Is a science of Psychopathology possible?

Integrating Phenomenology and Cognitive Science in Clinical Psychiatry
How important is Descriptive Psychopathology

- Treatment of mental conditions takes reference to diagnosis
- Diagnosis is largely based on symptoms
- Symptoms are largely subjective experiences
- How reliable can these be? Can one lie about symptoms?
The “Rosenhan Observations” in Hong Kong

• Original observations
  • USA 1973 (US-UK diagnostic study published in 1971) (cf USSR)
  • 8 individuals feign hallucinations to get into hospital
  • All but one received diagnosis and prescribed antipsychotic medication

• Hong Kong 1990s
  • One medical student
  • feigned hallucinations, admitted to a Castle Peak Hospital
What is involved when a clinician clarify subjective experience?

• The clinical dialogue cycle
• The nature of the raw material: Subjective experience
• Individual meaning
• What is scientifically informative: form, observation, behaviour?
• How is the process articulated and communicated
• The role of empathy
Symptoms assessment in general medicine

Patient’s mind

Bodily Illness

Communicate Symptom

Clinician

Perceive Dysfunction

Exam Investigation
Psychopathology assessment

Perception Of illness

Mind

Mental Illness

Communicate Symptom

Exam

Clinician
CNS signs

- Objects of Psychopathology
- Signs are observed externally; Symptoms are reported from inside
- CNS Signs include active response to probes and spontaneous behaviour
- Symptoms reporting requires subjective awareness of changes (Limits of awareness)
- Subjective experience as observed signs (mental state as “observed” rather than communicated as symptoms)
- Subjective experience as object of psychopathology
Dialogue cycles
The Dialogue cycle

- Iterative clarification
- Dialogues processes
- Subtle interactions: Linguistic alignment at various levels
- Some alignment may provide diagnostic information e.g. disorganization
- Awareness of alignment and use of grammar and terms
- Influence of concepts, in subtle ways between clinician and patients
- Ways questions asked determine ways answered, and position of answer
- Why different ways of asking could lead to different information: lines of approach constraint
- Need to be aware of observer effects and “uncertainty principle”
Internal Access problems

- Failure to access
- Fear and trauma
- Direct influence of psychotic content “voices telling not to go with doctor”
- Memory biases and heavy secondary elaboration
- Facilitation of access by gradual priming: proximal details and information
- Access is linguistic based?
- Limitation of language and categories for primary experience
Subjective accounts

• Narrative and non-narrative discourse
• Story telling is some kind of social act
• Story is about someone trying to do something, and what happens to her and others as a result
• Narrative is event-centered: Event is composed of both action and experience
• Has rhetorical power to persuade and make audience care about the events
Pre-narrated experience

• Lacks coherence
• Fleeting, formless, difficult to grasp
• Access by reflection, co-construction possibility
  • The past is to some extent “made” whenever it is reconstructed (Wyatt, 1986)
• Experience and communication mediated by narrative layer
Structure of narrative

• Temporal quality (narrative time)
  • Unfolding in time (Riceour 1981)
  • Inherently forward projecting
  • Teleologically directing towards imagined end states

• Working through resolutions

• Prototypical emplotments
  • A plot for sequential, ongoing unfolding of information
  • Reader receive by composing the story actively (Reader Response theory, Iser, 1978)
Illness forms

- The narrative form include
  - Structural characteristics of illness stories
  - Relationship to life histories
  - Illness knowledge
  - Values encoded
  - Impact on lives
Is there a problem that the primary experience is subjective?

- Can subjective experience be objectified?
Taxonomy in Psychopathology

- Disorders of perception
- Disorders of thought and speech
- Disorders of memory
- Disorders of emotion
- Disorders of the experience of the self
- Disorders of consciousness
- Disorders of Motor control
Taxonomy of Perceptual symptoms

Perception
  - Distortions
    - Intensity
    - Hyperaesthesia
    - Xanthopsia
    - Chloropsia
    - Erythropsia
  - Quality
    - Form
    - Size
    - Micropsia
    - Macropsia
  - Illusions
    - Fantastic
    - Pareidolia
    - Hypno-hallucinations
  - Hallucinations
    - Visions
    - Hearing
    - Smell
    - Taste
    - Touch
  - Deceptions
    - Verbal
    - Non-verbal

Nature of psychopathological knowledge

• Individual experiences
  • Similar to other symptoms in medicine
  • Less of other supporting “objective” signs/investigations
  • Higher complexity
  • Hence Informational significance higher

• Subjective experience as data
  • Similar/different from data in natural science?
Conventional Dichotomy between Natural science and subjective experience

- Two separate domains of knowledge:
  - Natural science
  - Human subjective experience
- Scientific revolution objectified the natural science universe
- Subjective experience is not fully accessible using conventional empirical techniques from natural sciences (including positivist social sciences)
- These approaches need to be accompanied by a more engaging access to subjective experience
Can anomalous subjective experience be studied empirically?

