Diagnostic Formulation

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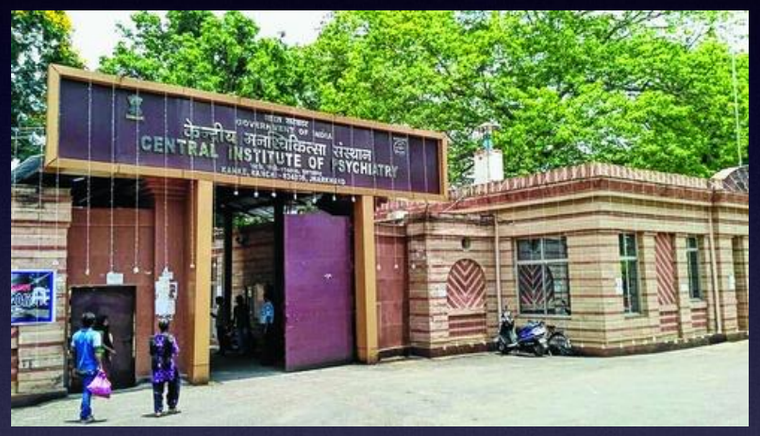
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CENTRAL INSTITUTE OF PSYCHIATRY

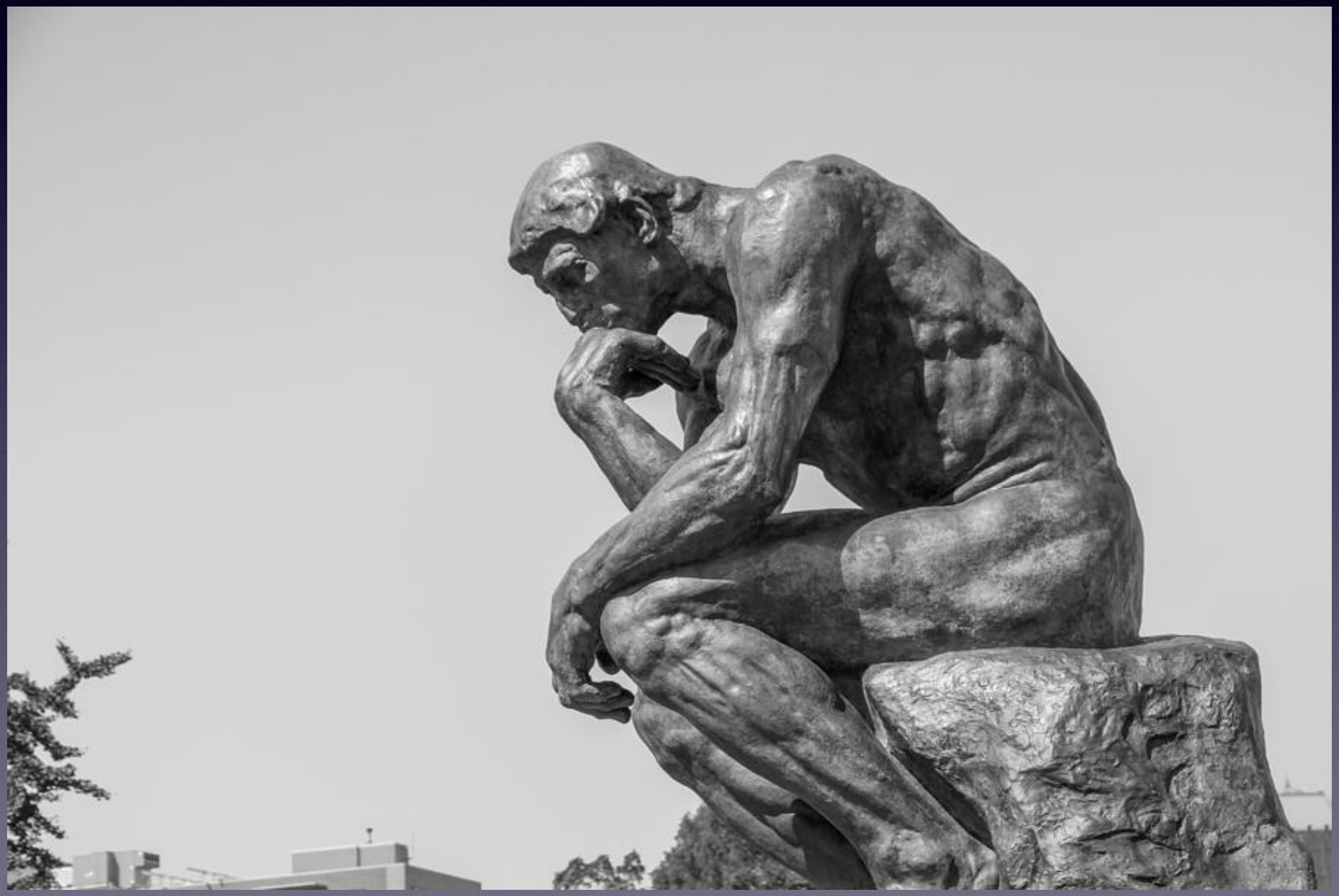

EMERGENCY


SRI RAMACHANDRA MEDICAL CENTRE

Outline of the presentation

- **Introduction**
- Understanding diagnostic formulation
- Bio-psycho-social model of illness
- Integrating BPS model in formulation
- Clinical reasoning as a tool for DF
- Developing a structure for DF
- Practicing DF with case histories

Thought Experiment



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Where does DF stand in modern Psychiatry?

“The psychiatric formulation is broader than diagnosis alone. It takes into account the social context, contributory risk and protective factors, and developmental change. These factors are relevant to formulation of the management plan, selection of appropriate treatments, and prediction of adherence and prognosis. This approach is unlikely to be replaced by a purely biological or investigative approach and in its ideal form should continue to be based on an integrative bio-psycho-social-cultural formulation”.

Bhugra et al;The WPA-Lancet Psychiatry Commission on the Future of Psychiatry: Lancet Psychiatry 2017

What is a diagnostic formulation ?

- ✓ Explanatory hypothesis
- ✓ Goes beyond the diagnosis

- ✓ Conceptualises the patient’s current and future clinical picture, aetiology and management
- ✓ Does it in the context of bio-psycho-socio-cultural domains

DF and Learning

- Skills required to formulate or conceptualise a case is refined throughout one's career.
- Reflect higher-order thinking, which encompasses the abilities to understand, apply, analyse and synthesise knowledge, that are acquired during psychiatric training.

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Bio-Psycho-Social Model

George Engel, 1980

- A corrective to the narrow Bio-Medical Model.
- Wanted to counter the classical science approach of breaking illness/behaviour into simple parts and identifying a linear causation.
- Attempted to link the biological, the psychological and the social factors into a conceptual whole.

