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Lost in wonder:

A response to Schinkel's 'deep' wonder in education

Abstract

In this paper, I aim to clarify the role of 'wonder' in education. Most of us who work in education want to provide valuable experiences for our students, and we want them to be driven by intrinsic values such truth and recognition of the dignity of human existence. However, whilst I echo many of the sentiments espoused by advocates of the utility and ethical significance of wonder, I would like to suggest that some recent developments—and in particular, Schinkel's argument that 'deep' ('contemplative' or 'cosmic') wonder has a 'fundamental' role in education is misconceived. This is, I suggest, because any concept deployable within educational spaces (whether formal or informal) *must* pay due to regard to the conceptual constraints of the concept of 'education'; that is, they must primarily attend to the role of 'learning'. Schinkel's proposals are, I suggest, vulnerable to a critique of sentimentalism and excessive romanticism. As such, they offer little in terms of practical import for educators. As I will propose, if we are to take 'wonder' seriously in educational contexts, we must pay attention to the *purpose* of wonder as an epistemic emotion; namely, aiming for knowledge and understanding and getting there requires sensitivity to practical know-*how* and conceptual competence.

Introduction

This paper was born from a truly wonderful experience I had at the 'Wonder, Education, and Human flourishing' conference facilitated by Anders Schinkel in 2019. The range of speakers was incredible, bringing together inspiring minds on an important topic. However, as Professor Todd Kashdan (one of the keynote speakers) suggested when we met at the conference, there is risk of this kind of event becoming somewhat insular, self-serving and fluffy: 'We need to avoid a situation where we're

all together saying "Wonder is great, isn't it great, yes it's great"' (paraphrased). As it happens, the conference was not all like that. Nonetheless, in this realist, but sensitive, spirit, I would like to explore the central concept of interest—specifically, Schinkel's 'deep wonder'[1]—to reveal some important limitations, but also some neglected possibilities, of a meaningful conception of wonder and its role in education. My central argument is that any conception of wonder that fails to recognize the centrality of *learning* has little or no grounds for making claims for the prospects of the concept in education.

That being said, there is a role for a kind of 'deep wonder' (which is somewhat muted by Schinkel and others) that is defensible in educational contexts, wonder as *inquiry*. This is a conception concerned primarily with making sense of the world through conceptual mastery, 'knowing-how' as opposed to 'knowing-that' forms of knowledge.[2] It is an approach to wonder that is likely to be of more use for educators. It is driven by, and supports, the educational purposes of learning, insight, and human 'understanding'; this I suggest, is no less wonderous. Relatedly, Hobbes (1978: book XII) suggested that the 'joy' or 'admiration' that human beings feel is 'peculiar to men' who, when faced with something unknown, often 'seek to know whence it came and to what use they can put it'. In other words, wonder drives human beings towards curiosity with a thirst to know or understand. Hence, there is utility in a defence of 'deep wonder' in education in terms of its role to motivate learning, after having felt lost, confused, or confounded. Whether this distinction (an adapted conception of Schinkel's 'deep wonder') is indeed useful will be up to readers. But it is certainly one possible defence on which Schinkel may rely. The difficulty is whether this form of 'deep wonder' is in fact any different from what Schinkel terms as 'active wonder'. This

[1] Schinkel does not strictly define 'deep wonder' in his paper. He does, however, hint at what it is, suggesting that it has an affective core as a response to 'mystery' and leaves us 'lost for words' (see Schinkel 2017: 538, 544, 545; see also endnote 15).

[2] *Knowing-how* is of course Ryle's concept originally. However, also relevant here is Polyani's related notion of 'tacit learning'. I have applied these concepts in this paper but do not have scope to explore these in detail here in this paper. For further reading, I suggest Ryle 1946; Polyani 2009; Hacker 2013; Arnal & Burwood 2003, Winch 2009.

will form part of the discussion in the following sections, and I hope to have resolved this at least sufficiently by the time we get to the concluding remarks.

A brief exploration of wonder as a concept

The concept of wonder is related to other concepts such as curiosity, awe, exploration—even terror. As Lloyd has suggested:

> The history of wonder is not the simple trajectory of a single concept. It reflects a variety of ways of thinking about knowledge. It has been intermingled with the history of other emotions such as awe and dread; it has also been caught up in changing attitudes towards imagination. It has been associated with surprise and amazement, and hence sometimes with stupor'. (Lloyd 2018: 2)[3]

The English concept *wonder* is rooted in Old English 'wundor*'* (and in Proto-German before then). It is suggestive of being witness to an 'astonishing or marvellous thing' where one is left 'perplexed in astonishment' (Hoad 1996: 544). It should be no surprise, then, that modern philosophers like to connect our concept of wonder with the ancient Greek concepts of *aporia* (confusion, puzzlement) and/or *thaumazein* (awe, amazement).[4] To elaborate on this point, I will briefly explore some of the key passages from the Platonic dialogue*, Theatetus*, where Socrates states:

> Theodorus had a true insight into your nature when he said that you were a philosopher; for wonder is the feeling of a philosopher, and philosophy begins in wonder (Plato 2017: 155d)

The context is that Theaetetus (a neophyte) is being initiated into a kind of thinking which is relentlessly rigorous and adversarial in its persistent mode of questioning. Every attempt the young man makes to define knowledge is demolished by Socrates. Theaetetus is perplexed as to why opposite predicates like 'large' and 'small', 'heavy' and 'light' seem to have a paradoxical property that when you find a thing to which one

[3] cf. Pedersen 2020 for an exploration of the role of Lovecraft's fiction as a catalyst for 'dark' wonder and its possible role in education.

