ANDERS SCHINKEL (Ed.)

WONDER, EDUCATION, AND HUMAN FLOURISHING

Theoretical, Empirical, and Practical Perspectives

Wonder, Education, and Human Flourishing

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Introduction to *Wonder, Education, and Human Flourishing*

Anders Schinkel

Introduction

Today is Thursday, 28 May 2020, just over a year since the conference *Wonder, Education, and Human Flourishing* was held in Amsterdam, selected papers of which appear in revised and edited form in this volume. Back then I certainly did not anticipate that a year later I would be working from home for months on end as a result of measures taken to control the spread of a virus. In the Netherlands, as in most other countries across the world, many aspects of 'ordinary' life came to a grinding halt somewhere between December 2019 and April 2020 (with many countries now slowly starting to emerge from their self-imposed 'lockdowns'). Part of this was something virtually unprecedented since the introduction of compulsory schooling: in many countries, schools closed their doors, literally but to some extent also figuratively, and education continued at home, with schools offering support in varying degrees through online contact. As a result, education became the responsibility of parents to a much greater extent than before.

One of the most striking aspects – to me, at least – of the impact of COVID-19 on the educational sector in my country, the Netherlands, is the overriding concern, in all levels of education, with the *continuity* of education – with how to arrange this practically and how to ensure that 'vulnerable' students in particular do not fall behind, or further behind. Thus, concern with potentially increasing *inequality* between students is simply the other side of the same coin. Although the situation triggered a flurry of opinion pieces, reflection on at least two things is still conspicuously lacking. The first thing barely reflected on is the *existing* social inequality that has been around long before this pandemic, which we apparently consider normal, or the *fact* that it is by and large accepted as a natural fact of life. After all, what has caused alarm is the *devia-*

tion from this 'normality'. But as David Sclar, history teacher at a New Jersey private school, rightly observes: "However this plays out in the sort of immediate effects to people, really all it does is demonstrate the profound inequality that already exists in this society." (Maxouris and Yu 2020). Only in an already grossly unequal situation can a few months without physical school attendance give legitimate cause for concern (and arguably such concern is most legitimate where the problem is not just missing out on a few months of schooling, but having to go without school meals or having to spend all of one's time in an unsafe home environment). And what should we think of the role of schools in this context? If one of the crucial functions of primary schools, for instance, is now revealed to be one of mitigating some of the worst (and otherwise most visible) aspects of *structural* social inequality, how can it be that the education system is still widely regarded as one of our strongest weapons against inequality? Should we not be more concerned about the role the education system as a whole plays in *maintaining* that inequality (see, for instance, Merry 2020)?

The second type of reflection largely absent from the debate on education during and after COVID-19 is the type fed by the wonder that the current crisis undoubtedly has evoked in many people across the world – a wonder at human beings, at human societies, and at *particular* societies and their ingrained habits and unquestioned assumptions. Again, the overwhelming emphasis in education is on continuation of the 'normal' – or else on so-called 'innovations' that speed up the normal or make it more efficient, for instance by moving 'education' online –one of the 'opportunities' we are supposed to thank the crisis for. The unprecedented intrusion of the state in the private lives of many people – an intrusion that may be justified (to the extent that it can be justified) by the fact that these lives are not *just* private – has thrown into high relief what many of us normally take for granted: freedom of movement, freedom to meet friends and family, personal safety and security, and more generally, the more or less smooth running of the whole 'system'. At the same time, this intrusion has served as a reminder of the otherwise much less visible power of the state (as well as demonstrating its relative powerlessness, of course, in the face of this type of threat). The crisis has also exposed very clearly many problematic aspects of our current global economic system: skies were suddenly blue again, free of smog and vapour trails; the spread of the virus owed much to humanity's unchecked intrusion into wild nature and deeply unethical relationship with animals and the non-human world in general, as well as to the volume of global movement of people and goods; not being able to go shopping or go on holiday abroad or at home was a big 'frustration' for many of us; many countries' economies depend greatly or almost entirely on luxury consumption – on things that may be pleasurable, but can hardly be deemed essential

for life and even for living well; and so on and so forth. In short, the crisis triggered a kind of alienation (deepened, I think, by the 'shadow' that appeared to hang over everything), a sense of distance from normal life, a defamiliarisation of the familiar – something that is also an aspect of wonder (Egan 2014), and that in this case may well precede or lead (one) to wonder.

'Education' does not depend on *schools* alone. When and where did we get that idea, that it can happen only or mostly between the virtual or material walls of the school? It would be foolish to suggest, as some 'innovators' like to do, that the school is a fossil, an outdated institution. There is great value in the type of learning it makes possible precisely because it is in a sense 'separate' or at a distance from the world and everyday life (Masschelein and Simons 2013). But *life* educates as well, and for such reasons as sketched above the outbreak of the novel coronavirus can be a significant life experience for children and adults alike. However, this can only happen if we allow ourselves time to stop and simply observe. What is happening? What am I seeing? How do I feel about this? And what does this mean for me? This requires that we give ourselves 'pause', the pause in thought that wonder entails (Lloyd, this volume). The crisis may easily lead to wonder's 'shock of awareness' (Hadzigeorgiou, this volume) about many aspects of life, but we must take care not to run it over or rush past it in a hasty effort to re-establish 'normality'.

It saddens me to see how many people – not least in academia – seize upon the crisis as an opportunity for self-promotion, to gain influence or to attract money. (But perhaps I am naïve and just not sufficiently aware of how the crisis may have the opposite effect for those who 'fail' to do so.) However, in terms of education, the crisis does hold an 'opportunity' that would be a shame to waste. If, as Dewey and Buber maintained, education centrally involves mediation, in the sense that the educator selects what of the world the child encounters (Dewey 1965, 27-28; Buber 1962, 23; see Schinkel 2019a), and if – as is surely the case – the crisis *itself* also singles out certain aspects of life and the world as particularly significant, then we should not be too hasty to get back to the planned curriculum. Instead, we should take the time to see what we can learn from the situation, and beyond that, how we may deal with the difficulties it brings with it, be shaped by it, and hopefully in the long term grow as human beings as a result of how we deal with it.

But pausing, taking time, deviating from plans – these terms do not describe our current education systems. Teachers in many cases may *want* to do all of these things, but the system hardly allows it, being geared towards efficiency, routine, speed and accountability (Cant 2014; Trotman 2014; d'Agnese, this volume; Gilbert, this volume). 'Intrinsic motivation' is a buzzword in educational practice and educational and psychological research – it is hardly an

exaggeration to say that it is currently considered the Holy Grail of education – and 'curiosity', too, is quite welcome in this literature, and so is 'interest' (see, for example, Niemic and Ryan 2009; Kashdan and Silvia 2009). But despite its close connection to these issues, the concept of wonder is still not getting the attention it deserves in educational research, theory and practice. A hopeful sign is that wonder is enjoying *increasing* attention, not least thanks to Yannis Hadzigeorgiou's work in science education (e.g., Hadzigeorgiou 2001; 2012; 2016; Hadzigeorgiou and Garganourakis 2010), Kieran Egan's work on 'imaginative education' and 'romantic understanding' (Egan 1990; 1997; 2001) and Kieran Egan, Annabella Cant and Gillian Judson's excellent edited volume *Wonder-Full Education: The Centrality of Wonder in Teaching and Learning across the Curriculum* (Egan, Cant and Judson 2014). The current volume hopes to add to and build on this with further theoretical reflection and empirical research on the interconnections between wonder, education and human flourishing, on the nature and development of wonder, and on how to stimulate wonder in education.

Wonder, education, and human flourishing

The conference from which this book has sprung was based on the premise that there are strong interconnections between wonder, education and human flourishing; and more specifically, on the premise that *wonder* can make a significant difference to how well one's education progresses and how well one's life goes.

