

# Methodological Reflections

David Corfield

University of Kent

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# My interests and teaching

- Philosophy of Science
- Philosophy of Mathematics
- Philosophy of Psychology
- Philosophy of Medicine
- Philosophy of History
- ...

Let's begin by considering *psychosomatic medicine*, where mind and body meet.

Albert Mason, *A case of ichthyosiform erythrodermia of Brocq treated by hypnosis*, BMJ 1952.

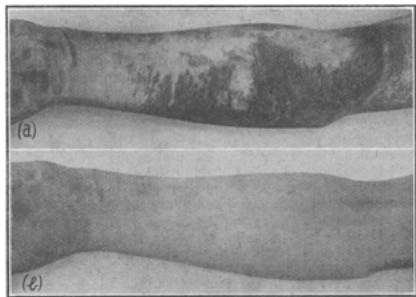


FIG. 1.—Right arm (a) before treatment; (b) eight days after treatment was begun, showing complete regression of ichthyosiform skin. (Left arm shows exactly the same picture.)

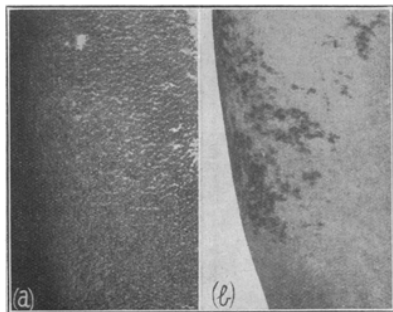


FIG. 3.—Skin of right thigh (a) before treatment; (b) one month after treatment was begun.

### **Conclusions**

**From this response to hypnosis one of two inferences may be drawn. Either there is a hitherto unsuspected psychic factor in the aetiology of the disease or this is a case of a congenital organic condition being affected by a psychological process. A combination of both these factors is of course a third possibility. Whichever is true, the improvement in this case seems to be totally unprecedented, and was effected after the failure of all recognized methods of treatment.**

Despite considerably fame deriving from this and similar work, Mason decided to change career path:

actually affecting things? The other thing that worried me: I was walking across Hammersmith Bridge one day and a woman came up to me and said, "Do you remember me, Dr. Mason?" I said no, I'm sorry. "I am the wife of man that you treated with a skin rash on his feet, on his legs." I said oh, I remember him, how is he? She said, "Oh his skin rash is gone, but he is a changed person. He has become terribly irritable now." So I suddenly realized I had transformed an irritation of the skin to an irritation of the person, that the man was irritated. And one form was to scratch, and another form was to scratch his wife. So I realized I was converting things, not curing. And that made me want to understand about the mind, and what it can do. And so I became a psychoanalyst.

Trained with Bion.

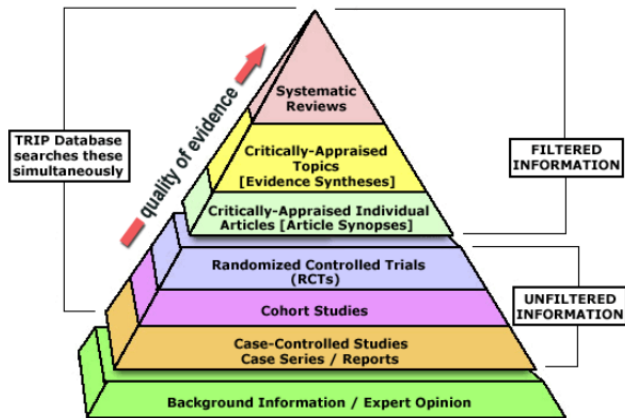
Mason: Hypnosis produces a *folie à deux*. Early overconfidence in dermatology case, where the passionate beliefs of the doctor mattered.

# Psychosomatic medicine

The Mason case, if it isn't fraudulent, should be stunning to anyone working in medicine, even if it involves an instance difficult to reproduce.

- Despite countless findings, (i) physiological, (ii) observational, (iii) interventional, there's enormous resistance to conceiving of the extent of the mind's role in health. (Cf. *Why do people get ill?*)
- This is witnessed by the treatment of the *placebo effect* as the "noise" to subtract from the "true" signal of drug efficacy, bundling together the power of suggestion with any non-medically induced change.

# Evidence-Based Medicine



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# Double-blind RCTs

- Tailor-made for drug interventions, not surgery, physiotherapy, alternative treatments or psychotherapy.
- Trials *are* used to assess psychotherapeutic modalities. However...



**Jonathan Shedler**

@JonathanShedler



1/ "In psychotherapy, practically the only consistent finding is that whatever kind of psychotherapy the person running the study likes is most effective. Thirty different meta-analyses have confirmed this"

Draw your own conclusions about outcome research



## On the other hand...

Shedler argues that we can criticize such studies:

### KEY POINTS

- The term *evidence-based therapy* has become a de facto code word for manualized therapy—most often brief, highly scripted forms of cognitive behavior therapy.
- It is widely asserted that “evidence-based” therapies are scientifically proven and superior to other forms of psychotherapy. Empirical research does not support these claims.
- Empirical research shows that “evidence-based” therapies are weak treatments. Their benefits are trivial, few patients get well, and even the trivial benefits do not last.
- Troubling research practices paint a misleading picture of the actual benefits of “evidence-based” therapies, including sham control groups, cherry-picked patient samples, and suppression of negative findings.