Bio-Psycho-social Model (Engel)

FIGURE 1
Hierarchy of Natural Systems

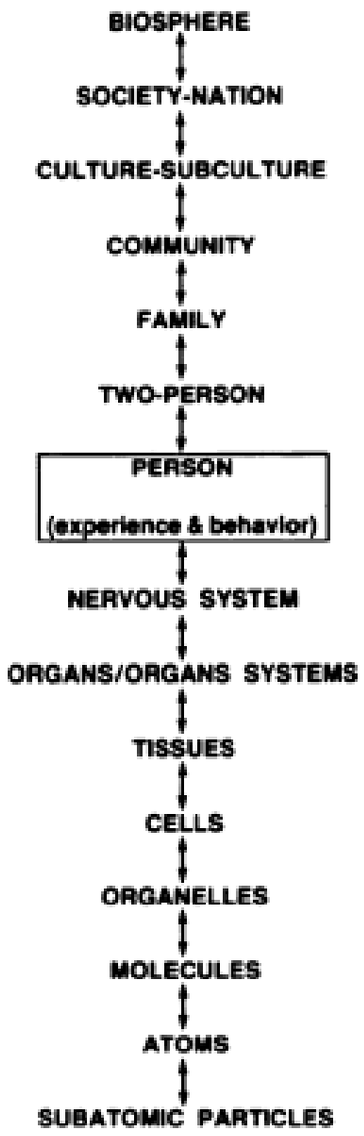
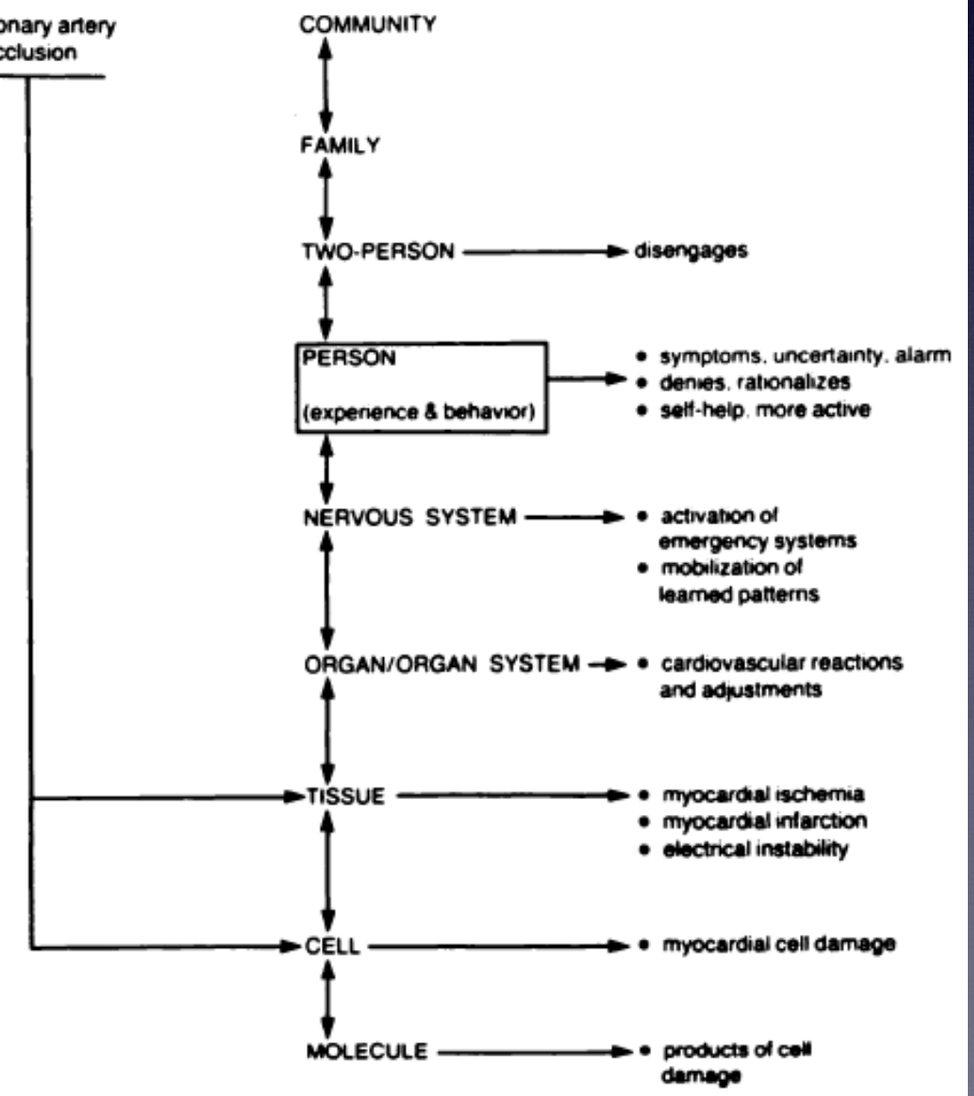


FIGURE 3
Event 1: Coronary Artery Occlusion



BPS model - reasons for lack of popularity

- Too complex to trace connections beyond 2-3 levels
- Too theoretical, incompatibilities between theories and theorists
- Sub-specialisation - More of less
- Modern Psychiatric diagnosis is a-causal- stands against BPS model of illness.