Those latter things, education and life, and flourishing in life, are of course also connected in various ways (see Moore in this volume). It is obvious that education, and in most societies today this means formal education, or schooling, generally speaking promotes human flourishing simply because, if a student completes their education successfully, they receive the paper proof of that success, which is almost indispensable to get anywhere in life. (Though of course one can very well get somewhere without flourishing.) But in another sense of the term education is also connected with human flourishing due to what it *is*. If we understand education as a process in which one's relation to and outlook on the world is changed through wider and deeper understanding of it, a process that also includes the acquisition of a sense of the richness and multifariousness that the world *is*, and of capacities to appreciate this – if we understand education in this way, rather than as schooling per se or any other attempt at education (thus understood) – then clearly to be educated is closely connected with what it means to live a flourishing life as a human being.

To flourish as a human being, as I understand it here, means that one lives a subjectively and objectively meaningful and worthwhile life, in which valuable human and personal potential is actualised and can find expression (see De Ruyter 2004; 2007; White 2011; Kristjánsson 2020). The normative concept of education used above implies what Peters called 'the transmission of what is worth-while' (1970, 45) and is for that reason alone tied in with the notion and reality of human flourishing. But it is worth fleshing this out a bit more. Is it possible for a person to lead a flourishing life without both an adequate understanding of at least those aspects of the world most relevant to her life and a sense of the possibilities the world holds for her (i.e. a sense of what is possible, and more specifically what is possible *for her*)? Obviously, a lot depends on the exact meaning, charge, and weight given to each of the terms in this question. When are we prepared to say that a person leads a *flourishing* life rather than a decent or pleasant life? What counts as an *adequate* understanding? What is relevant? And so on. I am not going to attempt to pin these notions down here; it suffices to note that unless we set the bar for flourishing extremely low it will inevitably involve a more than superficial understanding of at least one's most important domains of functioning and an ability to appreciate qualitative differences in those domains (i.e. to distinguish better from worse, more from less important). Furthermore, it is perfectly plausible that a person could be said to lead a flourishing life due, in large part, to her personally and objectively meaningful and successful engagement in teaching; but it is hard to see how this could be true if this person were unable to experience teaching both affectively and cognitively as *remarkable*, i.e. to be 'fully aware' of the reality of teaching at least occasionally, rather than permanently submerged in its routine.

If this makes sense, we have stumbled upon at least one link between wonder and human flourishing here: wonder creates a reflective distance to its object that enables both reflection (and therefore the imaginative consideration of alternative possibilities; see Pedersen's first contribution to this volume, as well as Pedersen 2019) and deeper appreciation. To experience wonder is to experience a combination of puzzlement and a sense of importance. In wonder one's attention is arrested by something that puzzles or mystifies (and sometimes surprises) one, yet at the same time appears worthy of one's attention for its own sake (Schinkel 2017; 2020). Wonder can take various forms – it can be more or less 'inquisitive' (involving a drive to solve one's puzzlement through understanding and explanation), more or less aesthetic, more or less joyful, more or less unsettling, and it can be close to awe and even (though this is further from our usual contemporary understanding of wonder) lead on to fear or dread (see Quinn 2002, Rubenstein 2011 and Vasalou 2015). But it always involves this combination of puzzlement and importance (or, in Hadzigeor-

giou's terms – see this volume – 'aporia' and 'thaumazein', puzzlement and admiration), and that means it always involves both a strong awareness of the limits of one's understanding and a heightened interest in the world. And because of this, wonder's educational importance and its importance for human flourishing cannot be underestimated.

Understanding, as well as being aware of what one does not understand, may be said to generally contribute to human flourishing indirectly or instrumentally, by enabling one to secure goods that are constitutive of flourishing or prevent the loss of such goods; or directly, if they are seen as (aspects of) constitutive elements of human flourishing. In practice the distinction may be difficult to make, since flourishing depends on how we deal (and are fortunate enough to be capable of dealing) with the human condition, and our striving for understanding is a response to, and inextricable from, that same human condition (see Cuypers' interpretation of Peters' work in Cuypers 2012). We should also acknowledge the possibility that being or becoming 'educated' may *detract* from flourishing. Aldo Leopold wrote: "One of the penalties of an ecological education is that one lives alone in a world of wounds." (Leopold 1966, 197; cited in Orr 2004, 22). Still, it seems that the task of education may be summarised as one of opening up the world, and that human flourishing is in large part a matter of opening up to and being meaningfully connected with the world; and wonder epitomises that openness to the world, shows us the world as worthy of remark, and in many cases supports our efforts to find meaning and value in our lives (Fuller 2006; Schinkel 2019b). Last but not least, despite the common association of wonder with passivity, wonder may also inform and inspire *action* that helps improve our own lives and those of others (Lloyd 2018; also this volume). These connections – between wonder and education, wonder and human flourishing, and between all three – thus deserve further attention, which they receive, from both philosophical and empirical points of view, in the present volume.

Overview of chapters

The book is divided into three parts. *Part I: The Importance of Wonder in Education and for Human Flourishing* contains three chapters. In Chapter 1, Vasco d'Agnese engages with the problem that the neoliberal mindset and discourse that dominates educational policy and practice globally is, its own rhetorics notwithstanding, a conservative and closed mindset, lacking in wonder; and d'Agnese sees wonder, and a wonder-inspired pedagogy, as a means to challenge and disrupt the status quo. Drawing on the work of Dewey

and Arendt, he argues for wonder in education as something that helps students "face the ungraspable, the radically new, the unfathomable". In confronting neoliberal educational discourse d'Agnese makes a powerful case for the importance of wonder in education and for living a rich and meaningful life.

Chapter 2 is an original exploration by Jan B.W. Pedersen of the contribution of wonder to human flourishing. After introducing the philosophy of wonder and the philosophy of human flourishing and its history, Pedersen discusses the connection between wonder and human flourishing through three lenses: individuality (or personal identity), relations and the political. In each case, through vivid examples, Pedersen argues that wonder "plays an important role in human flourishing because it takes wonder to discover how we might flourish as the kinds of creatures we are".

In Chapter 3, Joseph Moore argues for human flourishing as an aim of education in two senses: because we have strong reason to promote people's flourishing, and because education can promote flourishing, we also have strong reason to educate people; furthermore, because whether and to what extent education promotes flourishing depends on how we educate people, our reasons to promote flourishing are also reasons to educate people in a particular way. Moore argues that education should be as general as is feasible, expose people to a wide variety of valuable activities, and not be limited to formal education. He concludes by offering three reasons why, in light of the fact that we have strong reason to educate for flourishing, educators also have reason to try to instil wonder in students.

Part II: Conceptual Explorations and Theoretical Perspectives contains four chapters, three philosophical and one from the perspective of developmental psychology. Genevieve Lloyd's Chapter 4 draws out the educational implications of Spinoza's view of wonder, a view that, as Lloyd argues, played a pivotal role in the history of the construal of wonder, and elements of which are worth recovering. For Spinoza wonder arises when the mind is confronted with something for which it has no comparison and therefore comes to a halt. This is a productive moment, for it provides "an impetus to finding alternative ways forward". Wonder thus plays a crucial role in life and therefore also in education – not least in civic education.

In Chapter 5, Sophia Vasalou focuses on a particular type of wonder, namely 'cosmic' or 'existential' wonder, a type of wonder that, as she notes, finds quintessential expression in the question: "Why is there something instead of nothing?" People are often led to this type of wonder by philosophical argument, or in a way that is mediated by such argument; does that mean that cosmic wonder is "only as good as the reasoning that produced it"? Is cosmic wonder cognitively warranted (i.e. do we have good *reason* to experience it)?

Vasalou's subtle and captivating investigation leads the reader to wonder at wonder and to a "celebration of our capacity to think".