[4] Cf. Hadzigeorgiou 2001, 2020; Lloyd 2018; Schinkel 2017, 2021.

of the attributes applies, the opposite can apply equally as well. The Greek word used for wonder in those dialogues is 'thaumazein'.[5]

According to John McDowell's helpful notes on the *Theaetetus*, the specific wonder that Socrates speaks of is a kind of 'puzzlement' that is more specifically related to the feeling one gets when one notices 'a conflict among theses all of which seem plausible' i.e., opposite propositions apply subject to context (Plato 2014: 118). This is very closely tied to the Greek concept of *aporia.* The suggestion is that Socrates is challenging a conceptual fallacy, namely, a representationalist understanding of words conceived as corresponding uniformly with reality. Perhaps more fundamentally, Socrates is undermining a dogmatic picture of knowledge itself, where the world is seen as consisting of immutable facts. Hence, what is at stake here is a conceptual confusion (typically encouraged by incoherent thoughts, but especially by the vices of dogma or closedmindedness).[6] In short, wonder is roughly seen as the emotional response to puzzlement. And this is borne out by Theaetetus in the text where he talks about feeling 'dizzy' from these apparent paradoxes. It is also important to note, however, that Aristotle uses the Greek concept of *thaumazein* to apply to rudimentary (even infantile) human thinking. Aristotle says:

> That it is not a productive science is clear too from those who first turned to philosophy, since it is because of wondering at things that humans, both now and at first, began to do philosophy. At the start, they wondered at those of the puzzles that were close to hand, then, advancing little by little, they puzzled over greater issues. (Aristotle 2016: Book I, Part II, 928b)

The 'greater issues' that Aristotle is talking about are matters of knowledge and 'science'. The implication is that to experience mature wonder one needs to move *beyond* the experience and towards a given knowledge or insight. The element of 'surprise' becomes more and more difficult as one gets older, however. Perhaps the older one gets (equally, the older human civilisation becomes) the less novelty there

[5] In the text there is an interesting play on words where there is a discussion of *Thaumas* the father of Iris (a representation of the rainbow; cf. Hesiod, *Theogony* 265) hinting at our amazement at the wonders of nature.

[6] This is an important point that I will draw on later.

is available to us as we will have learned a great deal since we were children. This does not diminish the concept of wonder, rather, it enrichens it to the point of maturity.

Further, I don't think that Aristotle is merely highlighting a single concept, rather 'aspects' or conceptions of wonder are similarly applied but for distinct emphases.[7] Each aspect revolves around the notions of feeling in one sense 'wonder-struck', stunned etc. (e.g. by nature, existence, or the nature of knowledge, the mind, etc.) and in another, feeling perplexed to the point of curiosity in order to escape ignorance in some form. The implications are that because mere amazement is seen as somewhat infantile or unintelligent, both Socrates and Aristotle emphasize the epistemic elements through their use of *thaumazein*. In other words, a lack of knowledge and understanding is the cause of an emotional response (i.e. for some, anxiety driven from experiencing epistemic vertigo; for others, a sense of romance and awe). The experience identified by both Socrates and Aristotle is that wonder is like a sign that one is lacking knowledge, or indeed lacking a way to escape ignorance (at least in the immediate sense). Hence the target and purpose of wonder is knowledge, understanding, and transcendence. Without that drive for the pursuit of knowledge, wonder (so conceived as a form of mere astonishment) is banal, meaningless, even infantile.

Of course, we don't need to follow ancient Greek philosophers and we are perfectly able to develop our own conceptions. These aspects of wonder have been explored over recent years. For example, Lloyd (2020) talks about 'a kind of mental restlessness —of a mind wandering, uncertain of its bearings'. Vasalou (2020) speaks about 'cosmic' or 'existential' wonder as form of wonder that 'finds its object in the very existence of the world' and our relation to it; there are many others. However, I would like to focus on Hadzigeorgiou's (2020) conception of wonder, because he draws on a sharp distinction between the two interrelated aspects of wonder discussed so far (e.g. epistemic and affective). When taken too far, this causes problems for Schinkel's approach to wonder. For example, Hadzigeorgiou suggests that:

[7] See Baker 2004 for a thorough explanation of the Wittgensteinian notion of 'aspects' and the related distinction between *concepts* and *conceptions*.

> My own conception of wonder, as a mental state which is characterised by aporia (a sense of perplexity and puzzlement due to one's ignorance) and/or thaumazein (admiration), captures two faces of wonder and also both the cognitive and the affective component of it. (Hadzigeorgiou 2020: 189)

Hence, wonder is seen to capture a particular destabilizing form of emotional experience that renders a person somewhat lost for words (initially), or as a way to respond and attend to the world (or our experience of it), as Vasalou (2020) has suggested. It is of course true that human beings are by nature not merely rational beings. We are sensory, emotional, spiritual, and perceptive creatures. We feel and respond (at times) emotionally to the conditions of existence, and we may well wonder (at times) what our place is in it all. In other words, we can become *struck* with wonder, 'dazed and confused'.