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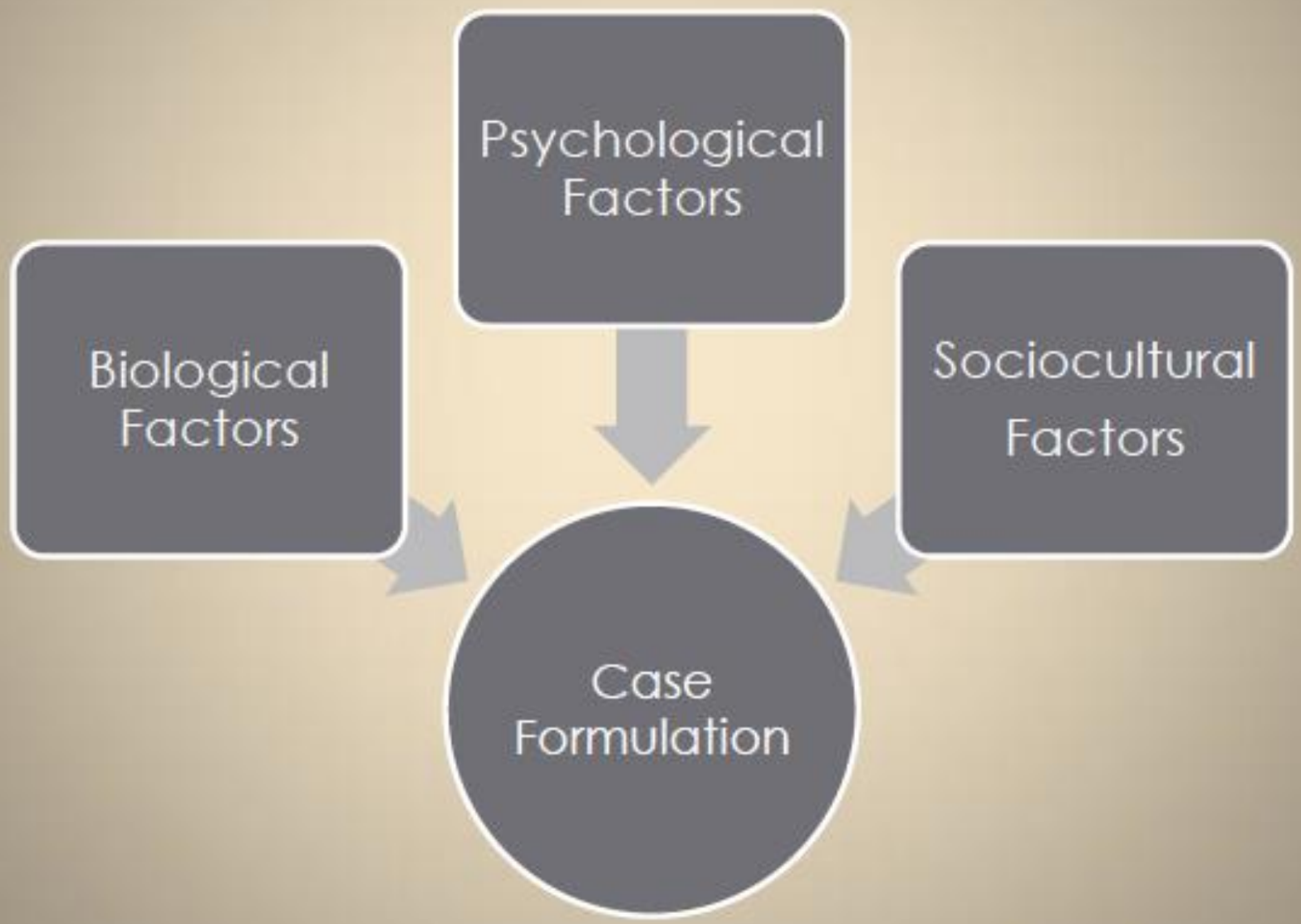
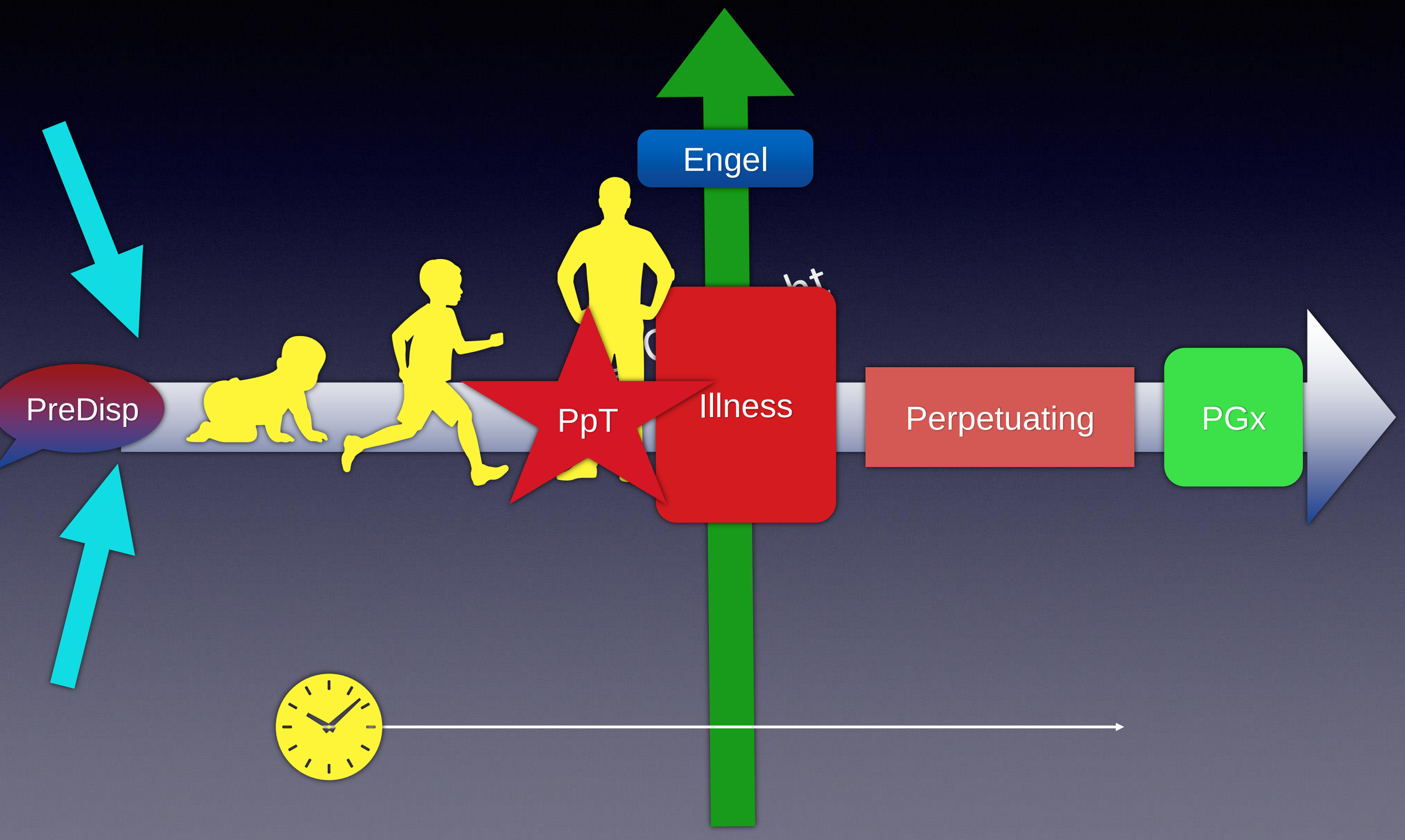
Biopsychosocial Model in Case Formulation



The 4 Questions for DF

- Predisposing factors : ‘Why is this person vulnerable to this problem?’
- Precipitating factors: Why now? This can refer to ‘why is this person having symptoms now?’ and/or ‘why is this person presenting to this healer for treatment now?’
- Perpetuating factors: ‘Why is this person still ill?’
- Protective factors: ‘Why is this person not more ill?’

Integrating BPS model in DF



The Matrix for DF

	Biological	Psychological	Social
Predisposing			
Precipitating			
Perpetuating			
Protective			

The Million Dollar Question !

- Within the context of the clinical examination, formulation is a set of explanatory hypotheses (or speculations), which address the question:

- ‘Why does this patient suffer from this (these) problem(s) at this point in time?’

- The essential task in formulation is to highlight possible linkages or connections between different aspects of the case.