While Vasalou's chapter already included some references to Wittgenstein's reflections on wonder, Chapter 6 focuses on the world, and the limits of language and understanding. In this chapter, David Erlich links Wittgenstein's 'acceptance of wonder' as an expression of, and our relation with, the unsayable and an experience of absolute value with Buber's description of the *I-You* relationship. Erlich then goes on to discuss how education can promote wonder as an ethical openness to the World and to the Other, drawing on both philosophers' educational writings as well as their experience as educators.

The final chapter of Part II, Chapter 7, by Marina Bazhydai and Gert Westermann, constitutes an important addition of another kind to the extant literature on wonder. They review the state of cognitive developmental research on curiosity, wonder and creativity, focusing in particular on methodological considerations. They propose that the links between curiosity, wonder and creativity are highly complex, cross-fertilising and non-linear. Bazhydai and Westermann offer suggestions for future research using laboratory-based experimental studies, in particular highlighting the benefits of longitudinal research in order to understand the interrelations between curiosity, wonder and creativity as they unfold developmentally. Finally, they propose ways to develop effective educational interventions to foster these capacities.

Part III: Studying Wonder Empirically and Promoting Wonder in Education appropriately contains as many chapters as Parts I and II together. The seven chapters of this part contain a wealth of ideas and educational strategies to promote wonder in education as well as teacher education. Yannis Hadzigeorgiou leads the way in Chapter 8 with a rich discussion of the nature of wonder and its role in the learning process – a discussion based not just on philosophical engagement with the subject, but also on many years of practical experience and empirical research. After an illuminating discussion of the concept of wonder, Hadzigeorgiou discusses no less than thirteen features of wonder and their pedagogical implications. This chapter and the work it synthesises thus constitute an invaluable resource for anyone interested in promoting wonder in education.

Chapter 9, by Andrew Gilbert, is likewise informed by empirical research, but looks at wonder from a different but no less important angle: that of the education of teachers. Gilbert reports on an instrumental case study of two beginning teachers throughout their student teaching experience and into their first year in the classroom. In his case study, Gilbert aimed to find out how these beginning teachers' experiences with wonder and a wonder-infused pedagogy influenced their sense of what is possible in the classroom. A sec-

ond question addressed in the study and in the present chapter concerns the internal and external challenges these teachers had to overcome when they themselves tried to introduce a wonder-infused pedagogy, as well as the support they received from their educational communities.

In Chapter 10, Valentine Ngalim and Fomutar Stanislaus explore the potential of African traditional pedagogy for the promotion of critical and creative thinking skills. From a Western viewpoint, the use of proverbs, riddles and folktales may at first sight not seem conducive to such thinking. Ngalim and Stanislaus, however, offer a challenging and plausible argument that African oral traditions, due to the flexibility, ambiguity and openness of the narratives they employ, harbour a strong potential to provoke wonder and, in its wake, creative and critical thinking.

Laura D'Olimpio, in Chapter 11, asks how we can educate for wonder, given the elusive nature of wonder: it tends to come unbidden, not when we are looking for it. She makes a convincing case for the arts as an important vehicle for prompting the experience of wonder. Artworks, being creative forms of expression, invite those who engage with them to view things in unusual ways, and to adopt an open and receptive mode of perception, a mode that is akin to wonder, especially deep or contemplative wonder, and is likely to give rise to it. Art invites us to really look, or listen, and look *again*, to pay attention to something we take for granted, and this opens the way to wonder.

Chapter 12, by Jacky van de Goor, Anneke Sools and Gerben Westerhof, investigates the workings of existential wonder, conceived of as a *mindset*, an "intention to see the special and meaningful in the ordinary and everyday". They analyse the ways in which participants in their study constructed meaning in memories of 'familiar routines' that they regarded as extremely meaningful, such as family visits, a walk in the woods or caring for children. Their results suggest that several mechanisms may contribute to the mindset of wonder: the awareness of opposing values within the moment, the awareness of the transformation from one value or state of being to another, and the awareness of the contrast between the instrumental and symbolical, ritual function of routines. Van de Goor, Sools and Westerhof conclude by indicating how these mechanisms may be employed to cultivate a mindset of wonder in education and to re-enchant educational routines that have lost their vitality.

In Chapter 13, Mihaela Frunză, Liana Precup and Sandu Frunză present the preliminary results of an instrumental case study of a total of 23 Philosophy for Children (P4C) sessions conducted using their 'Community of Dialogue' approach, inspired by the work of Martin Buber and Emmanuel Levinas. They hypothesised that, in the process of cultivating competences like critical thinking and conceptual abilities and furthering self-esteem, P4C sessions place a

strong emphasis on stimulating students' capacity for wonder. Their preliminary conclusions are that this is indeed the case and that wonder facilitates the development of such competences in children.

The concluding Chapter 14 is another contribution by Jan B.W. Pedersen, in which he argues that weird fiction (a subgenre of speculative fiction), and in particular the work of Howard Phillips Lovecraft, is a catalyst for wonder. Pedersen takes the reader on a wonder-filled tour of Lovecraft's work, paying special attention to the presence of 'dark wonder', followed by some concluding thoughts on the educational value of exposure to wonder and dark wonder.

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1

THE IMPORTANCE OF WONDER IN EDUCATION AND FOR HUMAN FLOURISHING

1 Contrasting the Neoliberal Educational Agenda: Wonder Reconsidered

Vasco d'Agnese

Introduction

Over the past decades, the neoliberal shift has widely affected educational discourse and policies worldwide (Olssen and Peters 2005; Rutkowski 2015; Shahjahan 2011). This 'neoliberal cascade' (Connell 2013), has *de facto* reframed educational purposes and schooling practice, thus reframing what students should know, strive for, and, in a sense, be (Biesta 2006: 2015; Masschelein and Simons 2008). Educational institutions and processes as well as what we may call 'educational subjectivities' (of both teachers and students) have been pushed toward a significant transformation (Ball 2003). I argue that such a transformation is anything but benign. It implies a lack, if not an eclipse, of invaluable educational features such as democratic sharing among all the actors of educational processes and practices, meaning creation, and the possibility for newness to emerge. The failure to recognise such features and phenomena results in an impoverished conception of education at the individual and collective levels (Ball and Olmedo 2013; Biesta 2004, 2006, 2010, 2019; d'Agnese 2017a, 2017b; Hill 2004).

It is important to note that the neoliberal educational agenda acts not just through economic penetration and political influence, thus steering both the macro and the micromanagement of schooling and education (Alexander 2011; Apple 2000; Ball 2009; Ball and Olmedo 2013; Biesta 2004). It is my argument that, when analysing the neoliberal framework for education, we have to also analyse its linguistic level, and the widespread rhetoric that guides the representations of education and schooling we address. Without such an analysis, we run the risk of not capturing the power of fascination and the pull neoliberalism exerts. Neoliberalism, in fact, also acts by means of a fascinating rhetoric and language, one in which 'better jobs for better lives' (OECD 2018) are prom-

ised, and a 'new vocabulary of performance' (Ball 2003, 218) reshapes teachers' and students' aims and purposes.

Although the purpose of this contribution is not to conduct a detailed analysis of such reports and documents – although I believe they deserve close examination – it is important to remember that they are much more than reports and documents; they deeply affect educational discourse and practices worldwide, penetrating in all of its details, from curriculum to teaching methods (Ball 2003; Biesta 2004; Alexander 2011), from families and students' perceptions regarding what is worthwhile and what is not, to teachers' professionalism (Biesta 2015).[1]

It is worth noting that when reading the documents, recommendations, publications and webpages of certain major educational agencies and institutions worldwide (e.g., the European Commission, the OECD's Directorate for Education and Skills, and the U.S. Department of Education) we see that the same educational picture is enacted and by means of the same rhetorical strategy. Indeed, these powerful institutions frame their performative discourses on education in terms of 'training [and] basic skills' (European Commission 2015), 'student achievement and competitiveness' (U.S. Department of Education 2015), 'knowledge management [...and] students' performance' (OECD 2015) and 'what is required to succeed' (Schleicher 2016) in today's complex world. Even by glancing at the webpages and names of these institutions we can gain an idea of how education is being enacted. The OECD's Directorate for Education is called the 'OECD's Directorate for Education *and skills*', and the webpage of the European Commission devoted to education is entitled 'Education *and Training*' (EU 2015). In addition, in what we may call the EU's leading document, *Rethinking Education* (EU 2012), education is established in terms of skills of all kinds. The United States is no exception; at the centre of the U.S. Department of Education's homepage, the following claim is found: *"Our mission* is to promote student achievement and preparation for global competitiveness" (U.S. Department of Education 2016).