So far so good, there is not anything particularly problematic in all this. But *why* is any of this important for education? There is little doubt that wonder can indeed be a catalyst for learning by remining us of our limitations, as Schinkel (2017: 539) has suggested. This is because it entails a (potentially) transformative or epiphanic moment where one may self-reflect on one's own ignorance or lack of understanding. A problem occurs if it is then suggested that there is some educational utility in eliciting the distinct affective state of 'deep wonder'. Schinkel (p. 540) associates this form of wonder (so distinguished from 'active' wonder) as an emotional response to 'mystery'. It is, paraphrasing Sinclair and Watson (2001), the 'core energy which takes us along the pathway from the unexpected moment of aesthetic delight through to the experience of intrinsic satisfaction and intelligibility.'

As I will aim to highlight, although we can view two aspects of the concept of wonder, is not at all helpful to see wonder as parcelable in this way for educational purposes as Schinkel proposes. The epistemic and affective aspects roll together and are meaningful only when taken together. This has important implications for any assessment of whether a conception of 'deep' wonder (conceived in the distinctive affective sense) is educationally important (as claimed in Schinkel 2017). Before returning to Schinkel's conception of deep wonder, it will be helpful to explore some of P. M. S. Hacker's conceptual work on the role of emotions. This will assist our

understanding, and highlight why the specific affective distinction that Schinkel draws may be misconceived.

Reason and emotion: some useful categories

Hacker introduces the importance of emotions as follows:

> A life bereft of emotion would not be worth living, for it would be a life without love or affection, lacking joy and delight, wanting enthusiasm and excitement. It would be driven by arbitrary wants, inclinations, and natural appetites. It would be a life in which we encountered the works of nature and of man without awe or wonder, without curiosity or admiration. (Hacker 2018: 3)

Hacker highlights the role of emotions in providing a sense of meaning and value in life. Without this diverse range of emotions, including wonder, one's life can feel limited, stunted, or even worthless. This insight is of course shared by poets, philosophers, artists, and musicians from across the ages. To use a metaphor, emotions are the 'colours' on the palate of life that help to bring depth and significance to the human experience of living. No wonder then that we philosophers value them. What I would like to focus on for a few moments, however, is Hacker's distinction between momentary and episodic emotions and where the general concept of wonder sits within that framework. This should help to highlight some of the specific features of wonder in general or indeed, the form of 'deep' wonder that may elicit the feelings of awe or anxiety.

Hacker distinguishes between temporary and persistent emotions, further still, between 'momentary' and 'episodic' emotions.[8] He draws this distinction, partially, to help to highlight a misleading contrast between 'reason and the emotions' that is formed from the role of temporary emotions (2013: 31). For example, he suggests that despite what is commonly thought, 'emotions are bound up with reasons for action,

[8] Hacker notes that enduring love, joyful pride in children, or generalized fear of one's life are examples of emotions that 'lack a genuine duration' (Hacker 2018: 31).

with specific patterns of intentional action and with motives' (2013: 22). Hence, when we wonder with awe at the meaning of life or the human condition, the affective states associated with these musings are 'reason'-centred. We care about understanding and wish to know why we feel in particular ways when faced with the magnitude of nature and our feelings or responses to existence. Hacker's notion of 'momentary' (temporary or fleeting) emotions includes what he calls 'emotional perturbations', whereas episodic emotions typically do not. For example, such perturbations include the onset of overwhelming grief, a blush of embarrassment, a flood of anguish, sensual passion, or fits of rage. The relationship between momentary emotions and wonder is clear. Indeed, the central logical features here include elements of involuntariness and a sense of being overwhelmed by emotion beyond what may be controlled or even rationalized in a given moment. But this does not mean that the *cause* of the emotion is not reason-centred and relates in some existential sense to the condition of human beings outside of an epistemic framework.

I find it interesting that Hacker sees the curious aspect of wonder as an episodic emotion, and therefore, not entailing an emotional perturbation *per se*.[9] Hacker does clarify, however, that there is no 'hard and fast' line between these distinctions. He categorizes the related concepts of wonder and curiosity as 'epistemic emotions' that need not require any hedonic or anti-hedonic features (Hacker 2018: 25), that is, they need not entail any affective aspects at all. In other words, whether we respond emotionally to some of the big questions explored (e.g., about existence) is more a matter of *temperament* or disposition rather than logical necessity. Of course, it is worth noting that this does not mean that there are never any affective aspects, for example, immense joy in the discovery of a new concept, idea, or breakthrough (a 'eureka!' moment). However, there is an aspect of wonder that is more closely related to 'awe' (and thereby, to Schinkel's conception of 'deep' wonder or Vasalou's conception of 'cosmic' or existential wonder). Such emotions do indeed (typically) accompany what Hacker terms 'agitation'. For example,

[9] Hacker's notion of 'episodic' emotions that typically do not accompany a perturbation, includes some vices such as pride or envy, but also contentment, curiosity, and importantly, the general concept of wonder (as in wondering why x is the case).

> Agitations may transmute into long-standing emotional attitudes and sentiments… One may have been awe-struck by something sublime in nature, and this immediate response may give rise to the sentiment that it is awe-inspiring (Hacker 2018: 16).