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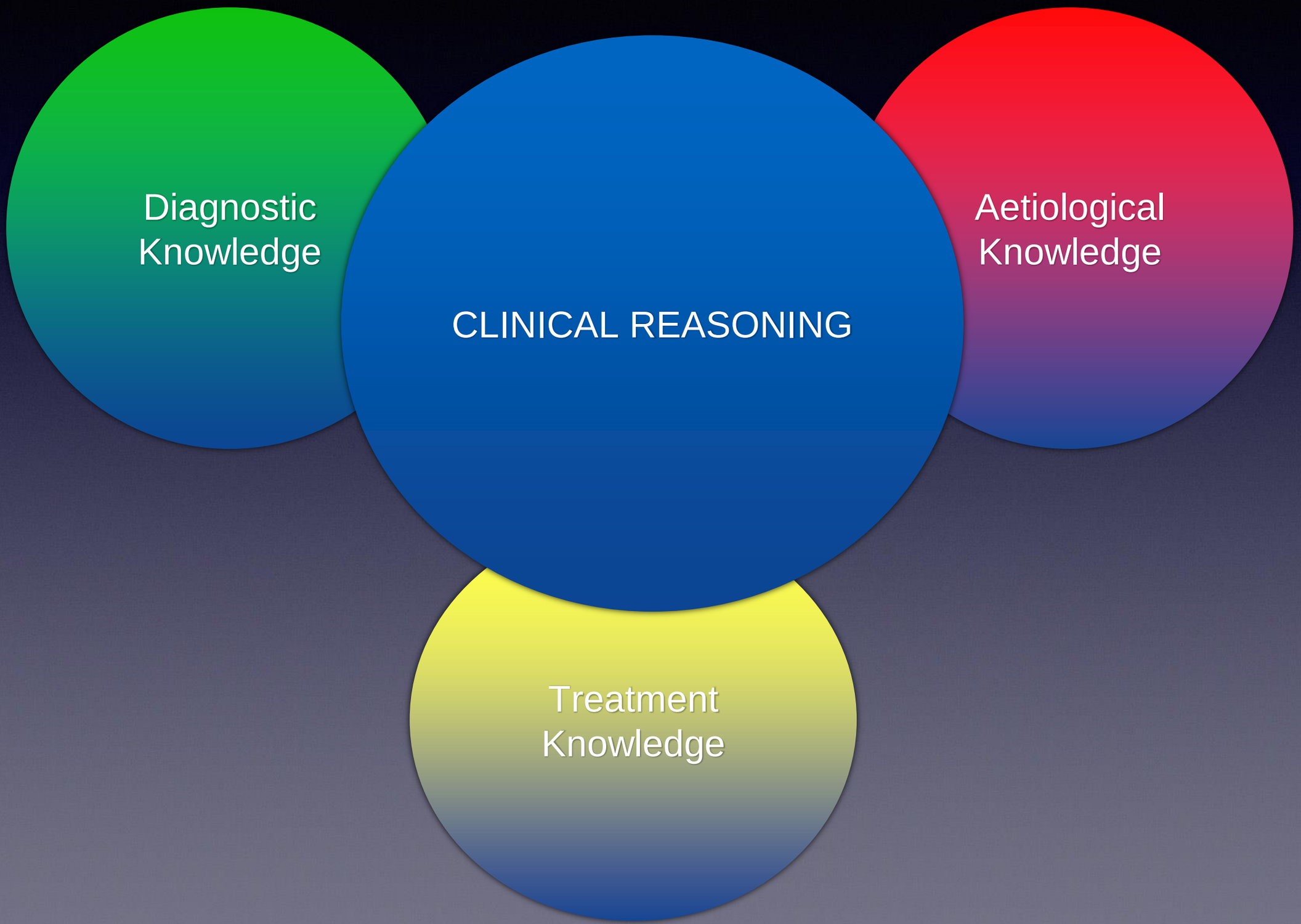
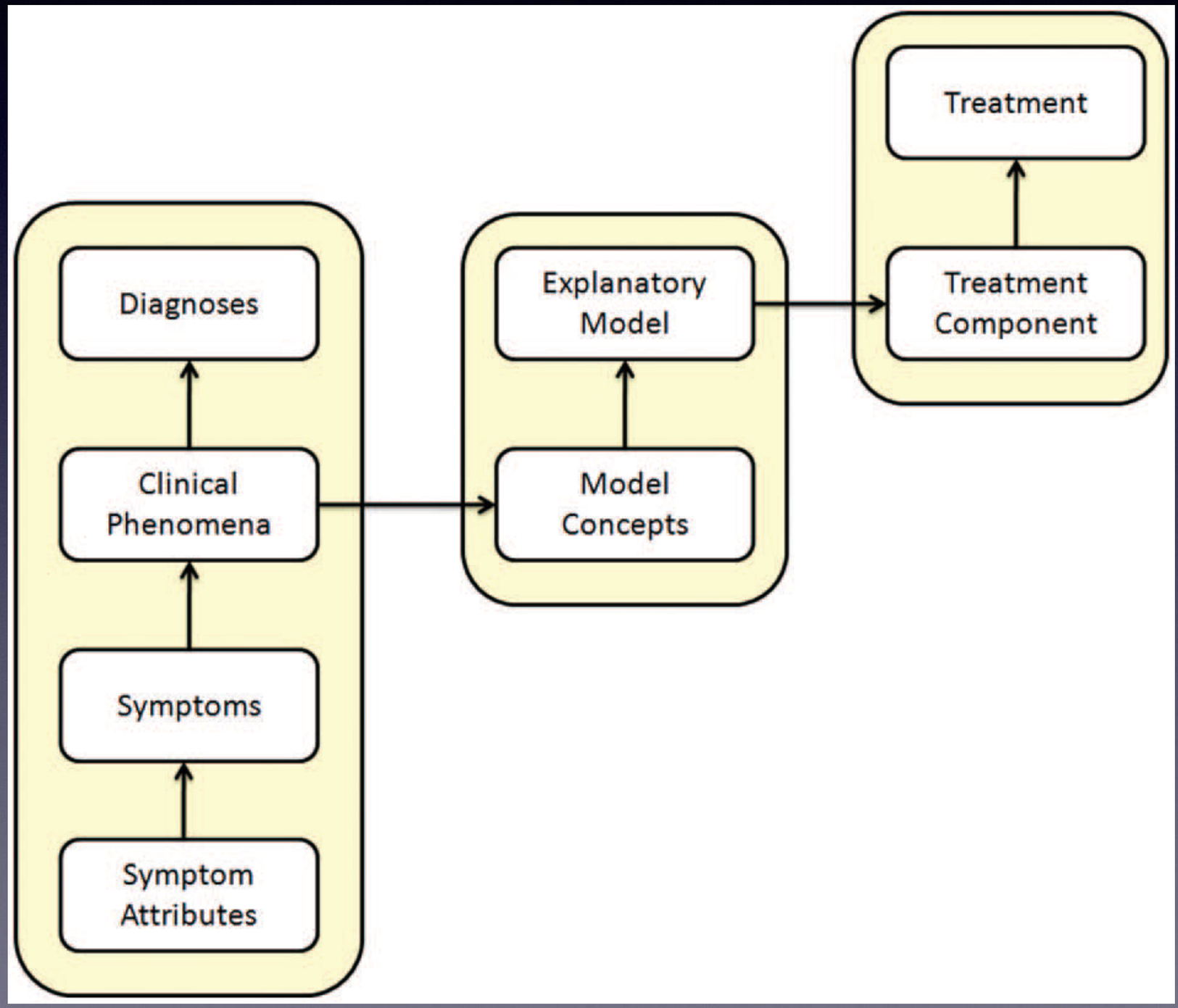
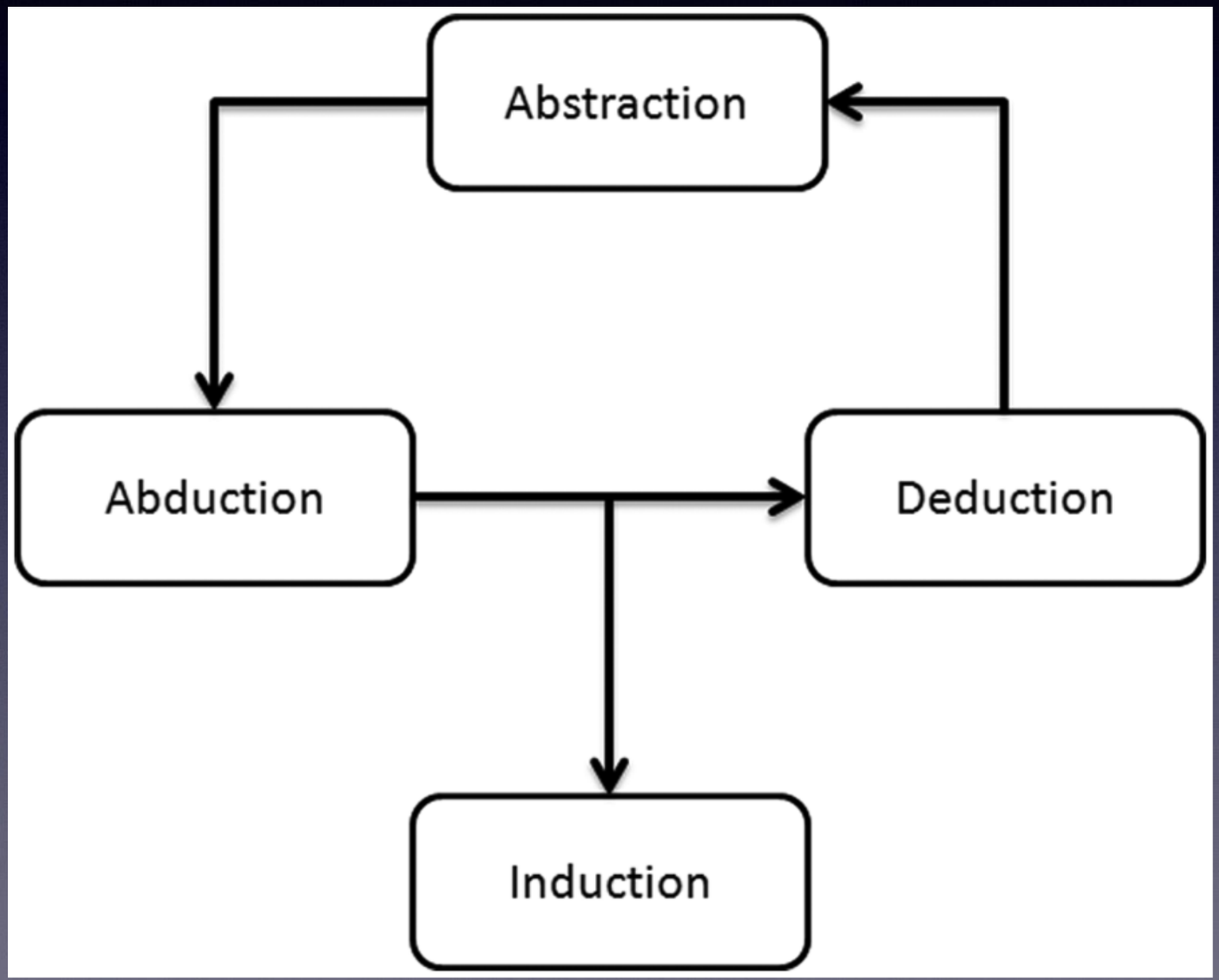
The Art of Clinical Reasoning



