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## Clinical reasoning – a Scotoma in the medical gaze?

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Clinical reasoning is a core activity in everyday clinical work, but is also a well-developed field of research with scholarly papers, reviews, books, conferences and medical curriculum activities. In this body of knowledge, and although it remains a complex construct [1], clinical reasoning is generally defined as the cognitive processes and mental structures that physicians mobilise to decide on medical diagnoses and adequate treatment [2]. Tracing its theoretical foundations in cognitive psychology, such a definition of clinical reasoning has offered solid grounds for problem-solving and simulation approaches in medical education. However, in a 2005 review of three decades of clinical reasoning research, Norman found that:

“No empirical research has been conducted to date into the nature of reflective practice in medicine . . . Advocates of evidence-based medicine and decision analysis methods can tell us much about what should influence management decisions . . . but can tell us little about how practitioners actually weigh up the many factors, medical, social and psychological to arrive at a particular course of action.” [3]



While studies on clinical reasoning have lately expanded, the traditional view of clinical reasoning as *making a diagnosis* still prevails [4]. Yet, clinical practice contains a variety of reasoning and decision-making beyond this. Such a diversity appears particularly evident in the practice of family medicine, where family physicians ‘deliver services across the entire spectrum of care, regardless of patient age, sex or condition’, ‘integrating a unique blend of biomedical, behavioural and social sciences, while employing a diverse range of cognitive and procedural skills’ [5]. However, only a small part revolves around finding a diagnosis [6]. Even for clinical problems subject to intense research activity, the dynamic mindlines of clinical communities still

outweigh the officially sanctioned guidelines in actual practice [7]. This is an apparent paradox: we know so much about clinical reasoning, and more every year, but still we do not really understand it. How can that be?

We argue that what we know more and more about is only a minor part of what clinical reasoning actually is. A starting point for the argument can be the exemplary work of ‘What every teacher needs to know about clinical reasoning’, by Eva [8]. Here, the paper starts with a clinical case, to introduce what clinical reasoning is for the author.

This case illustrates several characteristics shared by many others used in clinical education to explain the nature of clinical practice to students. To produce such narratives is also a key competence for medical students [9]. An informal prestige hierarchy of diseases is transmitted to students and young doctors through storytelling, exam questions and course materials that promote certain kinds of problems as particularly important – and thus elevate the status of specialists working with those problems [10]. These high prestige problems are seen as a prototype of what medical problems are.

Clinical reasoning so conceptualised appears fully congruent with the biomedical and evidence-based medicine approach, and the acute-care specialised hospital as the privileged context in which physicians work and learn. The clinical case at the emergency room is commonly used as a typical example of what clinical reasoning is; a template for what to teach future doctors, communicated through published cases on prestigious medical conditions and communicated to medical students through narratives of heroic intervention as archetypes for good clinical practice. They are what young doctors are trained to look for and manage [11]. Yet how much of the spectrum of clinical problems is covered by what these cases represent?

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In their widely read book ‘Clinical Rationality’, Wulff and Gøtsche note that diagnostic reasoning is more difficult if the patient has more than one medical condition, especially if they affect each other [2]. Decision-making is more complex with children, with the elderly or with pregnant women. Migrants offer additional aspects of complexity. But these ‘deviations’ are not deviations in real life: adults suffering from comorbidities are the norm in family practice. Indeed, diagnosis is only a small part of the reasoning and decision-making clinicians engage in. Analysis of hundreds of clinical encounters in a variety of specialities shows that the prevailing archetype for a clinical decision is only one particular kind of animal in a larger zoo, and the diversity of animals in it is so large that we cannot transfer analysis and solutions from one to the other without problems [6].

The seeds of controversy have been sown. Some scholars argue that most so-called complex decisions are just being disturbed by ‘non-clinical factors’ that we should try to eliminate in making decisions. However, others stress that those factors are critical to clinical decision-making. Snowden and Boone’s Cynefin framework from leadership studies can be helpful in this debate: it outlines four different kinds of problem/context, namely the simple, the complicated, the complex, and the chaotic [12]. ‘Simple’ means that the problem has few causal factors, the outcome of these is known and specific tools for intervention in the causal chain exist. Some cases may be ‘complicated’, meaning the existence of a larger number of interacting factors and a need for more analysis before relevant action can be chosen, but still, it is possible to sufficiently analyse the situation to arrive at one path of action more beneficial than others. The clinical cases referred to above exemplify the simple and to some extent the complicated problem contexts. Sometimes simple and complicated problems are first handled as ‘chaotic’: The unconscious patient in need of life-saving therapy before a medical history can be taken and a thorough examination can be performed. A ‘chaotic’ context means to avoid certain worst-case scenarios and worry about the rest later. With this framework in mind, we would argue that the literature on clinical reasoning has a strong focus on cases where the context is either simple or chaotic.

But then there are ‘complex’ problem contexts; where not all important factors are – or can be – known, where outcomes are potentially many and poorly defined, and where points of effective intervention are uncertain, tools few and must often be adapted to the specific case. Most clinicians reflecting on a regular day in

clinical practice will recognise how much of clinical work is complex; in particular those who are family physicians and other medical doctors working in community settings. Snowden and Boone argue that complex problems must be probed to understand, and that the tools to work with the problems must be adapted and developed in practice rather than defined beforehand.

‘To a man with a hammer all problems are a nail’ goes the saying. But why may we see a nail? We all have the same physiological scotoma – the blind spot – in our field of vision; created by the entry of the visual nerve into the eye. However, we do not see a blank spot; instead our central nervous system repairs the gap in visual input by extending the input from the neighbouring zones of vision. Perhaps complex clinical problems are the blind spot of the medical gaze: Created by the very complexity of human suffering and sickness from which all medical problems are derived, but itself invisible because of our attention to styles of reasoning more aligned with simple problems. Perhaps we have not begun to unravel the mysteries of what clinical reasoning really is about for most of the problems that people in need present. Perhaps a more inclusive view of people’s suffering could be a solution to overcome the clinical reasoning paradox pointed out by Norman more than ten years ago.

### Disclosure statement

No potential conflict of interest was reported by the author(s).

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