- Can subjective experience be a Natural Science object?
- Material objects vs non-material objects
- Requirement for Natural Science
  - Reliable measurement: can subjective experience be shared?
  - Repeatable observations: can subjective experience be repeated?
Can subjectivity ever be objectified?

• The brain basis for subjective experience is not questioned
• The physical units of the brain representation cannot be compared between individuals
• Each individual may use a different set of neurons to encode similar subjective experiences
• To compare across individuals references to those experiences is required
• Objective investigations alone cannot fully describe subjective experience
Nature of subjective knowledge

• Not explicitly shared
• Shared through language indirectly
• No direct access otherwise
• Cultural and language dependent
• However, reliability possible if concept and language are shared
The Ryle Wink

• Question is how do we describe the wink of an eye
• Rating a wink?
  Rating scale, electromyography etc?.
  • Gilbert Ryle
Information and Winking

Motion of unilateral contraction of eyelid
  • Winking as signal
  • Involuntary blink
  • Parodying in ridicule
  • Practicing to fake a wink

• Most important information lost unless a behaviour is described within a context

• Decontextualization often happens with rating scale methodology, hence the limitations of rating scales
The Gap cannot be closed by naive positivist empiricism

• The gap between neuroscience and the immediacy of subjective human life
• Is there a neural representation of subjective experience? Are the cells representing equivalence experience theoretically mappable?
• Can we access others subjective experience “from the outside?”
• Mapping is: biological hardwire set: spatial same set of neural substrate in different individuals i.e. physical connectivity
• Semantic (meaning) network (not hardwired) i.e. the same network of representation instantiated by spatially different sets of neurons in different individuals. i.e. relational connectivity
• Phenomenology access subjective experience
Positions in reaction to failure to objectify

Obscurantism
  Nothing can be known about the mind scientifically
Scientism
  Only those things which can be studied empirically are worth knowing
Subjective experiences requires a different approach

Weber: Interpretive approaches rather than empirical approaches when studying human affairs

Pylyshyn: In cognitive science: Functional architecture as basic brain processes are open to natural science. Cognitively penetrable modules as experiences need to take into consideration human intentions

Closing the gap by force (positive empiricism, e.g. by using rating scales) does lead to false sense of objectification

Does phenomenology offer a viable approach?
Phenomenology

• Subject experience as appearing to consciousness as the starting point
• A diverse enterprise:
  • Husserl developed phenomenology as an objective science
  • Merleau-Ponty: unveiling of the pre-theoretical layer of human experience (without judgment and assumption)
• A foundation with its own standard of validity
• We adopt early position of Husserl and his students, especially Stein
Psychopathology
Subjective experience is communicable via language

- Language are maps of objects to words (semantic units)
- Some objects are more shareable (e.g. in the physical world)
- Some objects are less shareable (e.g. in the cultural world)
- Semantic units constitute a richly interconnected network
- Meaning are derived from relationship with other units
- Explicit referents anchor to easily shareable objects
- Based on shared relational mapping, less shareable objects can also be meaningfully mapped and shared
Representations as holders of information in the brain

• Representations are distributed amongst a number of units
• Each unit specific a feature dimension
• Each feature dimension can be filled by a number of possible values
• The specification of an individual value in an individual case gives information
Homeostasis of individual models of reality

Real world

Assimilation

Mind

Accommodation

Person
\( h_i = \sum_{j=1}^{N} J_{ij} \sigma_j \)

\( \sigma_i = \psi[h_i > T_i] \)
State of affairs (SOA) are formulated as propositions

State of Affairs SOA

A propositional representation

<table>
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<th>Action 1 (a1)</th>
<th>Action 2 (a2)</th>
</tr>
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<tbody>
<tr>
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<td>Verb</td>
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<td>A</td>
<td>sees</td>
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<tr>
<td>A</td>
<td>a1</td>
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</tbody>
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Representation of a group
Important content domains of representations in the human mind

- Self
- Body
- Proximal environment
- Distal environment
- I
- TOM
- COM
An Empathic representational model

• Experience as representation with dimensions
• Minimalist model
• Representations in clinical dialogue: tracking of information
Empathy as subjective experience

• The phenomenology of empathy (Stein)
• Empathy is not perceptual, more similar to memory
• Empathy involves some intuiting and mental explication
• This lack of full access is important in defining Others
• Empathy as such is fundamental to objectivity: shared knowledge only make sense with others are not totally enmeshed with self
• Human knowledge is not a linear rational path, but an interacting network
Significance of empathy for the person

Empathy

Objective reality

Environment
Dialogue cycles
Can this perspective be helpful?

• A model of the psychopathology process
• To help articulate subtle cascades of clinical processes
• To help clarify communicable aspect of experience
• To help define limits of information in particular clinical scenario
• Not a brain model but a model of communication of experience