Connection between the 3 components of Clinical Reasoning



4 steps of Clinical Reasoning



1.Abstraction

- Involves
- 1) Eliciting individual symptoms, clinical signs, and phenomena during the clinical interview/examination

- 2) Eliciting symptom attributes
for eg Depressed mood - duration, progress, presence of fluctuations, severity

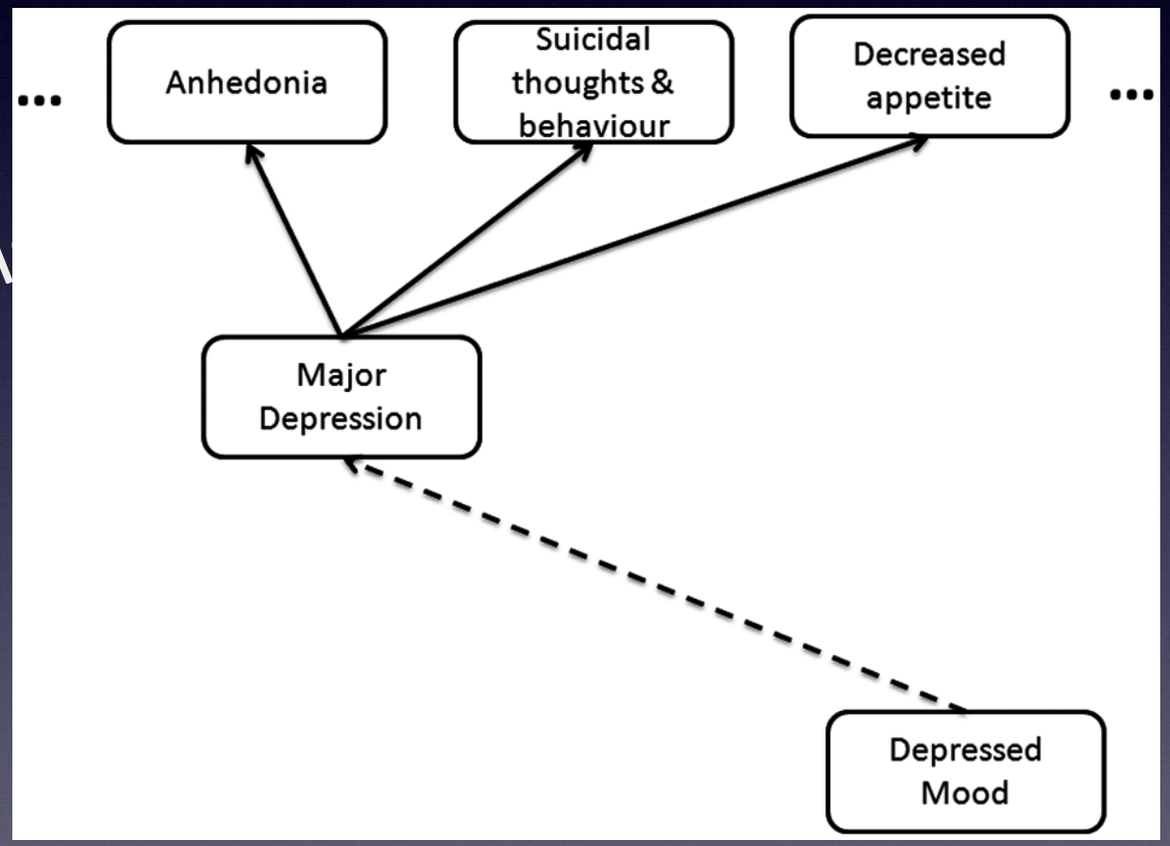
2.Abduction

Two parallel processes should occur

- 1) Generating diagnostic hypotheses (differential diagnosis), and
- 2) Generating aetiological hypotheses by tracing the related diagnoses and clinical phenomena.