This fits well with the framework for forms of wonder associated with the ancient Greeks (particularly *thaumazein* but also *aporia*). Part of the problem is that Schinkel suggests that 'deep' wonder entails an 'an appreciation of things for their own sake' (Schinkel 2017). In contrast to the epistemic or inquisitive focus of the Greek conceptions explored earlier, or indeed Hacker's frameworks, Schinkel, like Hadzigeorgiou (2020), draws a sharp distinction between the affective and the epistemic aspects of wonder, but takes it even further:

> …deep or contemplative wonder, which is not inherently inquisitive like active wonder [is] a response to mystery, [which] may leave us lost for words. Claims for wonder's importance to education and science often do not distinguish between the two, but whereas for active wonder that importance seems obvious, this is much less so for deep wonder, which by its very nature rather seems to be anti-educational. (Schinkel 2017: 538)

Schinkel has some sympathy with those who might see 'deep' wonder as anti-educational, but then he later argues that it is in fact 'fundamental to education or to scientific inquiry'. This is quite a claim, and it needs further reflection. I will now briefly explore what exactly Schinkel means in proposing deep wonder as a possible contender for the 'foundation' of educational inquiry. I will do this by considering some of the problems with Schinkel's implicitly dualist picture of 'otherness' and the way in which he construes the processes of 'deep' wonder for educational purposes, as seen through the lens of what I will term as Schinkel's 'metaphysics'.

The metaphysics of Schinkel's 'deep wonder'

There appears to be a surreptitious presumption of the primacy of metaphysics in much of the literature about wonder and perhaps Schinkel is an example of this trend in romanticism. In using the term 'metaphysics', I mean to outline a form of dualism coupled with linguistic representationalism where concepts are seen to be

representative of an external reality 'out there'. The quest to understand the nature of certain apparently enigmatic concepts like wonder, and particularly the relationship between mind (the internal, subjective, psychological realm of 'being') and matter (the external realm, conceptualized as the world of concrete facts and reality) is evidenced in some of the language at play in the literature. For example, for Schinkel, that form of wonder leaves us 'maximally aware of the value of the *object*, and only minimally aware, if at all, of its relationships to our own plans' (my emphasis). This leads Schinkel to consider the tensions between 'passive' and 'active' wonder, namely, between a contemplative and a curious kind of wonder—each nonetheless consisting in a kind of 'experience'. As Schinkel outlines:

> Deep wonder might be described as a mode of consciousness in which we experience that which we perceive or are contemplating as mysterious or other, fundamentally beyond our powers of comprehension, yet deeply worthy of our attention for its own sake; in which the limits of our understanding and what we could ever fully grasp are foregrounded; and which engages us on all levels—emotionally, intellectually, aesthetically, and strongly existentially. It is a mode of consciousness, a way of being aware of the world, we are often 'thrown' into, but that we may also cultivate as a disposition. (Schinkel 2017: 552 n.15)

Schinkel highlights the appearance of a 'paradox' with learning, in proposing that language 'lags behind experience' (p. 542). He suggests that the experience is, in important senses, ineffable or inarticulable. However, as Peter Winch has pointed out:

> We cannot say then... that the problems of philosophy arise out of language rather than out of the world, because in discussing language philosophically we are in fact discussing what counts as belonging to the world. Our idea of what belongs to the realm of reality is given for us in the language that we use. The concepts we have settle for us the form of the experience we have of the world. (Winch 1990: 15)

In other words, for human beings at least (as language-using creatures), our experience of 'reality' is mediated through conceptual understanding.[10] This is worth exploring further in context of the various *uses* of 'wonder' which, as I will suggest, all have an epistemic motivation at their centre.

Firstly, it is clear that the word 'wonder' can mean all manner of things, not least some of the following:

- Lost in wonder (version a) (perplexed/confused)
- Lost in wonder (version b) (in awe, bedazzled)
- In deep wonder (same or similar to version b above, being immersed in the experience)
- 'X' is a wonder (something to marvel at)
- I wonder whether p (curiosity)

These *uses* suggest a multiplicity of related meanings and concepts, not at all a unified concept. As Schinkel suggests, the complex uses could be linked in a family-resemblance sense—that is, in a loose but connected way with some shared features as might typically be expected of members of a *family* (Schinkel 2017: 541).[11] This is all well and good. Schinkel seems to go further to bridge these competing conceptions —wonder as experience (passive, receptive) versus wonder as inquiry (active)—by connecting them through a loose theoretic model that proposes that these conceptions of wonder *together* form part of an overall 'learning process' with the feeling of being 'lost' at the outset (see Piersol 2014). Here his framework makes perfect sense because Schinkel rightly brings these experiences, emotions and motivations together. The problem, I suggest, is partially that he sees 'deep' wonder as being valued in its own right (perhaps as an *attitude* to life). Aside from the problem that this seems rather reductive, it is problematically to see deep wonder as a *distinct* affective

[10] It is worth noting here that I do not mean to limit conceptual understanding to codified written language. Following Wittgenstein's notion of a 'language-game' (see Wittgenstein 2009: §23), the rules of our linguistic and conceptual practices are intertwined with (as opposed to distinct from) our rules of behaviour, and both are contextualized within our particular 'human' form of life.