Given the aims of this paper, I cannot adequately delve into this discourse or analyse in detail how and by what means it works and which values and idea of society it promotes. However, a few examples may be useful to both substantiate and better situate the analysis I wish to develop. In what follows, I will briefly focus on: a) the OECD's *PISA trifold brochure* (OECD 2016a), which presents the OECD's Programme for International Student Assessment; and b) What Works Clearinghouse's mission statement.

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1 A suitable example is PISA's questionnaire, especially the part concerning questions about students' families (OECD 2016b).

Let us analyse the OECD's *PISA trifold brochure* (OECD 2016a), where we find the following:

> 'What is important for citizens to know and be able to do?' That is the question that underlies the triennial survey of 15-year-old students around the world known as the Programme for International Student Assessment (PISA). PISA assesses the extent to which students near the end of compulsory education have acquired key knowledge and skills that are essential for full participation in modern societies. (OECD 2016a, 1)

Although the passage, at first sight, may seem to be only an explanation of what an assessment programme is supposed to produce, it is my contention that through passages such as the one quoted above, a severe reduction of education, living and society is enacted. That is, the assumptions being made are anything but innocent. Drawing out the underlying assumptions of the passage above, the first thing worth noting is that citizens need to acquire the same knowledge and skills regardless of where they live. PISA, in fact, is able to assess "[w]hat is important for citizens to know and be able to do". This statement signifies that modern societies may be reduced to just one society in that each modern society would require the same skills, knowledge and education to flourish; in turn, citizens, regardless of their desires, aspirations, ideas, personal values and projects, would need to acquire the same skills to succeed. We can see that the OECD does not conceal its ambition to establish a valid worldwide framework for all degrees of education. Moreover, PISA's mortgage on education, given its performative role (Gorur 2011), is not limited to what students should learn in the here and now. The OECD, according to its own words, aims to shape 'what is possible in education'. PISA's results, in fact, "reveal what is possible in education by showing what students in the highest-performing and most rapidly improving education systems can do" (OECD 2016a, 2).

The second cue I focus on is related to the What Works Clearinghouse. The What Works Clearinghouse, according to its own words, "is an investment of the Institute of Education Sciences (IES) within the U.S. Department of Education". Its aims consist of "review[ing] the existing research on different *programmes, products, practices* and *policies* in education [to] provide educators with the information they need to make evidence-based decisions. We focus on the results from *high-quality research* to answer the question 'What works in education?'" (What Works Clearinghouse 2016). I wish to be clear from the outset that my concerns are not so much with the evidence-based approach as relating to education. Although analyses have been provided about its weaknesses and educational inconsistency (Biesta 2007: 2010), one may reasonably argue that

any educational approach has internal weaknesses and inconsistencies – my own included, of course. The problem is that there is something uncomfortable about the fact that an institution that aims to evaluate and, in a sense, govern education in such a wide country adopts only one approach. One would expect a wide, multidimensional and inclusive approach from such an institution, one staging comparisons of evidence-based approach and not-evidence-based approach. Instead, in the U.S. Department of Education's documents on education, we find little trace of alternative perspectives or, importantly, initiatives aimed at discussing and broadening such an approach.

Then, we may note that a significant problem of the neoliberal educational agenda is that only one vision of society and education is allowed to enter the educational arena. Otherwise stated, there is no competition between or acknowledgment of different ideas about society and education. The competition occurs within the system, namely, between countries, schools, teachers and students, on the basis of what has effectively been called 'a global space of equivalence' (Shahjahan 2013, 677). Through such a space, countries, schools and the subjects being educated are ranked and organised and are pushed to an ongoing competition aimed at achieving the best learning outcomes (Au 2011; Biesta 2010). Neoliberal discourse, although enacted in different countries and situations, speaks with one voice, as it were.

This paper, then, seeks to engage with the dominance of the neoliberal mindset using a specific foothold, namely, the very *lack of wonder*, as a term and concept, within official educational frameworks.

With regard to the argument I wish to develop, we should note that no mention of wonder is made within documents, publications, webpages and recommendations of major educational agencies and institutions worldwide (e.g., European Commission, U.S Department of Education, OECD).[2] In this sense, Schinkel is right in saying that "there are some reasons to think that current education systems in the Western world constitute a particularly hostile environment for the experience of wonder" (2017, 540). As a consequence, educators, teachers and students as well may lose their sense of wonder.

Then, although one can say that there is no need to engage with wonder in documents whose objective is to frame educational policies at large, it is my contention that wonder, which is situated at the core of fundamental educational features and phenomena, deserves our attention, whether we are

2 It is worth noting that, analysing the main publications and reports of such institutions – e.g. *Rethinking Education* (EU 2012), *WWC Intervention Report* (What Works Clearinghouse 2016) or OECD's presentation of PISA-based Test for Schools (OECD 2018) – we find the same result: wonder as a term and concept is never mentioned.

educators, teachers, scholars or policy makers. Despite its rhetoric about continuous change and endless transformation, educational neoliberalism, in maintaining the educational *status quo*, is in fact conservative to its very core. Therefore, a call toward wonder as something challenging and disrupting such an apparatus may be educationally fruitful and even necessary.

My contribution is organised into two steps: in the first step, by drawing from Dewey, Arendt and current scholarly literature, I attempt to circumnavigate the question of wonder educationally; in the second step, I pin down the educational bearings of my analysis. If schooling should not just be a place where given contents are learned in order to manage given tasks, space has to be made for unstructured activities and for new experience to happen. Wonder, I shall argue, allows for a different form of schooling than that embodied by current neoliberal narratives, namely, one concerned with the messiness and radical uncertainty of living and thinking (d'Agnese 2018). If students have to also face the ungraspable, the radically new, the unfathomable, the experience of wonder must have a place in schooling.

Circumnavigating wonder

Studies and analyses about wonder are not frequent in educational scholarly literature. Some notable exceptions are Di Paolantonio's conceptualisation of wonder as opposed to thoughtlessness (2018), Schinkel's analysis of 'deep wonder' (2017), Hadzigeorgiou (2014), and other contributions to Egan, Cant and Judson's edited volume *Wonder-full Education*' (2014).

In his article, Di Paolantonio contrasts wonder with curiosity, arguing that the attitude of wonder "retains an un-mastered and inoperative relation with what might turn up in the world". Wonder, then, may generate a kind of 'attentiveness and care' beyond 'knowingness and purpose' (Di Paolantonio 2018, 4). Wonder, as opposed to curiosity, is a kind of astonishment and interruption in the flow of experience, the moment in which we feel the impact, the hit and the presence of the world as something independent from our conceptualisation. Wonder, in Di Paolantonio's understanding, may enhance a kind of "dwell[ing] with things so that we might come to care about what it is that we are doing when we do what we do, even when we assume that what we are doing – "learning" – seems like the most serious and worthwhile of activities." (Di Paolantonio 2018, 6)

Such an analysis echoes Schinkel's understanding of wonder as something 'defamiliaris[ing] the familiar', something that shows us the world and things

'as if seen for the first time'. (Schinkel 2017, 542) In Schinkel's analysis "being capable of experiencing wonder implies an openness to (novel) experience and seems naturally allied to intrinsic educational motivation, an eagerness to inquire, a desire to understand, and also to a willingness to suspend judgement and bracket existing – potentially limiting – ways of thinking, seeing, and categorising" (Schinkel 2017, 539). Moreover: following Schinkel's analysis of "deep wonder" we may also note that such a question is also associated with 'speechlessness' (Schinkel 2017) and even with a kind of discursive paralysis (Campbell 1999; Vasalou 2015). Such a paralysis, far from being a kind of deterrent for education, allows for the emergence of diverse meanings in educational settings.