3.Deduction - Diagnostic hypothesis

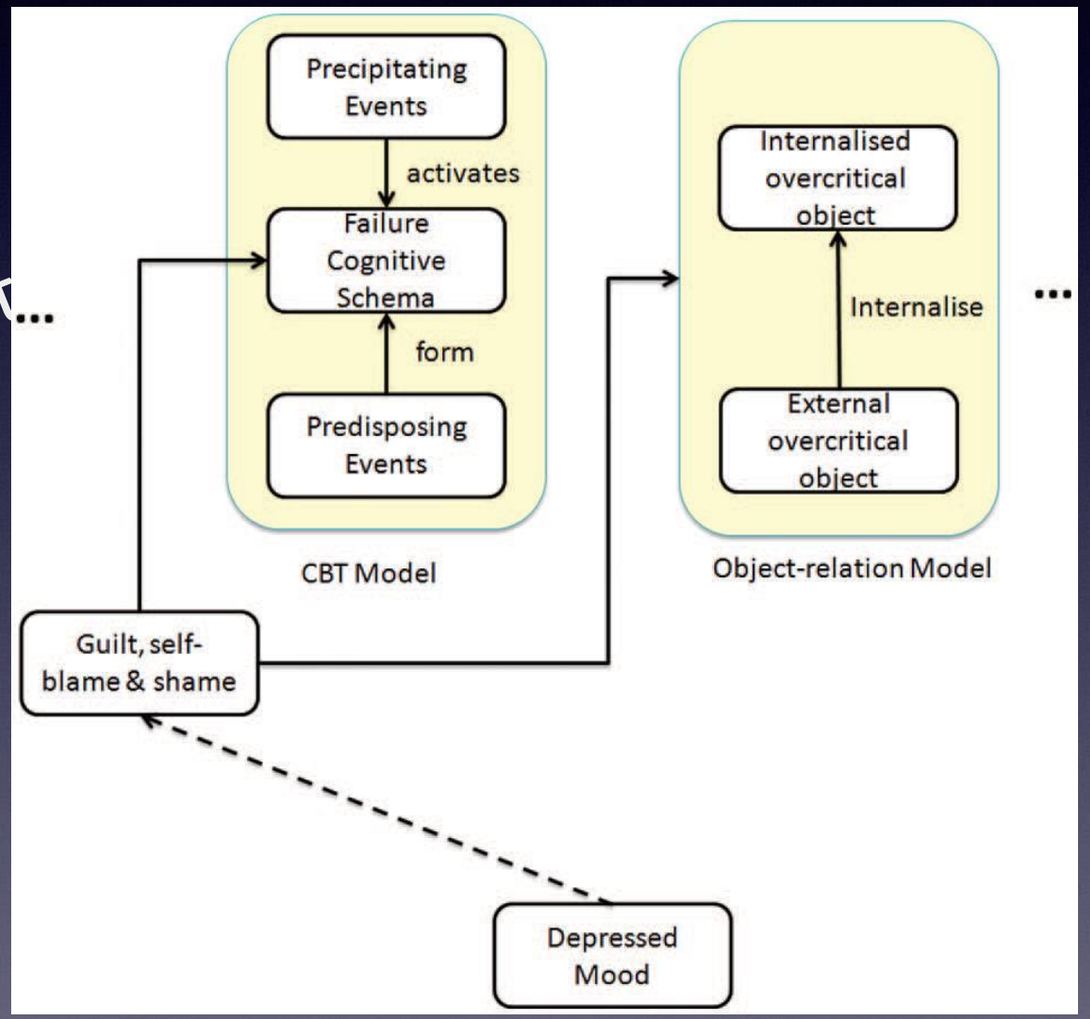
- Deduction in Diagnostic hypothesis Involves tracing all expected symptoms in relation to a given diagnosis



Deductive inference for the diagnostic hypothesis Major Depression

3.Deduction - Aetiological Hypothesis

In relation to aetiological hypotheses, deduction involves exploring likely aetiological explanatory models related to each clinical phenomenon.



Deductive inference for the clinical phenomenon: guilt, self-blame, and shame.

4.Induction

- Requires matching the relevant symptoms and clinical phenomena elicited with those expected in relation to each diagnostic hypothesis
- Use ICD-11 or DSM-5 to compare
- Accept or reject the various diagnostic hypothesis
- Choose the best fitting aetiological hypothesis

Models for formulation

- Formulation requires model-based knowledge that spans across the bio-psycho-social domains.

- This knowledge uses a set of hypotheses, which can be derived from diverse theoretical models, to help us understand a given clinical situation.

Models for formulation

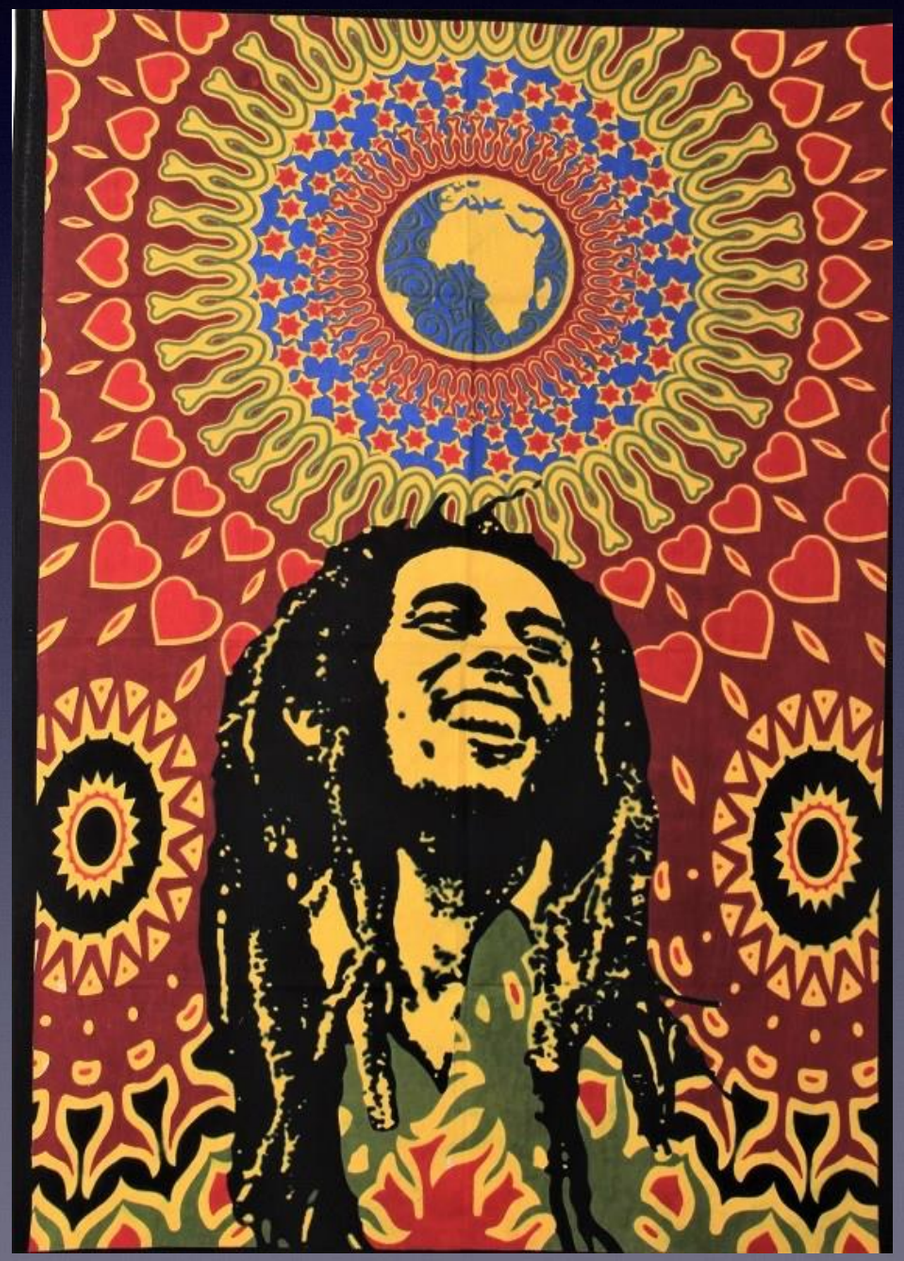
- Biological - Genetic/Birth insults/Neuroendocrine/HPA Axis/Circadian rhythms/Priming/Kindling
- Psychological - Self Psychology/Object Relations/Ego psychology/Cognitive-schema/Behavioural/Attachment/Erikson's/Interpersonal/Dialectical Behavioural
- Social - Drift Hypothesis/Migration/Family Systems