[11] Also see Wittgenstein 2009: §§67–77 for Wittgenstein's description of a 'family' resemblance concept. See also Baker and Hacker (2009) for an authoritative exposition.

pedagogical tool to be used instrumentally to further the aims of education in some mysterious sense. For example,

> … the goal of the understanding and the effort to understand in this case [the case of loving, romantic relationships] is not (and should not be)—at least not solely—practical in nature and also not just to satisfy curiosity or a desire to understand. It is, rather, the reverse, namely to keep alive the wonder, the fascinating not-knowing, the mystery—and thereby also the spark that keeps love alive and lively. (Schinkel 2017: 549)

Keeping the 'spark' of wonder alive is about as ambiguous as it gets. Who knows what this would mean for wonder in practical terms *if* we conceive of wonder in terms of Schinkel's 'deep' wonder. The educationally important element of this implicit theory appears to be purely in terms of the uses of deep wonder to act as a force for *motivating* students to learn more, by discouraging dogmatism, thereby encouraging an 'opening' up of the world around them and nurturing a 'love' for human experience itself. Again, this is all fine *if* we conceptualize wonder more generally as a package of interrelated motivational experiences. However, as alluring as such romanticized notions of wonder are, it remains far from obvious what such a learning process would look like *in practice* amongst a diversity of student temperaments, attitudes, and dispositions. Using some examples of catalysts for deep wonder directly from Schinkel (2017), I will now evaluate whether there are any genuine prospects for developing deep wonder as a pedagogical tool.

Lost in wonder

In Schinkel's analysis, there is an implicit assumption of the universality of deep wonder, that given the chance we might all respond to the same stimuli in similar ways. One way to see some of the problems of such a view of deep wonder is to explore the examples which Schinkel offers as exemplars for the stimuli of deep wonder. For example, Schinkel discusses:

1. The 'vastness of space' (Schinkel 2017: 543)
2. The 'nature of God' (p. 543)

3. The 'meaning of life' (p. 543)
4. The 'nature of gravity' (p. 543)
5. The 'the universe and all it contains' (p. 545)
6. The 'the mystery of quality and meaning' (p. 546)
7. The 'bare fact of existence' ('Being' in Heideggerian terms)—'that there is something rather than nothing' (p. 546)
8. The 'historical depth' of (pre) history of human life & civilization (p. 546)
9. The 'nature of organic life – i.e., beauty and mysteriousness of animals, plants living side by side human beings' (p. 546)
10. The 'immensity of things' (p. 549)

Each of these examples carry an allure of 'mystery'. Nevertheless, all suggest a particular *picture* of the world (a way of seeing), a specific disposition in the inquirer. I can see what Schinkel is suggesting here because any brief study of the natural and social history of human beings will show that these topics are of fundamental importance to us as a species and that some of the most significant contributions to human culture (architectural, literary etc.) are related to these grand and cosmic themes. It is also easy to see that these kinds of questions relate to, in particular, *children's* sense of wonder. But what is far from obvious is whether many would wonder at such things as the nature of gravity, the meaning of life or whether God exists, and if they did, what would be the educational element? These kinds of questions are no doubt important to *some*, but not to all; they form in the minds of *some* humans who have *particular* kinds of dispositions and from *particular* kinds of educations or upbringing. Wonder—even deep wonder—*at* the nature of existence can in fact be equally like the wonder at the workings of machinery, or the wondering at the organs of a beetle under a microscope. In other words, though for some a romanticized conception of wonder might elicit a deep or propound experience, wonder is in many respects perfectly *ordinary*, and in that sense, it is a widely held practice as opposed to a *deep* or transformative experience.

Unless, of course, Schinkel is speaking of the kind of transformative 'deep' wonder that is elicited from spiritual, religious, or psychedelic experiences. That approach should be generalizable, at least in principle. However, it is completely inappropriate to encourage these experiences within educational settings. Crucially, Schinkel himself goes out of his way to distance himself from contributing to debates in religious or spiritual education *per se* because he wants to emphasize the '"spiritual" dimension in *all* education' (Schinkel 2021: 6, my emphasis).[12] This seems to be a case of wanting your cake and eating it. It is an exercise in 'concept-stretching' the notion of education beyond its meaningful limits.[13]

Because of the logical relationships between words, concepts and practices, the logical frameworks for the meaning of concepts are interconnected, interwoven, interdependent, and limited in important senses. The way we use and master our words and concepts is indicative of what Hacker (2015: 12) terms an 'open-ended series of interlocking language-games', but there is no contradiction in the acknowledgement that language-use can be both rule-governed, i.e. fairly stable, and yet 'elastic' in another sense. Our use of words shifts with pragmatic need, cultural favour, as well as scientific and technological progress (cf. Hacker 2007: 40; 2013: 268). Uses of the concept of wonder belong to a specific cultural history and these may well no longer perplex the human being of the future. As Wittgenstein has stated: 'In order to get clear about aesthetic words you have to describe ways of living' (Wittgenstein 1967). What this statement means is that in order to understand the use of a given word (i.e., what logically follows in its use) one has to understand the conceptual frameworks or logical space within which it operates, and thereby, how it makes sense within specific forms of living.