Wonder, in Schinkel's words, is 'aporetic, vertiginous' (2017, 544) and invites us "to remain open to (...) vulnerable uncertainty" (Vasalou 2015, 59). Moreover: 'deep wonder' involves 'a fundamental, irresolvable not-knowing'. (Schinkel 2017, 546) In a slightly different vein, Hadzigeorgiou describes wonder as 'the engine of all intellectual inquiry' (Hadzigeorgiou 2014, 40), something promoting "unexplored connexions with possibilities half-disclosed by glimpses and half-concealed by the wealth of material" (Hadzigeorgiou 2014, 48).

Wonder may fuel sensations of excitement and astonishment by which we feel entangled with the world, with its mystery and presence. In wonder there is no inside/outside split in ourselves: we feel a kind of wholeness. Following such an analysis one would be tempted to say that wonder allows for an epiphany of the world in its transcending immanence, if I am allowed to use this term. In wonder we clearly feel that something captures ourselves, something coming from above, so to say, and yet that something is there, close to ourselves. In this sense wonder is not to be confused with any kind of 'subjective' experience. Wonder is an event in-between consciousness and the world. Moreover, in a sense consciousness springs and comes into the world by wonder. Yet, wonder is provoked by something external, something affecting ourselves in a radical, deep way. Wonder is upsetting and yet in wonder we are invested by something which stops time and sensations. In wonder we experience a kind of eternity, eternity understood as the suspension and absence of time. Wonder, in this sense, exceeds all boundaries.

That is why wonder may disrupt the predictability of learning processes and lesson plans. It is a mode of consciousness in which we experience something beyond our understanding, yet worthy of our attention (Schinkel 2018). Wonder interrupts our ordinary paths of thinking and action. Wonder catches us off guard, it is incidental. Wonder is unpredictable and episodic. That is why there is a difficulty to conceptualise and articulate wonder, a kind of inherent incomprehensibility of wonder; and that is also why, as I attempt to pin down in section two, an educational use of wonder is so difficult, yet necessary.

One feature of wonder, then, is the connection with mystery and unknowability. In a sense, where discourse begins, wonder ends. This implies that it is very difficult, if not impossible at all, to give prescriptions or practical advice that may help us create a space for wonder in current schooling practices, let alone the curriculum. Even as sensation wonder is paradoxical: in wonder we feel excited, and yet we are called to contemplate something; we may feel an urge to move, act and think, and yet wonder is the suspension and interruption of the very possibility of thinking and acting with an end in view. And yet, it is exactly the collapse of discourse and practice altogether, the entanglement with mystery and unknowability wonder provokes that is educationally promising. To elucidate such an entanglement, I attempt to frame the question by interlacing Dewey with Arendt. I begin with Arendt.

The term 'wonder' rarely occurs in Arendtian writings and, to my knowledge, Arendt does not engage in any analysis of wonder *per se*.[3] However, I believe that her account of 'newness' and the 'startling unexpectedness' characterising the human condition (Arendt [1958] 1998, 177-178) are deeply entangled with a sense of wonder. We may even say that a sense of deep gratitude for living and existing is one of the hallmarks of Arendt's writings.

As we all know, one recurring theme of the Arendtian oeuvre is her critique of any already established account of humanity. In *The Human Condition* she boldly challenges any definition of human nature. For Arendt, whatever we may think of it, the human condition is always already beyond the thought that attempts to capture it. This is so because human beings come to establish who they are in ever-ending and ever-changing processes whose structure and aims are defined in concrete living situations. Any attempt to give human beings pre-conceived aims, then, runs into such a reification of what is human and in the erasure of '[t]he disclosure of the "who"' (Arendt [1958] 1998, 184), namely, the manifestation – and the fulfilment – of the subject as one who can act and speak and who strives for a meaningful life. What is highly significant from an educational perspective is that in Arendt's view, both 'meaningfulness' and 'newness' come into play only in the dimension of 'togetherness'.

To be clear, the central point in Arendt's understanding is that human beings come into the world in their uniqueness by revealing to others who they are through their actions and speech while at the same time revealing to themselves who they are through such actions and speech. Otherwise stated, we do not know who we are before such a revealing comes into play in the public dimension. Therefore, in the Arendtian account, when disclosing their

3 For more on the question of wonder in Arendt, see Di Paolantonio (2019) and Schinkel (2019).

uniqueness to others and themselves, women and men are always on the verge of experiencing both a sense of wonder and the unexpected, for such a revelation is not known in advance. Rather, it comes as an epiphany. The opposite is also true: when losing sight of the wonder entangled in such an epiphany, we lose sight, at the same time, of our humanity. As Arendt states, "Although nobody knows whom he reveals when he discloses himself in deed or word, he must be willing to risk the disclosure (...). It is in the nature of beginning that something new is started which cannot be expected from whatever may have occurred before." (Arendt [1958] 1998, 177-180)

I wish to highlight that the accomplishment of such newness, along with its 'character of startling unexpectedness' (Arendt [1958] 1998, 177-178) and inherent sense of wonder, are not something added to human existing as an occasional outcome. In Arendt's view, the very possibility of acting and speaking, the very possibility of showing who human beings are, and, thus, the very possibility for education to happen lies in the conditions that guarantee such a public, eminently political space – that is, the space of diversity and plurality. As Biesta puts it, "Arendt consistently tries to understand human interaction in general, and political life in particular, from the point of view of plurality, diversity, and difference" (Biesta 2001, 394). Without plurality, in fact, we would have neither speech nor action, the things by which the 'unique distinctness' of human beings is revealed (Arendt [1958] 1998, 176). As Arendt states, "Plurality is the law of the earth" (Arendt 1978, 19) and only through speech and action are human beings able "to appear to each other, not indeed as physical objects, but *qua* men". This is why "a life without speech and without action, (...) is literally dead to the world" (Arendt [1958] 1998, 176-177).

With the term 'action', Arendt means something unique, something that has to do with the capacity of human beings "to take an initiative, to begin (...), to set something into motion" (Arendt [1958] 1998, 177). By means of action, newness *and* human beings come into the world as such. I wish to highlight that the accomplishment of newness, "that something new is started which cannot be expected from whatever may have occurred before", its 'character of startling unexpectedness' (Arendt [1958] 1998, 177-178), is not something added to human beings, something we as humans may or may not accomplish. As humans, we come into the world as '*initium,* newcomers and beginners'; we are beginners accomplishing newness. This state of being beginners is essential to the human condition, and by means of it we "take initiative, are prompted into action" (Arendt [1958] 1998, 177). In Arendt, 'the capacity of beginning something anew' (Arendt [1958] 1998, 9), the capacity to begin something unexpected and even 'infinitely improbable', is the peculiar trait of human living. Then, 'beginning something anew' and pursuing the 'infinitely improbable'

are closely related to the capacity to experience a sense of wonder. Otherwise put, without such a sense of wonder we may hardly experience newness and the 'infinitely improbable'.

And such being an *initium* is the focus of *The Crisis in Education*. Here, in speaking of the hope for the new generations, Arendt furnishes in advance a strong critique of the neoliberal framework for education, for such a hope "hangs on the new which every generation brings; but precisely because we can base our hope only on this, we destroy everything if we so try to control the new that we, the old, can dictate how it will look" (Arendt 1977, 189). Acting 'for the sake of what is new and revolutionary' (Arendt 1977, 189) is, in Arendt's conception, the first aim of education.