J. Shedler, [Where Is the Evidence for “Evidence-Based” Therapy?](#)

And he argues that trial evidence in favour of psychodynamic therapy has been achieved:

*Empirical evidence supports the efficacy of psychodynamic therapy. Effect sizes for psychodynamic therapy are as large as those reported for other therapies that have been actively promoted as "empirically supported" and "evidence-based." In addition, patients who receive psychodynamic therapy maintain therapeutic gains and appear to continue to improve after treatment ends. Finally, non-psychodynamic therapies may be effective in part because the more skilled practitioners utilize techniques that have long been central to psychodynamic theory and practice. The perception that psychodynamic approaches lack empirical support does not accord with available scientific evidence and may reflect selective dissemination of research findings.*

J. Shedler, [The efficacy of psychodynamic psychotherapy](#). *Am Psychol* 2010; 65(2): 98–109.

## Placebo effect recently

- Physiological pathways have been found (Fabrizio Benedetti) (“Words and drugs have the same mechanisms of action” ([article](#)))

*Although the responses to the therapist's words cannot be reduced merely to the action of a single drug, this represents an epochal transition, in which the distinction between psychotherapy and pharmacotherapy is progressively getting thinner, and which helps us overcome the old dichotomy between psychology and biology.*

- Studies have been conducted on differential power of components of the doctor's manner and open placebos (Ted Kaptchuk)
- But by reducing the role of the mind on health to this general and overt level, largely relying on conditioning and expectancy, we might worry that something has been missed.

## Particular case study versus general theory

Several philosophers have wanted to indicate a difference between the *human* sciences and the *natural* sciences:

- Idiographic versus nomothetic
- Understanding versus explanation
- Some philosophers of the historical sciences look to challenge the distinction by establishing a continuity between: *cosmology, geology, evolutionary theory, palaeontology, palaeoanthropology,...*
- *...archaeology, history (?)*

For, say, Adrian Currie (*Rock, Bone and Ruin*), this constitutes one spectrum; for R.G.Collingwood, mind is neither matter nor life.

## Idiographic

Consider in the April 1957 edition of *Psychosomatic Medicine*,

J A Meerloo, 'Human Camouflage and Identification with the Environment: The Contagious Effect of Archaic Skin Signs':

*One of my patients experienced a renewal of eczema of the hands only when childhood fantasies of choking his brother returned.*

*In several patients with an emotional skin rash I found the Bible story of Jonah and the whale repeatedly appearing in their dream life as a panicky, ambivalent fantasy of skin delight and skin destruction while living in a fantasy womb.*

# Nomothetic

Now contrast this with:

A. Skrabski, M. Kopp and I. Kawachi, 'Social Capital and Collective Efficacy in Hungary', *Journal of Epidemiology and Community Health*, 57 (2003), pp. 114–19.

*A recent study from the Harvard Center for Society and Health of 12,643 subjects found that those who had what they called a 'rival' attitude had a higher risk factor for mortality than that given by smoking. Distrust and jealousy were the biggest killer, especially for men, and the best protective factor was neighbourhood cohesion. (WDPGI?)*

Evidently the early psychosomatic studies were much more in line with the case material of psychoanalytic studies, hardly surprising given the overlap of personnel.

If now medicine's drive is towards the subpersonal, to the cellular and molecular, allowing a personalised medicine, but in the sense of one tailored to, say, the patient's immune system rather than to their psyche, it would seem that the opportunity to construct an interface between medicine and psychoanalysis is limited.

And yet...

## Specific studies continue

Here's a Jungian:

The patient had a deep maternal wound. At the age of 14 she had discovered that she was the daughter of her mother's lover. However, she recollected that even as a very small child she had noticed her mother's affairs. She was always terrified that her "lawful" father would discover them and murder her mother, because he had a violent personality. Her mother had forced her to be her silent accomplice, a fact that was hard for her to reveal even in analysis.

She refused to get married but had many affairs, always breaking up the relationship upon falling in love with another man. Usually she got interested in married men until she succeeded in getting them to wreck their marriages.

During the analysis we were able to work with her hatred of men and of her mother. She had a strong, seductive defense mechanism and, at the same time, identified strongly with her mother.

During an acute migraine incident, I asked her to close her eyes and increase the pain in her head.

Denise Ramos - *The Psyche of the Body: A Jungian Approach to Psychosomatic Illness* (Verso, 2004)



Helen grew redder and redder, and the veins on her forehead became very prominent. Suddenly she opened her startled eyes, saying:

I was in a village, being judged in a public square. Someone squeezed my head with a tourniquet to make me confess my guilt.

