

Self-Knowledge in Diagnosis and Self-Diagnosis

Quassim Cassam, University of Warwick, UK

1. Diagnostic error:

- (a) '[A]ny mistake of failure in the diagnostic process leading to a missed diagnosis, a missed diagnosis, or a delayed diagnosis' (Schiff et al. 2009). Diagnostic errors are one species of medical error.
- (b) Diagnostic error rates remain high in most branches of medicine (10%-15%) despite advances in medical technology (Elstein 1995; Schiff et al. 2009; Graber 2013).

2. The overconfidence hypothesis (OH): physician overconfidence is a major factor contributing to diagnostic error (Berner & Graber 2008; Croskerry 2008). Overconfidence is the miscalibration (in one direction) of one's own sense of diagnostic accuracy and actual accuracy. Overconfidence in this sense is related to arrogance and complacency (Berner & Graber 2008) and 'medical narcissism' (Banja 2005).

3. Three questions:

- (a) What kind of explanation of diagnostic error does (OH) offer?
- (b) How blameworthy are diagnostic errors due to overconfidence?
- (c) Is self-knowledge a remedy for physician overconfidence and the errors it causes?

4. Type of explanation of error:

- (a) *Personal* explanations attribute error to the personal qualities of individuals or groups of individuals e.g. carelessness, ignorance. These qualities are *epistemic vices*.
- (b) *Sub-personal* explanations attribute error to the automatic, involuntary and largely unconscious operation of hard-wired cognitive mechanisms or cognitive biases, e.g. confirmation bias.
- (c) *Situational* explanations attribute error to situational factors, e.g. time pressure, fatigue.
- (d) *Systemic* explanations attribute error to systemic factors, e.g. inadequate training, lack of resources, organizational structure (Reason 2000).

5. Epistemic vices:

- (a) Epistemic vices are character traits (e.g. arrogance), attitudes (e.g. prejudice) or thinking styles (e.g. wishful thinking) that get in the way of knowledge or impede effective practice. They get in the way of knowledge by impeding its acquisition, retention or transfer.
- (b) Epistemic vices are personal qualities, and explanations of error by reference to epistemic vices are personal explanations.
- (c) 'Vice' implies blameworthiness, and vice explanations of diagnostic error imply that these errors are blameworthy. They are the personal responsibility of those who commit them.

6. Three interpretations of the (OH):

- (a) Its explanation of diagnostic error is personal since overconfidence, arrogance and complacency are epistemic vices. Specifically, they are character traits, that is, 'complex, interlocking patterns of thought, feeling, desires, and action' (Taylor 2006; Doris 2002).
- (b) Its explanation of diagnostic error is sub-personal since overconfidence, arrogance and complacency are sub-personal cognitive biases (Croskerry & Norman 2008).
- (c) Its explanation of diagnostic error is systemic to the extent that overconfidence, arrogance and complacency are selected for by medical culture, training and recruitment. They are 'professional' rather than personal vices (Greenhalgh 2016).

7. Three suggestions:

(a) Overconfidence, arrogance and complacency are personal qualities of some (not all) physicians and may be more prevalent in some specialisms than others. They are (i) patterns of thought, feelings, desires and action, (ii) different people have these qualities to varying degrees, and (iii) they are ‘part of the agent that can be morally evaluated’ (Holroyd & Kelly 2016).

(b) Although overconfidence, arrogance and complacency are personal qualities, they are caused in part by cognitive biases (e.g. confirmation bias), some of which are sub-personal (Kahneman 2011). They also have their origins in the culture of medicine, where ‘there is a prevailing censure against disclosing uncertainty to patients’ (Croskerry & Norman 2008). Epistemic vices that are built into the culture of medicine, or selected for by medical training and recruitment, are *also* professional vices.

(c) There therefore is an element of truth in all three interpretations of (OH). Explanations of diagnostic error by reference to overconfidence, arrogance and complacency are *personal* (to the extent that these are personal qualities), *sub-personal* (to the extent that these personal qualities are grounded in sub-personal biases) and *systemic* (to the extent that they are a reflection of the culture of medicine).

8. Three questions about blameworthiness:

(a) Can we be blameworthy for factors over which we have no control? What type of control is required for blameworthiness? (Holroyd & Kelly 2016).

(b) Do we have any control over those personal qualities (e.g. character traits) that are responsible for diagnostic error?

(c) Do we have any control over the sub-personal, situational and systemic factors that are responsible for diagnostic error?

9. Self-knowledge in theory:

(a) Self-knowledge in this context is knowledge of one’s own epistemic vices and cognitive biases (Cassam 2014).

(b) Self-knowledge puts one in a position to diagnose one’s own diagnostic errors, identify their sources and avoid making the same mistakes in future. Self-knowledge leads to self-improvement.