Raw materials needed

- Clinical reasoning - Abstraction -> Abduction-> Deduction->Induction
- PPPP X BPS
- Aetiological models linking the above.
- Seamless integration.

The art of formulation

Involves the ability to link salient information gathered from the patient with those theoretical models that have the most explanatory power, with the aim of achieving a seamless integration of the linked components.



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Guideline for formulation

- Section I - Introductory statement that places the patient and their problems in context
- Section II - Highlights the important biological, psychological and socio-cultural aspects of the history which have potential explanatory power. In contrast to the preceding section, this section provides a more ‘longitudinal’ perspective.

Guideline for formulation

Section III -

The task in this section is to make linkages between the material of Section I and Section II using hypotheses derived from an acceptable model or framework. Thus, the patient's vulnerabilities are juxtaposed with current stressors (and/or environment) to provide a plausible explanatory statement.

Patient's strengths (or protective factors) are mentioned here.

And finally…

“The case formulation for any given patient must involve a careful clinical history and concise summary of the social, psychological and biological factors that may have contributed to developing a given mental disorder. Hence, it is not sufficient to simply check off the symptoms in the diagnostic criteria to make a mental disorder diagnosis…

It is well recognised that this set of categorical diagnoses does not fully describe the full range of mental disorders that individuals experience and present to clinicians on a daily basis throughout the world” - DSM-5

“When treating a patient, not only are you treating the condition in front of you, but also trying to prevent something else in the future”.

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CASE HISTORY 1 :
Maria, 34 years old, Middle socio-economic status, a bank accountant by profession, graduate, living with her husband who is a businessman and 2 kids aged 10 and 5 years old. Presents with 3 months history of persistent sadness of mood, poor concentration at work, tiredness most of the time, early morning awakening, guilt and blaming herself for being a bad mother, inability to handle demands at workplace and interact with customers and colleagues at workplace, fear of going out to crowded public places. She also narrated many instances where she struggled to participate in social events and workplace discussions. She complained of constant thoughts, surrounding her own inability to handle all the demands, lack of support from her husband in caring for her children, and increasing work stress. She did not report any first rank symptoms/OC/GAD symptoms. No suicidal ideations.
Past history : 2 episodes of depression, first at the age of 23, followed by 2 others. There was a post partum onset of depression 5 years ago, necessitating a course of ECT. The ECTs were stopped when she had a brief hypomanic switch.
Medical history: No thyroid dysfunction. Nutritional status normal. No medical co-morbidities.
Treatment history: On Sertraline 150 mg, Quetiapine 50 mg for the last 6 months. She was always adherent to medication and regular in her follow up.
Family history : Both parents suffered from depression and were on long term treatment. Elder of 2 girls. Mother suffered from severe depression, and needed multiple admissions during her growing up period.
Developmental history:
Recalls being lonely as a kid. Few friends in school, struggled a little being in a group, anxious when being the centre of attention. Above average in studies. Recalls being assisting her mother when ever she became unwell, and being in the hospital when she was admitted. Took up responsibilities from a young age. Started doing part time jobs from 18 years of age while continuing her studies. Marriage at the age of 22, to her husband who is a distant relative.
MSE
Distraught individual, looking her stated age, fairly kempt, tearful during the interview, maintaining eye-contact only intermittently. Rapport could be established with some difficulty. She had soft tone, coherent speech, decreased psychomotor activity and reported feeling sad. She had depressed affect with decreased reactivity, restricted range and it appeared congruent to her thought process.There was slowed stream of thought, though no formal thought disorder was evident or problems with possession of thought. She reported feelings of worthlessness, hopelessness and guilt, especially due ot her inability to being a “good mother”. She did not report any persecutory or referential delusions nor was there any hallucinatory experiences. She did not report suicidal ideations. Overall her insight appeared to be fair, with she acknowledging she was ill, and attributing her difficulties partly to depression, and wanting to get better with treatment. Her judgement at least on personal level appeared to be impacted with the illness.

Diagnostic formulation…..
DD
Dx.
Treatment plan:

Case 1 - depression

An important theme that arises in Maria's presentation is the presence of a strong biological predisposition to a depressive illness with a family history in both her parents. Additionally, her anxious temperament also predisposes to depression and anxiety. Her first episode of depression was at the age of 23 followed by 2 further episodes necessitating ECT. One of these led to a possible hypomanic episode. This, in addition to the episode of postnatal depression, raises the possibility of bipolarity which might be contributing to the treatment resistance.

From a psychological point of view, I wonder how growing up with two parents with depression impacted on her developing sense of self and her self esteem due to attachment difficulties and parentification. Based on a cognitive model, it is reasonable to assume that this may have led to dysfunctional assumptions of self with a tendency to self blame and self criticality leading further to difficulties in negotiating the early challenges of childhood and adolescence. This would have then impacted on forming peer group relationships.Her current episode seems to be in the context of work stress and her inability to go out due to agoraphobic symptoms has impacted on forming social relationships which further reinforces the sense of inadequacy and low self esteem.

I wonder how her depression has impacted on her being a mother which parallels her early childhood; and if this reinforces a feeling of guilt further contributing to the depression. Her symptoms are being maintained by social isolation, anxious temperament, self critical evaluation, un-supportive partner and difficulty coping with the child.