Helen returns to the torture scene and screams to all that she is not guilty. But she rids herself of the tourniquet only when she denounces the truly guilty party: her mother. As she does so, to my

surprise, the color of her skin returns to normal and the patient attains complete and immediate relief from her migraine.

Of course, the migraine returns in a few days. But, after she confesses other “guilt” feelings, her symptoms gradually fade until they disappear completely.

# Theoretical linkage?

It would be interesting then if the theoretical outlooks of the psychoanalytic and medical perspectives could somehow be seen to meet more compatibly.

There's plenty of theory on the psychoanalytic side – what of medicine?

## New biology - new medicine

There are aspirations to reformulate medicine in a more top-down way.

I said earlier, “The Mason case, if it isn’t fraudulent, should be stunning to anyone working in medicine. ”

It was brought to my attention by the Tufts biologist, [Michael Levin](#).

- Levin sees ‘mind’ or intelligence as much more widely dispersed than in animal brains, e.g., through subsystems of the body.
- The specificity of the hypnotic suggestion from Mason targeting a single place on the body – left arm, right leg, etc. – suggests a supra-cellular know-how.
- This isn’t the false physiology of the glove line numbness of one of Freud’s hysterics.

## Cellular signaling pathways as plastic, proto-cognitive systems: Implications for biomedicine

**THE BIGGER PICTURE** Disorders ranging across drug addiction, injury, and cancer have proven difficult to definitively repair by focusing on the molecular hardware inside cells. Drug design and genomic editing face fundamental limitations of context, complexity, and cellular resistance. Fortunately, computer science and behavioral science are beginning to point the way to a transformative regenerative medicine in which pharmaceutical efforts focused on molecules will be complemented by top-down approaches that exploit the collective intelligence of cells and the native control mechanisms that establish form and function. Powerful methods of controlling complex body systems include taking advantage of their newly discovered cognitive properties: memory, problem solving, and reprogrammability. Emerging advances in placebo research, non-neural bioelectric networks, and the diverse intelligence of cells, tissues, and organs suggest that the medicine of the future may look more like a kind of somatic psychiatry than chemistry or genetics. Therapeutic interventions will communicate and behavior-shape body processes, exploiting the software of life for novel solutions to disease, injury, and aging.

# Active inference

One direct path from such an approach to biomedicine to psychoanalysis runs through what is called *active inference*.

While Levin works on biomedicine in terms of active inference,...

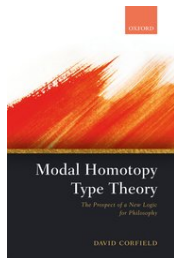
from the psychoanalytic side, we find: Jeremy Holmes, Patrick Connolly, Mark Solms, Matthew John Mellor (Bion)...

One piece of historical justification points to Helmholtz as an influence of Freud but also on the *free energy principle* of active inference.

## Panning out to other possibilities

The kinds of choices made by analysts reaching out over the years for the mathematical tools of topology and logic find their echo in the foundational dual languages of *category theory* and *type theory*.

These are two sides of the same coin, and there has been a notable advance here presented in:



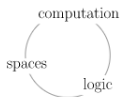
# Computational Trinitarianism/Trilogy

## 1. Idea

A profound cross-disciplinary insight has emerged – starting in the late 1970s, with core refinements in recent years – observing that three superficially different-looking fields of mathematics,

- computation/programming languages
- formal logic/type theory
- $\infty$ -category theory/ $\infty$ -topos theory (algebraic topology)

are but three different perspectives on a single underlying phenomenon at the foundations of mathematics:



(nLab: [computational trilogy](#))

## To physics

This space-logic-computation convergence extends to fundamental physics, even to string theory, see my [talk](#).



# Applied Category Theory

Now we find category theory/type theory also applied to:

*Causality, probabilistic reasoning, statistics, learning theory, deep neural networks, dynamical systems, information theory, database theory, natural language processing, cognition, consciousness, **active inference**, systems biology, genomics, epidemiology, chemical reaction networks, neuroscience, complex networks, game theory, robotics, quantum computing,...*

It's interesting then to note that over in France, Alain Connes, a very prominent mathematician, has claimed:

L'inconscient est structuré comme un topos.

À l'ombre de Grothendieck et de Lacan (2022)

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*.

Recall that 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

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

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The Centre for Freudian Analysis and Research Web Journal

manner.<sup>4</sup> 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 with CFAR:

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.<sup>21</sup> 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.

Much work is still needed to solidify this connection of the idea of a fundamental phantasy to that of a topos as logical theory.

## To conclude

No doubt we have a way to go before a convincing mathematical account of psychoanalysis emerges, but, if ever it does, my hunch would be for something category-theoretic.

Engaging with imaginative new approaches to biomedicine might well prove fruitful.