancement

The aim of assessment is not just truth and explanation, but patient benefit.

Psychotherapists need to deal from the start with treatability issues.

Treatment prospects focusses information gathering about symptoms, stressors, and triggers.

Treatment serves to test hypotheses about disorders.

Error Tendencies

Motivated inference: bias diagnosis and treatment by personal goals.

Fear-driven inference: bias diagnosis and treatment by fear of worst-case scenario.

Confirmation bias: stick with first hypothesis.

False cause: post hoc ergo propter hoc.

Availability and stereotyping.

Conclusions

1. Psychotherapeutic assessment is based on explanatory coherence.
2. Assessment interacts with treatment.
3. Psychotherapists are subject to cognitive and emotional biases.