Then, it is clear that the neoliberal educational agenda, in giving students a pre-conceived framework in which aims and means are established in advance, an idea in which the world and things are – just – mastered, erases such a condition of being an *initium*, for thinking, in Arendt's work, is far from any idea of 'master[ing] the world' (Stonebridge 2017, 20). Following Arendt, we are beginners accomplishing newness. We are then entangled with wonder, and only by keeping intact and alive such an entanglement we may fulfil our humanity.

And here is where Dewey's oeuvre is important. Time and again, Dewey highlighted newness as essential for education to happen, and one founding feature of his thought is its commitment to the 'unattained' (Dewey 1929, 182) and 'wonderful possibilities' (Dewey 1913, 94) involved in experience and education. When speaking of imagination and its pivotal role, Dewey expends crucial words on openness and meaning creation, going so far as to state that, "[t]here is no limit to the meaning which an action may come to possess. It all depends upon the context of perceived connections in which it is placed; the reach of imagination in realizing connections is inexhaustible" (Dewey 1930, 243). In Deweyan understanding, the human capacity to create meaning – in Dewey's words, "the capacity for constantly expanding the range and accuracy of one's perception of meanings" (Dewey 1930, 145) – is potentially inexhaustible. A limitation in connections leads inevitably to diminished creation and perception of meaning by narrowing the broadening of 'the meaning-horizon' (Dewey 1930, 191) for which Dewey so powerfully calls.

With regard to this it may be fruitful to recall the Deweyan conception of possibility as it is developed in *Art as Experience.* Dewey does not limit himself to the understanding of art and aesthetics. Rather, his insights work to reframe the conception of foundational educational and philosophical issues, such as inquiry, meaning creation and thinking at large. In a passage devoted to analysing the relationship between criticism and imagination, we find the following:

> A sense of possibilities that are unrealized and that might be realized are, when they are put in contrast with actual conditions, the most penetrating 'criticism' of the latter that can be made. It is by a sense of possibilities opening before us that we become aware of constrictions that hem us in and of burdens that oppress. (Dewey [1934] 1980, 346)

The statement, as often occurs when analysing Deweyan claims, works deeply at different levels, opening a) a theoretical level, b) an ethico-political and educational level, and c) an existential level.

At the theoretical level, it is worth noting that Dewey defines the sense of unrealised possibilities as "the most penetrating 'criticism' (...) that can be made". Remembering that unrealised possibilities may be thought of only by employing imagination (Dewey 1913, 94), we observe that 'the most penetrating "criticism"' is effected through imagination. This is not to say that imagination allows the complete enacting of criticism; instead, imagination plays a crucial role in the appreciation and evaluation of things.

In this regard, it is crucial to understand that the contrast between 'actual conditions' and a 'sense of [unrealised] possibilities' is not only necessary to open different possibilities and paths to pursue in the future; it is also the basis from which to penetrate 'actual conditions'. In other words, imagination enables us to understand the present and is the basis for inquiry. This leads us to the ethico-political, educational and existential levels. Here, the Deweyan call is clear and vibrant; it is a call toward our duty to imagine, to conceive of unrealised possibilities as things to effect. Namely, the Deweyan call is a call against every possible totalitarian thought, and his point is at once an educational, existential and ethico-political one. Possibilities, in Deweyan understanding, are indeed means of action, collective and personal. In addition, remembering that "[t]here is no limit to the meaning which an action may come to possess [for] the reach of imagination in realizing connections is inexhaustible" (Dewey 1930, 243), we may understand the educational endeavour as characterised by uncertainty at its very core. Paraphrasing Dewey, the more numerous and varied such conditions are, the richer and vaster is meaning-creation and, thus, living. Educationally speaking, this means that in the concrete practice of schooling, in the time of the daily classroom, space must be made for unstructured activities. These activities must be held in common and must exist without given ends and tracks. This is not to underestimate the role of the learning of given content, ways of knowing and behaving in education and society alike. Without such activities, even the basic level of socialisation is at risk. However, by fulfilling only the types of activities entailed and delivered by

the neoliberal educational agenda, socialisation is at risk as well because true socialisation stands on both acquisition and newness.

Then, we are not far from the truth in saying that the Deweyan account of meaning-creation is grounded in the experience of wonder we undergo in our ongoing interaction with others, the world and things, or, in Deweyan words, "when varied materials of sense quality, emotions and meanings come together in a union that marks a new birth in the world" (Dewey [1934] 1980, 267).

Wonder and education

Then, where might this lead teachers and educators in terms of thinking about the nature and role of wonder in schooling and education? If we understand education according to the role that wonder, unpredictability and radical possibility may play in it, we find a continuous expansion of meanings, activities, knowledge, environments and relationships. In wonder we experience the awareness that the world and even we ourselves are not at our disposal, that we are radically exposed to the very unpredictability of encounters with the world, others and things. Wonder is the evidence, I would say, that the world, others and experience do not easily map onto given orders. In Opdal's words, "[w]onder (...) always points to something beyond the accepted rules [thus evoking] a certain uneasiness towards the given" (Opdal 2001, 331). Wonder, then, may promote an open, sensible orientation to living and knowing. Wonder is there to remind us that words and concepts, though necessary, cannot fully capture the richness, variety and amazing uncanniness of living – and education, too, comes from what is other, risking, and even uncanny.

Wonder, in this sense, exceeds Plato's logos and concept of truth as related to the apprehension and certainty of vision. Wonder, in this sense, is at the same time behind and beyond words and conceptualisations. In this sense, wonder can trigger the possibility that both students and teachers can shift given ways of understanding, can think otherwise, thus changing the way they relate to each other; and that they can form new interpretations of the world and others, thus displaying the core of teaching and learning. Wonder is about questioning, even forcing the boundaries and security of one's certainties and identity. What teachers and educators may learn from wonder is a concern to be sensitive to both the radical singularity of students and the possibilities involved in teaching and education. Through wonder, both students and teachers may face the possibility of change, putting forth the sense of radical possibility entailed in education. It is through the indeterminateness opened up by such a conception that new forms of subjectivity and togetherness may emerge as well.

Educationally, this means that teachers have to also create something which, to some extent, is not knowable in advance; something they cannot predict and control in all of its features; something which, by necessity, has to do with risk and the unknown, both on the side of teachers and students.

However, here we come to a slippery point. The role of the teacher, when reading their activity in such a way, is both difficult and pivotal, and it can hardly be measured or assessed. Considering that wonder is entangled with the unknown, with mystery and even the unfathomable, what kind of methods should be used to govern such an inexhaustible experience? Moreover, is the 'risk' connected to such a disclosure worth pursuing? Who gives teachers the license to travel on paths they are unable to master in all of their features? To put it clearly, the problem with wonder when we come to curriculum and daily school practice is exactly that we can neither predict nor plan such an experience and, more importantly, what comes from such an experience. Then, in which way may teachers vouch for their work, if such a work is by definition entangled with the uncertain and even the unfathomable?

The problem, it seems to me, remains an open one. I would only make clear that by endorsing the experience of wonder I am not endorsing a kind of 'everything goes' model for teaching; such a model would be, in the best case, senseless, if not totally irresponsible. One thing that is clear is that the use of wonder in everyday schooling practice implies care, attentiveness and caution. And what the use of wonder in teaching may enhance is exactly a kind of awareness that makes teachers attentive to both the unpredictable qualities of their embeddedness in living educational situations and the unpredictability they actively produce in being engaged in education. This twofold uncertainty, rather than flowing into some nihilistic defeat of educational purposes, puts radical responsibility on both the side of the teacher and the side of the students, who intentionally produce new interactions in the ongoing educational conversation despite not knowing exactly what may come from such interactions.

