

Psychoanalysis and Mathematics

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Returning to psychoanalysis

- Still plenty of opposition to psychodynamic therapies
- Confusion of tongues amongst schools, yet a great deal of commonality
- New currents: e.g., less the analyst as archaeologist interpreting finds from different levels of the psyche, and more as a participant in the here-and-now of the interactional dynamics.

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Could there be a mathematization of the theory?

Lacan on the *Mathème*

Formalization is our goal, our ideal. Why? Because formalization as such is a mathème: it can be fully transmitted. (Seminar XX, 1973)

...the language of a pure mathème, in other words, the only teachable discourse. (Scilicet 1973)

But there from the start

... the mathematical formalization that inspired Boolean logic, to say nothing of set theory, can bring to the science of human action the structure of intersubjective time that is needed by psychoanalytic conjecture if it is to ensure its own rigour. (The function and field of speech and language in psychoanalysis, 1953)

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Later:

- the topological spaces of signifiers and jouissance;
- the golden ratio as demonstrating the incommensurability of the *objet a* and the *unary trait*;
- the projective plane as the union of the moebius strip and disc, modelling the relation between subject and object in the fantasy;
- the Borromean link and the three dimensions, and the symptom as fourth link.

My critical response

From mathematics to psychology: Lacan's missed encounters, in J. Glynos and Y. Stravarakakis (eds.) 'Lacan and Science', Routledge, 179-206, 2002.

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And yet...

- My interest in Intuitionistic logic grew out of Lacan pointing out the distinction between 'not for all $x \Phi(x)$ ' and 'there exists x such that not $\Phi(x)$ '.
- My first published article in Philosophy of Mathematics, *Assaying Lakatos's philosophy of mathematics* (1997), derives from an idea of Lacan: symbolising the imaginary of the real. Lakatos's problem was overly to fear the loss of the imaginary in symbolisation.

What prospects now?

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A topos is a category with a great many good properties of a logical and topological nature.

Connes relates the function of a topos as a classifier of a geometric theory to the *fantasme* or *fundamental phantasy*.

Lacan takes a *fantasme* to be a proposition that acts as an 'axiom' in the life of the patient, something like Freud's 'A child is being beaten'.
Geneviève Morel:

In short, "The phantasy, to take things up at the level of interpretation, takes on the function of an axiom, that is, is distinguished from the variable laws of deduction, which specify in each structure the abatement of symptoms, by appearing there in a consistent

³ Sigmund Freud, *Introductory Lectures on Psycho-Analysis*, Standard Edition, vol. XVI (New York: Norton, 1963), 370-71.

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manner.⁴ People were able to extract from this a doctrine that makes the phantasy a sentence holding the eminent position of a unique axiom in the structure of the subject — a fixed point or a centre of gravity that would support the whole of this structure, a constant determining the life of the subject, a particular law of desire holding the key to his or her destiny. As a unique axiom, phantasy would thus be distinguished from the symptoms that are deduced from it in a variable and overdetermined way, as Freud showed.

Morel discussed this example:

If we want to parody Freud and find “the sentence” of Mrs P’s phantasy, we could perhaps express it as, “A child is being killed”. But if the central object is really the subject, then its agent would be her mother.²¹ This phantasy is constructed on the basis of an equivocation in her mother’s desire, interpreted by Mrs. P as implying the right of life and death over her children, reported as a kind of oracle: “We don’t know if she’ll make it through the night.” This became the law of Mrs. P.’s being, and she continually lived out this sentence in her job. We could almost say that she lived in a kind of permanent acting out, in the limited sense in which Lacan used the term to speak of the repetitive behaviors of Dora and the young homosexual woman. In effect, she exhibited daily, in both her professional and her private life, the cause of her desire — the dead man — as a kind of macabre scenario.

More work to solidify this connection of the idea of a fundamental phantasy to that of a topos as logical theory.

Splitting, Projection, Projective Identification

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Splitting: Central to object relations theory is the notion of splitting, which can be described as the mental separation of objects into “good” and “bad” parts and the subsequent repression of the “bad,” or anxiety-provoking, aspects (Melanie Klein)

Projection: Being unaware of undesirable/unacceptable feelings and motives in yourself (for example, spite, hate, cruelty, envy) and mistakenly seeing them in other people instead.

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Projective identification

What one wants to get rid of in oneself can be disposed of by projective identification, and through controlling the object one can gain the unconscious illusion that one is controlling the unwanted and projected aspect of the self. (Joseph J. Sandler, M.D., Ph.D.)

Depressive position as accepting the split parts as the same object.

Tension of opposites

From a Jungian perspective, cure sees us hold the *tension of opposites* to allow the emergence of the *transcendent third*, perhaps via a transformative *symbol*:

...the shuttling to and fro of arguments and affects represents the transcendent function of opposites. The confrontation of the two positions generates a tension charged with energy and creates a living, third thing – not a logical stillbirth in accordance with the principle tertium non datur but a movement out of the suspension between opposites, a living birth that leads to a new level of being, a new situation. (Jung, The Transcendent Function)

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... despite the rejection of him by Jung himself, Hegel nevertheless seems to be the only one who could provide to Jungian psychology the kind of logic with which alone it could truly comprehend and say what it has to say. (Wolfgang Giegerich)

Future direction?

- Version of psychoanalysis due to Mark Solms, seven (or so) emotional drives.
- A high-dimensional space to navigate, governed by policies resulting from premature automatization.
- Cast in terms of active inference
- Could be better served by 'Structured active inference' via categorical systems theory (Toby Smithe): contextual hierarchical controller-generative model.
- Could represent intra- and inter-personal dynamics.