Fortunately she has positive prognostic factors which include compliance with medication, absence of drug and alcohol misuse and absence of overt maladaptive personality traits.

Case History 2:

Ramkumar, 40 years old, living with his parents in their seventies, unemployed currently, BA completed through correspondence 5 years ago, hails from middle class family background. He presents with relapse of his illness, characterised by increasing hostility towards his parents, irritability, muttering to self, arguing with his neighbours, and poor sleep at night. On interview, he acknowledged that he has not been feeling well for the previous 2 weeks, and that he had missed his medications for 5 days. He complained that his parents had never wanted him to succeed, and derides him often. He also reported that he was unnecessarily being commented upon by neighbours, who take pleasure in his misery. He had shouted at them to stop this intrusion.On specific enquiry, he did not mention any intention to harm anyone. adding that he “just wanted to scare them”. He did not report depressive symptoms, however acknowledged that he has been feeling overwhelmed by the continuing stressful environment. He did not report thoughts of self harm or any physical discomfort. There was no substance abuse.

His parents reported being at their wits end, trying to get him to “improve and change”, and worried what would happen to him after their time.

Psychiatric history : First episode of illness at the age of 19, while in college. he had multiple relapses in the context of non-adherence to medications. Fairly continuous last 10 year history of illness with incomplete recovery, good functional ability in the initial few years, however showing signs of declining socio-occupational functioning in recent years. Difficulty in concentration prevented him from continuing his tasks for more than 5 -10 minutes.

Treatment history: On Amisulpride 400 mg, and Mirtazapine 7.5 mg.

Medical history: Overweight, does not have diabetes or hypertension.

Family history : Only child of his parents. History of mental illness in maternal aunt, suggestive of schizophrenia. No neurological illnesses in first or second generation family. Both parents have DM. Mother feels she is partly to be blamed for his illness.

Developmental and personal history:

Born out of caesarian delivery owing to cord around the neck, no developmental delays. Shy and aloof child, who took time to engage with people. High expectations from his father, who was also a strict disciplinarian. Scholastically average, scoring 70 percent in his 10th, and 60 percent in his year 12. Had to discontinue studies during his first year of college, completing his degree much later through correspondence. Few close friends in school and college. Not had any close relationship with anyone, avoided interacting with opposite gender during his adolescence and early adult years. Worked occasionally as a data entry operator, but could not cope up with the job’s demands. He harbours hopes of clearing his MA exam, and pursue a career as a teacher.

Mental Status Examination

Overweight man, looking older than his stated age, was fairly kempt, and was cooperative for the interview. Rapport could be established, albeit superficially. He was noted to be fidgety during the interview, and avoided gaze intermittently, preferring to look down and converse.At times, he muttered to himself.His speech was relevant and coherent, and was goal directed. He described his mood as great, however his affect appeared blunted, and incongruent to his conversational themes, exhibiting a constricted range. The stream and form of thought were normal, showing no evidence of a formal thought disorder. He reported being disowned by his own parents, attributed his problems to them and their attitude, and the problems created by his neighbours by commenting about him continuously, suggesting hostility and persecutory delusions, as well as auditory hallucinations. He did not report his mind or body being controlled or his thoughts being known to others. There were no thoughts of harming self or plans to take revenge on his parents or neighbours. Cognitive screening demonstrated impairment in attention, in view of his performance in digit span, serial subtraction and finger tapping tests.Overall his insight and judgement appeared to be impaired.

Diagnostic formulation…

DD

Dx

Management plan.

Case 2 - Schizophrenia

Ramkumar is a 40-year-old single man on disability pension with a 10-year history of chronic schizophrenia. He lives with his parents in their own dwelling. Over the last 10 years, there has been a progressive decline in his overall level of functioning, with relapses of acute symptoms occurring with stressful events in the family or non-compliance with medication. His family has responded to his illness with what appears to have been either over-protection or alternatively with denial and rejection. He currently presents following altercation with his neighbours and aggressive behaviour at home in response to abusive auditory hallucinations and paranoid delusions involving them.

Ramkumar was a shy child, the only son in the family, and he was often aware of an expectation from his father for him to achieve. The history that a maternal aunt suffered from a psychotic illness may indicate a genetic predisposition to schizophrenia, but also appears to have caused guilt and self-blame in his mother. Ram's increasing withdrawal in adolescence may have been a reflection of family pressures, dealing with the tasks of adolescence or the first signs of illness. Ram formed few friendships and had been failing in his studies at the time of his first psychiatric admission at 19 years of age. With the continuation of his illness, Ram has failed to develop the skills for relationships and independent living and continues to rely heavily on his family.

He continues to plan unrealistically for a future in which he will study and complete his MA and develop a successful career as a teacher. He is very reluctant to attend a rehabilitation program. This reflects his difficulty in accepting the limitations of his illness and perhaps also the unresolved need to meet his father's high expectations. It appears that parental guilt and grief over Ram's illness lead them to reject him at times. This is often compounded by Ram developing persecutory delusions about the family. When he attempts to work as a data entry person, his cognitive difficulties especially poor attention span, prevent him from sustaining his job and his family demands that he stay at home. He experiences these demands as over-controlling and feels criticised. Thus, both of the family's responses to his illness (either rejection or over-protection) appear to contribute to a high EE environment, predisposing to relapse.

Case -3 Dementia

Mrs Radha is a 72 year old retired teacher, who post retirement is running a play school. She insisted that there are no problems which required a consultation with me in the memory clinic. While she could answer direct questions, she lacked spontaneity and her answers were slightly vague, lacking depth and detail. On direct questioning, she admitted to memory difficulties for some time which were confirmed on cognitive testing with deficits as outlined previously. The details of her problems were narrated by her son and daughter-in-law who were worried about her declining memory and ability to live independently and increasing irritability.

Mrs Radha gives a history of somebody who had a happy childhood and as an adult has been a well loved teacher, an active member of the local temple committee and a responsible wife and mother. She has been happily married for 45 years, but described herself as 'lost' since her husband's demise 2 years ago. She denied any significant medical or psychiatric history. On brief physical examination she was noticed to have poor dental health, and blood pressure of 150/100.She acknowledged a weight loss of 10 kgs in 1 year

The patient was aware of her cognitive difficulties and had some insight into her disorder. However, she tried to minimise her problems in front of her son and daughter-in-law. It appeared that she was in denial, more as an attempt to prevent closure of her play-school, which has helped her cope with grief and maintain her financial independence. Clearly, the illness entails multiple losses for her and the sad affect and tearfulness she displayed (when describing these) seemed to me to represent more a process of grief and bereavement, rather than organic emotional lability or major depression (although the latter requires exclusion). Similarly, her anxiety seemed clearly related to fears concerning her own future.

I would hypothesise that Mrs Radha may have been suffering from cognitive difficulties for some time, with her husband possibly 'protecting' her in a practical way. His sudden demise both removed that practical support and acted as a major psychosocial stressor, precipitating her own deterioration in functioning and highlighting her inability to live independently.

THANK YOU

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