

## Empty Thoughts and Blind Concepts

Pradeep A. Dhillon

*University of Illinois at Urbana-Champaign*

In his essay “Intuition in Education: Teaching and Learning Without Thinking,” Leonard J. Waks has reopened the discussion of an epistemological issue which has gone in and out of favor, even as the term “intuition” has changed in meaning, in the history of Western philosophy. The rapidly developing, and increasingly accessible, findings of psychological and neuro-scientific research motivate his efforts towards making the topic of intuition worthy of philosophical inquiry within educational contexts. The pedagogical outcomes entailed by an interest in intuition are almost by definition unpredictable; a point insufficiently addressed by Waks. In the end his efforts at making the case for intuition rely on the subordination of rational processes to the extent that more fully neuro-scientific, philosophical, and phenomenological accounts would not support. These limitations, however, in no way undermine the significant new direction of educational research Waks has pointed us towards. The implications for educational practice in following such a line of inquiry could be groundbreaking.

Waks rightly notes that we can trace the problem of intuition to Plato and Aristotle. In the *Posterior Analytic*, Aristotle claims that the primary premises of scientific inquiry are apprehended intuitively. In *De Anima* he goes on to argue that noetic, or abstract, knowledge emerges from sensible or, as it came to be known after Alexander Baumgarten, aesthetic experience. He cautions us, however, to keep in mind that, while discursive and intuitive ways of knowing are to be thought separately, they are not, in fact, separate. In disregarding Aristotle’s warning, Waks’s argument for the role of education in intuition begins to falter.

The challenge facing the Western epistemological tradition since Aristotle has been to not only recognize the role of thought and intuition in epistemology but also, to describe the mechanisms that unify these two modes of knowing. What we may now term the Cartesian-Lockean debates that arose subsequently reflect the choices made in favor of one epistemic pole over the other — the conceptual over the sensible — in thinking about these matters. In the *Critique of Reason* Kant continues this effort and seeks to reconcile intuition and thought while emphasizing the paradoxical nature of intuitive knowledge. On his account, intuitive knowledge retains a priori elements even as it relies on sensible experience.

Kant’s philosophical treatment of intuition sits squarely within the Aristotelian tradition even though he reconfigures it to combine its constitutive rational and perceptual aspects. In refusing the opposition between rational and perceptual access to knowledge he seeks to achieve a balance between them. That is, he seeks to describe their joint epistemic role without privileging one or the other. This balance was necessary for the general epistemological problem posed in the first *Critique* namely: *how are synthetic a priori judgments possible?* Such judgments, Kant argues, synthesize concepts with sensible intuitions. Intuitions for Kant, as

already mentioned, are heterogeneous, but they still possess an a priori intelligible character.

A neuro-scientific account squares well with Kant's philosophical findings. Roughly speaking we could say that the brain has both modular and dynamic properties. Or, using medical parlance, we could say the brain exhibits functional organization with interconnections between locations. In addition, as the neuro-physiologist, William Greenough, among others, has shown us, synaptic connections are plastic.<sup>1</sup> Thus we have an account that structurally limits what we can know even as it remains open-ended regarding the possibilities of knowledge in response to didactic and environmental teaching and learning. Furthermore, taking such a neuro-scientific approach can help explain change in individuals as well as the diversity that exists within populations. These neuro-physiological processes provide the "behind locked doors" explanations noted by Waks in this groundbreaking essay.

However, taking such an approach places serious limits on what we can know even as it supports the epistemic possibilities that excite Waks. Moreover, his hopes remain overly optimistic because regardless of how much you drill and train students to enable the internalization of knowledge systems the use of such systems in blindingly quick and creative responses to problems remains unpredictable. In other words, while we can prepare students diligently to be primed to respond quickly and appropriately in learning and teaching situations, we can never predict who will respond "intuitively," and how, in certain situations. That is, even the same individual may not always respond in the manner Waks seeks to educate towards. In the end, then, his hopes, while being worthy of pedagogical attention, remain too optimistic and deterministic.

In sum, I am sympathetic towards, and deeply appreciative of, the broad programmatic, philosophical proposal for research presented by Waks. I remain skeptical regarding the success of his approach for a variety of reasons not least of which turn on the details of the philosophical, scientific, and educational accounts that he offers in support of his proposal for educating intuition. His educational efforts remain tied to controllable educational outcomes even though his entire suggestion that we educate with the purpose of developing intuition is motivated precisely by his concern regarding the contemporary move towards tying educational practice too tightly to outcomes.

This problem stems, I believe, from the persistence in his account of the distinction between conceptual thinking and intuition. This leads him to support the thesis that intuition exists without thinking, thus placing him squarely on the Lockean pole of the debates that arose out of Aristotle's first mention of these two ways of thinking. What is ignored is the caution Aristotle sounded regarding their separation. It was not till Kant that this caution was explicitly heeded providing an account of intuition that rests on both concepts and intuition. Furthermore, attending to neuro-physiological descriptions of learning with greater attention would help underscore the importance of proceeding with this line of inquiry in a manner that scores the interdependence between conceptual thoughts and intuition.

Such philosophical and scientific attention would lead Waks away, for example, from thinking about memory as a database from which information can be retrieved on demand. While this metaphor is often used in talking about memory, it is misleading for acts of memory are far more constructive than this metaphor would allow. In other words, to quote Kant: “Thoughts without content are empty, and intuition without concepts are blind”<sup>2</sup>; hence the title of this response.

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1. William Greenough, “The Possible Role of Experience: Dependent Synaptogenesis, or Synapses on Demand in the Memory Process,” in *Memory Systems of the Brain*, eds. Norman M Weinberger, James L. McGaugh, and Gary Lynch (New York: Guilford Press, 1985).

2. Immanuel Kant, *Critique of Pure Reason*, trans. Norman Kemp Smith (London: Macmillan, 1978), 75.