For example, the child of an atheist or a mathematical logician might never ask transcendental kinds of questions (though they might). It simply makes no sense then to suggest that these kinds of questions are *universal* wonderings of human beings, at least not in *that* transcendental sense. Following a rule for the use of a concept is

[12] For a wider discussion of the educational value of psychedelic experiences see Letherby 2021.

[13] Cf. Hand (forthcoming, 2024) levies a similar argument against Kristjánsson (2020) in the context of flourishing as *the* aim of education.

after all a practice (Wittgenstein 2009: §202) and we learn how to understand and deploy rules through training (§206) or induction into a particular culture. Rule-following is, therefore, bound up with the various 'customs (usages, institutions)' and practices, as embedded in our particular form of life. (§199). These customs are therefore influenced and even shaped by our upbringing, education, socialization, and culture.

This is why if we are serious about nurturing conditions where wonder (proper) might have a use in education, then we should look at the kinds of 'sub-habits' that might help to inculcate the right virtues and attitudes that are conducive to transformative education and learning, such as openness, humility, curiosity, good questioning, and conceptual insight pitched at the apt developmental level of the child, or adult—even in highly creative environments (see Robinson 2015). It really is not that mysterious. Focusing on the kinds of emotional or affective states of 'deep' wonder, as suggested by Schinkel, seems to miss the point. I do not think it is helpful to advance educational issues or concerns. This is primarily because in advancing his conception of 'deep' wonder, Schinkel focuses on a narrow 'affective' aspect of wonder which is quite simply unworkable. Importantly, as suggested, the kinds of experiences that Schinkel associates with 'deep' wonder is incompatible with the broad, secular aims of education (formal or informal), certainly the kinds of conceptions of education that have human knowledge or understanding as a central criterion.

Schinkel seems to acknowledge this tension. However, pitting wonderful education against conventional education, he suggests that the kind of education that does not nurture deep wonder is problematically narrow. He particularly associates his conception of deep wonder as an antidote to formalized, instrumentalist education and the trends towards assessment of facts and knowledge (Schinkel 2017: 538–39). My view is that although Schinkel rightly identifies a genuine problem (e.g., the over-assessment of children by testing their knowledge of discreet 'facts'), he blurs factual knowledge with other kinds of neglected knowledge in education, such as 'knowing-how'; in other words, he seems to throw the proverbial baby out with the bath-water. In doing so, he then misidentifies the solution. This, I suggest, leaves Schinkel somewhat *lost* in wonder.

Know-how, conceptual competence and mentoring

In Schinkel's recent monograph on the topic of deep or 'contemplative' wonder, he states that '[t]he kinds of access to the world that education aims at, although it is certainly not a purely cognitive or intellectual matter, do all essentially involve *understanding* of some kind' (Schinkel 2021: 105, my emphasis). This is certainly true. If education did not prepare one for the world in ways that were of tangible benefit, then it would be a hard social practice to justify in formal terms. In informal senses, if education were not useful, it would just drop into insignificance. For example, mathematical problem-solving is not merely fact-based knowledge about various formulas etc., it is driven by problem-solving skills that are difficult to codify or pass on for pedagogical purposes (cf. Grosholz and Breger 2000). It is practical in orientation. This is why a 'know-how' kind of understanding matters. In fundamental terms, what human beings need, in order to effectively engage with the world, is basic conceptual competence. This is in no way to focus excessively on merely 'cognitive' matters. Within educational settings 'softer' educational learning might typically include learning how to cross the road, how to share the company of others positively, or how to prepare food. Whereas more advanced know-how skills entail conceptual insight. In the case of firing an arrow, the concept is meaningless unless one knows how to think about the role that an arrow plays in the language-game of weaponry and human life. This includes knowledge of what to do with it, where to place it on the bow string, how to use it and how to use it well. Typically, knowing-how might suggest a practice of some sort, which seems to imply the application of both mental knowledge and practical *skills*, though not necessarily the discreet mental knowledge supposed by some intellectualists. Broadly construed such skills might include;

- Language skills (learning facts, grammatical rules and idioms)
- Reflective skills (ability to reflect and gain knowledge about yourself, strengths, weaknesses, values and goals)
- Career skills (knowledge)
- Interpersonal skills (surface relations/ people management)
- Interview skills (interpersonal skills)
- Relationships with others (deeper relations, emotion regulation)

- Health insights (physical and mental well-being)
- Practical skills (tricks on a bike/art/magic/climbing trees/fishing/play-fighting/card tricks/DIY/making rope swings/fires/bows and arrows…), and
- Practical wisdom (good judgement in everyday matters)

These are perhaps broadly categorized as 'tacit' skills that are somewhat harder to learn without practical experience. Hence, there is no need to engage with deep wonder in order to learn such skills, all one needs is a basic attitude of engagement and interest (wonder 'proper', if you like) supported by an effective tutor, and importantly, *practice*. As Eraut suggests in the context of 'expertise',

> The distinguishing feature of experts is not how much they know, but their *ability* to use their knowledge, because that knowledge has been implicitly organised as a result of considerable experience for rapid, efficient and effective use. (Eraut 2004: 254, citing Schmidt and Boshuizen 1993; my emphasis)[14]

Using 'deep' wonder as a pedagogical tool to inculcate a deep or profound experience just is not practical. What would that look like? For conceptual and practical reasons, it certainly cannot mean that children are stimulated to deep wonder often, or all the time. As Wolbert and Schinkel concede:

> …suggesting that a wonder-full curriculum should be an ongoing surprise is practically untenable. Moreover, unending surprise and spontaneity would probably fail to achieve its object, first because to distinguish the 'unexpected' one needs a certain amount of expectedness. (Wolbert and Schinkel 2021: 448)

I would go further, however. It could in fact put your life (or that of others) at risk. If I stare at a sunset and walk off a cliff during a school trip, I may die; if I do not take caution or care for my pupils during a road-trip because I am too busy being spell-bound in awe at the peculiarities of their personalities, my pupils may die; if I am not cautious with hygiene when preparing food because I am stunned by the complexity

[14] Also see Eraut (2004) for an exploration of know-how and 'informal learning' in the workplace.

of a leaf or a flower petal, I may poison others (or myself) to the point of illness or death. If I am blown-away by the colour of traffic-lights and then misunderstand a gesture from a traffic policeman that seems to suggest that I should come forward (when in fact it was intended to order that I stay put) I could get a ticket, or worse, crash and kill my passengers and/or others.

These examples seem silly, and they are, but I suggest that the educational utility of 'deep wonder' is just as silly. Standing 'still to puzzle about the magic of the world' (Wolbert and Schinkel, 2021: 448) is simply too nuanced to be practical, not least because of the somewhat naive nature of deep wonder as it is presented, but also because of the problem of the complexity of individual dispositions raised earlier. We are not all interested in the same things, and we do not all have the same temperaments and abilities (educators included). Even the further list of examples for the utility of wonder, as discussed by Wolbert and Schinkel (2021), all focus on the relatively unproblematic notion of active or inquisitive wonder (curiosity) and not 'deep' contemplative wonder as an experience.

The basic point is that moments of deep wonder are far and few between, and for good reason. Though that is not enough to dismiss it outright as educationally unimportant (for example, one might feel a sense of deep wonder at a newly gained scientific fact, the advanced nature of ancient civilizations, a poignant piece of prose or poetry etc.), it certainly adds further heft against any claims for its utility as either a pedagogical tool or as a distinction of educational importance, as Schinkel claims. It simply does not offer us any particular educational benefit, even if we see that through the wider lens in terms of informal education, life-lessons etc. There is nowhere to go. That is, as long as we focus on the 'experience', what we get is banality and confusion presenting itself as an alluring mystery. I do not see this as educationally useful, and it would be ethically controversial to suggest that educators *should* use confusion as a pedagogical tool.[15]

[15] More on the prospect of instilled confusion in education in the next section. However, one point of clarification is needed here. Students will of course become confused as a matter of course, and we must not be afraid of confusing them in the process of educating them. The critical point here is more subtle regarding a choice regarding educational aims, namely, between nurturing conditions for *understanding* versus confusion. As Marples (1999: 140) has rightly suggested, '[e]ducation has an

Wonder as *Inquiry*

So what, then, of this 'mysterious' experience that is deep wonder? What is the mystery that we wish to either address (critically) or else value for its own sake? I suggest that a better way to think about the mystery that we feel when we are either awe or wonder-struck, is to see it for what it is, as an 'epistemic emotion' as Hacker does. As such, it entails a confusion in the fundamental ways in which we think about knowledge. Whilst in one sense it may well be a 'spiritual' invocation to see the world differently, as Schinkel suggests, in the realm of our interest here—educational practices—it is a provocation to *inquiry* about how we see the world. It is (at least potentially) an invitation to experience epiphanies. The stimulus (not so much as the 'world' but our *response* to the wonders and problems of existence) is for a distinct purpose—and that purpose is *understanding*. What is educationally desirable is finding a way of conceptually orientating oneself, where epistemic moments of destabilization (and insight) are mere 'clues' or signposts which are meaningful only in relation to the whole form of life that it is positioned within (cf. Polyani 2009: 24). Such knowledge is applied in a particular context and for a particular purpose. The skill is in drawing insightful connections between what we see and what is articulable so that our thinking is competent and fit for purpose where it has been challenged, it is practically oriented. Seeking out spaces for wonder is conceivable as long as those spaces developed for interesting, inspirational and (potentially) insightful dialogue through the mastery of concepts that are embedded in beneficent pedagogical practices between mentor and neophyte.[16]

As subtle as that is, it remains the only plausible use for 'deep' wonder that I see as being of any practical use in educational contexts. In addressing the notion of conceptual confusion, I do not mean to be dismissive. I think it is important to

indispensable role in helping children to formulate and reformulate their desires in accordance with increasing self-knowledge and understanding.' Similarly, in exploring the purpose of education, Relatedly, in arguing for the normative dimensions of education, Standish (2010: 6) states that among other goals, education ought to be about serving the 'needs of society', advancing 'knowledge and understanding', and supporting the 'self-realization of the individual.'

[16] Naturally this occurs through the skilful application of pedagogical strategies of tutors in university seminars or Q&A after lectures, for example.

reemphasize that there is a lot in Schinkel's discussions that is noteworthy and insightful in terms of deploying the general conceptions of wonder within educational settings. Indeed, I think this is vital. However, the notion of 'deep' wonder is susceptible to sentimentalism and patent incoherence. I suggest we need is a robust form of wonder that is more explicit about genuine and meaningful applications, so long as there are opportunities for learning, development, self-knowledge, moral, aesthetic or even scientific knowledge and understanding etc. A central aim of educators (formal or informal) should arguably be to *help* the fly out of the proverbial 'fly-bottle' (Wittgenstein 2009*:* §209) rather than ensnaring it inside.