(c) Self-knowledge is acquired by epistemic self-diagnosis. Its inputs include metacognition, feedback and external review.

10. Self-knowledge in practice:

(a) Overconfident and complacent individuals may not be motivated to subject themselves to epistemic self-diagnosis.

(b) The epistemic vices and cognitive biases that lead to diagnostic error are no less likely to affect epistemic self-diagnosis (Horton 2008). *Stealthy* vices and biases are ones that impede their own detection (Cassam 2015). Not all vices are stealthy (e.g. carelessness) but some are. Overconfidence and complacency are stealthy: they impede their own detection by self-diagnosis: ‘clinicians’ overconfidence in their own judgements may be one of the most powerful factors preventing debiasing’ (Croskerry et al. 2013b).

11. Self-knowledge and self-improvement:

(a) Knowledge of one’s own vices and biases is difficult but not impossible.

(b) Self-knowledge is no guarantee of self-improvement. Knowledge of one’s own cognitive defects is no guarantee that one will be motivated to do anything about them or be aware of the procedures and strategies needed to overcome them (Croskerry et al. 2013a).

12. The paradox of self-knowledge:

(a) The more that self-knowledge is necessary the less it is possible. Individuals with the epistemic virtues necessary for self-diagnosis probably don't need self-diagnosis.

(b) It may be more productive to focus on systemic and situational causes of diagnostic error and to focus on tackling them.

References and further reading:

- Banja, J. (2005), *Medical Errors and Medical Narcissism* (Sudbury, Mass.: Jones & Bartlett).
- Battaly, H. (2014), 'Varieties of Epistemic Vice', in J. Matheson & R. Vitz (eds.), *The Ethics of Belief: Individual and Social* (Oxford: Oxford University Press): 51-76.
- Berner, E. & Graber, M. (2008), 'Overconfidence as a Cause of Diagnostic Error in Medicine', *The American Journal of Medicine*, 121: S2 – S23.
- Bosk, C. (2003), *Forgive and Remember: Managing Medical Failure*, 2nd edition (Chicago: University of Chicago Press).
- Cassam, Q. (2014), *Self-Knowledge for Humans* (Oxford: Oxford University Press).
- Cassam, Q. (2015), 'Stealthy Vices', *Social Epistemology Review and Reply Collective*, 4: 19-25 [Open access].
- Cassam, Q. (2016), 'Vice Epistemology', *The Monist*, 99: 159-180 [Open access].
- Croskerry, P. (2003). 'The Importance of Cognitive Errors in Diagnosis and Strategies to Minimize Them', *Academic Medicine*, 78: 775-780.
- Croskerry, P. & Norman, G. (2008), 'Overconfidence in Clinical Decision Making', *The American Journal of Medicine*, 121: S24 – S29.
- Croskerry, P. (2009), 'A Universal Model of Diagnostic Reasoning', *Academic Medicine*, 84: 1022-1028.
- Croskerry, P. et al. (2013a), 'Cognitive Debiasing 1: origins of bias and theory of debiasing', *BMJ Quality & Safety*, 22: ii58-64.
- Croskerry, P. et al. (2013b), 'Cognitive debiasing 2: impediments to and strategies for change', *BMJ Quality & Safety*, 22: ii65-ii72.
- Doris, J. (2002), *Lack of Character: Personality and Moral Behaviour* (Cambridge: Cambridge University Press).
- Evans, J. & Frankish, K. (2009), *In Two Minds: Dual Processes and Beyond* (Oxford: Oxford University Press).
- Gawande, A. (2001), 'Final Cut: Medical arrogance and the decline of the autopsy', *The New Yorker*, 19 March 2001.
- Gorovitz, S. & MacIntyre, A. (1975), 'Toward a Theory of Medical Fallibility', *The Hastings Center Report*, 5: 13023.
- Graber, M. (2013), 'The incidence of diagnostic error in medicine', *BMJ Quality & Safety*, 22: ii21-ii27.
- Greenhalgh, T. (2016), 'Virtues and Vices in Evidence Based Clinical Practice', http://www.cebm.net/5395-2/#.Vq6l1WsGI_s.twitter
- Holroyd, J. & Kelly, D. (2016), 'Implicit Bias, Character, and Control', in A. Masala & J. Webber (eds.) *From Personality to Virtue* (Oxford: Oxford University Press): 106-33.
- Horton, K. (2004), 'Aid and Bias', *Inquiry*, 47: 545-61.
- Kahneman, D. (2011), *Thinking, Fast and Slow* (London: Allen Lane).
- Reason, J. (2000), 'Human Error: Models and Management', *BMJ*, 320: 768-770.
- Schiff et al. (2009), 'Diagnostic Error in Medicine', *Archives of Internal Medicine*, 169: 1881-1887.
- Taylor, G. (2006), *Deadly Vices* (Oxford: Oxford University Press).