This implies that students' attention and imaginative vision should be directed toward the point in which a subject matter emerges as such, thus focusing on the activity of producing contents – and here the neoliberal predefined framework is the least helpful. Here, I am arguing for a kind of existential and pragmatic engagement with learning contents, one that is able to create new points of interaction between disciplines, students' experience and living situations. Importantly, wonder entails an engagement of all levels of a subject's experience: cognitive, emotional, aesthetic, existential, even ethical. Or, better said, the experience of wonder is the collapse of all levels, the breaking of boundaries between these levels. That is also why wonder is closely connected

to newness. Then, to the extent in which education also aims at producing the conditions for newness to emerge, the potential of wonder has to be preserved and nurtured, along with students' imaginative vision and capacity to disrupt, suspend and play with curricular contents.

Wonder, then, may furnish the cue for a different conception of education and schooling, one in which, under the regulation of teachers, the space of not-yet, or the space of pure potentiality for growth, may emerge and new forms of subjectivities and meanings may arise. In this sense, the curriculum is not just a means to develop the skills required by the labour market, as the neoliberal agenda *de facto* promotes. It is also a matter of hesitation and waiting, one in which teachers and students attempt to dwell in pure potentiality for growth. Exactly such a dwelling allows for the possibility of newness (Arendt ([1958] 1998) and 'unattained possibilities' (Dewey 1929, 267) that, in turn, make education – and living – worthwhile. Furthermore, wonder may enhance a stance welcoming otherness and unpredictability – that is the ethical significance of wonder.

Thus, we come to see how the complex of meanings revealed by the Arendt-Dewey connection helps us to frame a conception of education that is significantly different from the neoliberal model. This different conception may help students to engage with the world in purposeful and open ways. Such engagement is created in ongoing interactions with the curriculum and disciplines, which are not a means to learn and acquire always-already pre-conceived skills and competencies, as occurs in the neoliberal discourse on education. Unpredictability, in the neoliberal educational picture, is only ostensible in that the entire set of competencies and learning outcomes that students are expected to perform comes as a package to both Nation States and schools. If interrelatedness among schooling, the world and living must be enhanced, schooling should not become – only – a matter of testing the right skills and knowledge. Rather, what we may call the space of not-yet must become the primary focus of schooling because it is this not-yet that, in turn, comes to define education. Thus, it is in the interplay between the curriculum and students' push to explore it that, under the regulation of teachers, the space of not-yet may emerge and new forms and meanings may arise. In this sense, the curriculum is not only a means by which to develop the right skills; it is also a matter of hesitation and waiting, one in which we attempt to dwell in pure potentiality for growth. It is exactly this dwelling that allows for a different type of education to occur. Teachers, navigating on the verge of the actual and the not-yet, are, in a sense, the shepherds of this newness and of the uncertain, fragile equilibrium created in classrooms that are willing to pursue such an eminent experimental gesture. On the contrary, by losing wonder, and

the risk and unpredictability that come with wonder, we would lose the opportunity to make room for newness – what Dewey calls 'a new birth in the world' (1980, 267) and what Arendt refers to as 'startling unexpectedness' ([1958] 1998, 177-178). Only through such a commitment to unpredictability the open space of possibility, the open space of not-yet, may come to light as a space in its own right, for it is through such a space that new means may be forged and new aims may be conceived of.

Curriculum, then, develops "within the sphere of action for the sake of possibilities not yet given" (Dewey 1917, 63). It seems to me that when losing sight of such a 'sphere' of 'not yet given', schooling dismisses a significant part of its task and runs the risk of becoming a mere matter of reproduction. If we conceive of education as the means by which human life gains its always-open meaning and society may gain the possibility to radically experiment and change, the experience of wonder deserves a place in both schooling and curriculum.

In conclusion, I wish to highlight that in an era in which education seems to be in the grip of economic demands and anti-democratic impulses, an alternative to both the current rise of right-wing populism and the neoliberal apparatus is required. The places from which such an alternative may be envisioned and the tools we may wish to use to address it in the concrete practices of schooling are different and diverse. I hope that the intersection I have attempted to propose between the Arendtian call for 'unexpectedness' and 'natality' and the Deweyan call for newness and the expansion of meanings may help teachers, educators and those who have a stake in education to resist neoliberal pressure and to envision creative ways of engaging with students and new generations in the concrete and crucial practice of 'coming into the world' (Arendt 1977, 167).

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2 The Importance of Wonder in Human Flourishing

Jan B.W. Pedersen

> *We must look at the question more closely. For it is not a trivial one; it is our whole way of life that is at issue.*
> (Republic *352d; Plato 1987)*

Preliminaries

'Wonder' and 'human flourishing' are essential elements in the *Wonderful Education Project* but these elements are in themselves complex, elusive and difficult to fully grasp. Naturally, this contributes to the wondrous nature of the *Wonderful Education Project* and turns out, for my part at least, to be one of the reasons why participating in the project is so thoroughly engaging.

This paper focuses on the importance of wonder in human flourishing and is orientated towards the dynamics between the two, but with an emphasis on how the former is important for illuminating the latter. It begins with a preliminary sketch of both wonder and human flourishing and subsequently moves on to highlight three aspects of human flourishing: 1) 'Individuality', 2) 'Relations' and 3) 'The political', and why these play to wonderment.

On the philosophy of wonder

Our understanding of wonder is growing steadily and in the last few years, exciting new additions to the *corpus admirans* have appeared. Genevieve Lloyd's *Reclaiming Wonder* is important in this respect

because it emphasises how wonder challenges certainty and ideals related to such a position (Lloyd 2018). Likewise, the anthology *Medicine and Paradoxography in the Ancient World*, edited by George Kazantzidis, is of great value as it points out how *thauma* in the world of the ancients was the centrepiece of serious discussion on what constitutes reality and of significance in the dialogue between medicine and folklore (Kazantzides 2019).

The continuing growth of wonder studies is understandable, as studying wonder is a troublesome, bewildering yet an intriguing affair. For the thaumatologist this is clear from the start because unlike external, observable phenomena like, for example, a red kite against a blue summer sky, wonder qualifies as an internal mental phenomenon that appears in relation to something the mind beholds yet struggles to understand.

What causes wonder or prompts its emergence can be both external and internal. The Montgolfier brothers' successful launch of their first balloon in 1783 containing 22,000 cubic feet of hot air is an excellent example of an external object that, at least at the time, proved a marvellous sight. The giant flying balloon was new, extraordinary and bore with it sweet promises of the fulfilment of the age-old dream of flying dating back at least to the myth of Icarus (Holmes 2008, 128).[1]

Tangible artwork like the hand stencils found in El Castillo Cave in northern Spain is another example of an external object that may cause wonder to arise, and the reason is partly found in the fact that artworks like these carry with them the head-spinning notion that archaic humans living 40,000 years ago were likely to enjoy and make art as much as we do today. Furthermore, one might point out that even though archaic humans are extinct and lived in terms of knowledge and understanding in a world very different from our own, we are very much connected in terms of our humanity. Despite differences in time and place, archaic and modern humans could well be grouped together under the label of homo admirans – wondering man, which is wonder provok-

1 It is important to realise that when wonder arises in relation to an external happening our subjectivity is involved. This is because we are creatures of perception and interpretation, and do not have a one-to-one relationship with the external world. Now this is not to say that wonder is absolutely relative because it is possible to speak about the 'density of wonder', meaning that some objects elicit wonder better than others. To exemplify, because of its rarity and extraordinariness a celestial traveller like the comet Hale-Bopp can lift us out of our immediate context, engage our imagination on a metaphysical level and remind us of our place in the universe in ways an austere parking lot cannot (Pedersen 2019, 120-121). In light of wonder being a virtue one might also argue that there is such a thing as 'wondering appropriately' and that for something to be worthy of wonder it has to meet an 'acceptance criterion for wonderment' meaning that for an object to be worthy of wonder it has to be extraordinary, vivid and significant not just to the wonderer but to others as well (Pedersen 2019, 119).

ing indeed because it highlights the possibility that members of a species other than our own may harbour the ability to wonder.[2]

Wonder grounded in internal happenings signals that wonder can also arise from dealing with abstract or intangible objects, such as concepts or ideas. Ask yourself what it means for something to be eternal or everlasting and for something to be finite or going out of existence, and the case should be quite clear. The same applies when we ponder the nature of numbers or values, because such entities are not external objects. Unless encountered *a posteriori* in spoken or written form, numbers and values belong solely to our inner experiential world – they are as it were inner occurrences.