That said, there is, at least potentially, the prospect of using a complex stimulus (e.g., a difficult philosophical or other problem) in order *intentionally* to overwhelm students cognitively—that is, bringing them into a state of being *lost* in deep wonder. Whilst this is ethically problematic, there is utility in helping students realize their own limitations and supporting them through the difficulty, even if it takes time. Naturally, this pedagogical strategy comes with its own risks because not everyone is necessarily able to manage the stimulus. Some students may never be able to do so, hence this requires judgements about the broad abilities of the class in question. This is one way Schinkel could have defended an educational use for 'deep wonder', and I suggest, is one way that should attract further inquiry. On the whole, however, there is an ethical duty for educators *not* to elicit conditions of confusion, certainly not for the sake of an emotive response e.g., in order to elicit a romantic or sentimental view of life. Whether there is in the end, however, an argument for eliciting such as response for educational purposes, will be a matter of context and carefully thought-through pedagogical strategies, and further research or inquiry.[17]

Concluding remarks

[17] Some empirical researchers have theorized about finding this 'sweet spot' between optimal arousal and peak performance, known as 'Yerkes-Dodson law' (see Yerkes-Dodson 1908) suggesting that it is detrimental to bring students into the overwhelmed stages of stimulus because they are beyond capacity and become excessively anxious. Again, the judgement of the educator is what will be most important here, probably supported with some ethical guidance.

In summary, I have shown that the general concept of wonder is broad and contains a number of distinct aspects, including awe, amazement, puzzlement, even epistemic or existential anxiety. Highlighting some of Hacker's (2018) insights with regards to categories of emotion, I also suggested that reason and emotion are not so separate. We are driven by both, and each has a role in wonder. Separating out the 'experience' of 'deep' wonder, seeing it in purely affective terms is misguided because it fails to incorporate the motivation for the emotion (a lack of knowing), and thus its very purpose and meaning. Schinkel's focus on 'deep' wonder as a state of mind, 'mode of consciousness', 'experience' or 'feeling' is problematic because he argues that this is valuable for education in its own right. But this is also misguided. Whilst stimulating deep wonder in order to inculcate a particular attitude or virtue about knowledge (e.g., humility) may be valuable in some informal contexts (spiritual, religious, possibly moral), but if taken outside of its context and purpose of *understanding*, it begins to look as if it is operating outside of the language-game of learning entirely. My view is that this breeds banality and cannot be an effective tool for those seriously interested in educational aims. For it to be educationally valuable, we must have those epistemic aims in mind.

However, the broader utility of wonder in education (wonder as 'inquiry' as opposed to 'deep' wonder) can be defended and indeed, encouraged, *if* we allow for knowledge and understanding as a focus. What is wonderous is not just our lack of knowledge under certain conditions, but also that we have a route out of the 'fly bottle' through competent and meaningful reasoning. This need not be rationalist or intellectualist in orientation but is first and foremost, *practical* and *ethical*. Such a defence of wonder in education can be made by helping students to navigate the concepts that relate to knowledge and understanding (and by supporting them to navigate self-knowledge and understanding within useful problems). A strategy to induce wonder to 'open' us up to the world is not divorced from conceptual engagement. Basic forms of practical, human, conceptual competence is something that we develop over the course of life, through experience precisely because we are not struck in awe or wonder as a matter of course. These skills, though somewhat 'tacit' in orientation, still retain the requirements for logic, reason-giving, purpose, and appreciation of value. They are

oriented towards conceptual competence, insight, and understanding, and are thereby defensible in educational contexts.

Although Schinkel (2017) suggests that such experiences leave us 'lost for words', these moments are transitory and temporary. The affective components of wonder (such as anxiety, agitation, or awe) move us *forward* and the skills developed in the process, though person-relative, are articulable and comprehensible. The 'experience' of deep wonder only *seems* mysterious until our thoughts are made subject to reflective elucidation, clarification, and explicit analysis. Indeed, making implicit rules more explicit is arguably one of the proper roles of philosophers (and indeed, good educators) in their educational roles.

As Hacker (2012: 164) has suggested, '…in philosophy, there are no mysteries—only mystifications and mystery-mongering'. This places an apparent 'mystery' in its rightful place: in how we *react* to the world through conceptual engagement with a view to gain better knowledge, insight and understanding about what is truly *valuable*. That reflexive process, I suggest, is the better way to think about the utility of wonder in education, specifically, wonder as *inquiry*. In concert with Schinkel, I agree that it is important to respond to the problems of instrumental and narrow educational aims, especially those that hinder creativity, imagination, and wonder. However, this paper presents an important shift *away* from what seems to be a tempting pull for Schinkel (2017) and others towards romantic or sentimental conception of the role of wonder in education. We should move away from incoherence, mystification, and confusion, not toward it, no matter how alluring the confusions may be; epiphanies derived from moments of conceptual insight and understanding are no less profound or wonderous than the emotional experiences that may or may not precede them.

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