Wonder studies also fascinates because wonder is difficult to classify. Many a scholar labels wonder an emotion or feeling, which is understandable because as such, it can be situated neatly within the sciences in general and the field of psychology in particular. However, wonder is a giddy thing and resists pigeonholing. In addition to classifying wonder as an emotion or feeling, one might characterise it as an attitude, a mood, a value or an activity, understood as something a person does and not merely something that someone experiences. Pushing the envelope, one might also argue that wonder can be understood as a particular activity, i.e. something that one does in a specific way – a virtuous way even.

Furthermore, the wonder scholar must take into consideration that wonder has 1) a foggy etymology that merely hints to us what wonder means, 2) a complicated history dating back to ancient times signifying that our view of wonder changes over time, and 3) a close and confusing resemblance to other

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2 At present, the term 'archaic humans' denotes either a species in the genus 'homo' that is extinct or a fossil population or deme of the 'homo' genus that presents a set of phenotypic, i.e. morphological, traits that are not found in extant human populations. To this end, it is common in palaeoanthropology to describe Neanderthals as 'archaic'. See Reich et al. (2010, 1053); Trinkaus (1993); and Fu et al. (2015). Even early anatomically modern human specimens understood as 'homo sapiens' and not 'homo sapiens neanderthalensis' or 'homo neanderthalensis' have been referred to as 'archaic' such as those from Es-Skhul. See Stringer et al. (1989). I am grateful to David Clinnick of Saint Mary's College of California for pointing this out to me. For more information on Palaeolithic art and how hand stencils may inspire wonder, see Walker, Clinnick, and Pedersen (2016). In this respect it must be noted that in relation to Spanish parietal art the first results using U-series dating produced an age estimate of 40,800 years ago on one painting from the site of El Castillo. This result possibly suggests that Neanderthals understood as archaic humans were responsible for this painting. See Pike et al. (2012). However, at 41,000 years it is also possible that early modern humans may have made this painting. More recent dating at the sites of La Pasiega, Maltravieso and Ardeles in Spain have all produced dates on parietal art securely within an age range in which only Neanderthals are known to have occupied Western Europe. See Hoffmann et al. (2018). These results add to a growing body of evidence that Neanderthals were capable of producing symbolic material culture and it is for this reason that, regardless of the exact taxonomic relationship between Neanderthals and anatomically modern humans, the binomial descriptor 'homo admirans' has been given in this paper to both modern humans and the archaic humans who produced parietal art.

extraordinary states of mind including awe, horror, the sublime, curiosity, amazement, admiration and astonishment (Pedersen 2019, 19-52).

Can wonder be defined? Naturally, but given the uncertainty surrounding wonder, any definition, old or new, must be approached with caution.

In 1605, natural philosopher and proto-scientist Francis Bacon published his opus *The Advancement of Learning* and in this particular work we find a definition of wonder that reads 'wonder is broken knowledge' (Bacon 1954, 7). Bacon's definition is attractive in its simplicity and pushes the idea that upon realising that our knowledge about a given matter is incomplete or broken wonder emerges. We wonder as it were at what we cannot fully grasp.

Fast forward to 2003: philosopher Philip Fisher puts forth in his influential *Wonder, the Rainbow, and the Aesthetics of Rare Experiences* that wonder is 'a sudden experience of an extraordinary object that produces delight' (Fisher 2003, 55). Important here is Fisher's emphasis on the 'suddenness' and 'delight' of the experience of wonder and that the object responsible for the emergence of wonder must be of an extraordinary kind.

My own definition traverses some of the same territory, adds something new and goes like this: "Wonder is a sudden experience that intensifies the cognitive focus and awareness of ignorance about a given object." (Pedersen 2017, 25; Pedersen 2019, 1). To further enrich the picture of wonder one might add that this peculiar state of mind owes its joyfulness to the fact that the experience situates us in a world made anew – a world where the term terra incognita retains its weight, its original meaning, and urges us to become fully fledged explorers. In this light wonder presents itself as a mode of inquiry, a setting of the mind even that encourages the wonderer to get to know the object of wonder or, failing that, at least widen her understanding of it.

All this makes wonder as a subject matter worthy of wonder and thus not something we should be taking lightly. Our knowledge of wonder is at best broken, which connects us to thauma-haunted Theaetetus from Plato's eponymous dialogue and reminds us that the individual who labelled Iris the daughter of Thaumas was indeed a most excellent genealogist.

On the philosophy of human flourishing

"To live a happy life, my brother Gallio, is the desire of all men, but their minds are blinded to a clear vision of just what it is that makes a happy life" (Seneca 1932, 99). So begins stoic philosopher Seneca's moral essay 'On the Happy Life' and it is a fitting beginning for an undertak-

ing such as his but also for our current endeavour, which is to shine some light on the intricate, troublesome and much related concept of human flourishing.

When a modern academic orbits the scholarly landscape surrounding human flourishing it quickly becomes clear that although flourishing originally was addressed by ancient Greek philosophers such as Plato and Aristotle, modern scholars working on human flourishing hail from a variety of different fields and disciplines.[3] Such academics often emphasise a particular aspect of flourishing that relates to their chosen field, thus highlighting a particular view of the subject matter. In support of this stands the fact that psychologist Martin Seligman thinks that flourishing involves a high degree of personalisation (Seligman 2011); and the same goes for economist Richard Layard, whose view of flourishing focuses on the satisfaction of basic economic needs (Layard 2011).

Additionally, it quickly becomes clear that modern scholars working on flourishing often have an interest in merging or applying human flourishing to a field of study with some practical end or profession in sight. In this respect philosopher Harry Brighouse is a good example, because in his book *On Education* he argues that the main purpose of education is human flourishing and that schools should help children live flourishing lives (Brighouse 2006, 42.)[4] Another example is nurse Derek Sellman who in his book *What Makes a Good Nurse: Why the Virtues Are Important to Nurses* argues that human flourishing is a legitimate end of nursing because nurses take care of more-than-ordinarily vulnerable people who unlike normal people face additional difficulties when it comes to living a flourishing life (Sellman 2011, 75).

Given that academics within psychology, economics, education and nursing are contributing to the seemingly ever-growing body of work on human flourishing, one might get the idea that the subject in modern times has outgrown the category of philosophy and is perhaps best viewed as a science. After all, the above-mentioned fields do lean on empirical work. As tempting as this may be, I should think it wise to keep referring to human flourishing as a philosophical theme and my reason for thinking so is grounded partly in the philosophy of

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3 Although Plato's approach to ethics is virtue-based and focuses on well-being or happiness he does not address the concept of 'eudaimonia' directly in any of his dialogues. The first to tackle 'eudaimonia' directly is Aristotle and he does so in several of his works including *The Eudemian Ethics*, dedicated to a pupil of his named Eudemus of Rhodes, and *The Nicomachean Ethics*, dedicated to either Aristotle's father or his own son, who both carried the name Nicomachus. One might also include *Magna Moralia* and *Virtues and Vices*, but although these works are incorporated in the corpus Aristotelicum scholars disagree on their status. Some claim they are actual works of Aristotle while others think them spurious.

4 For more recent scholarship giving thought to the relationship between the concept of human flourishing and education see De Ruyter (2007); Kristjánsson (2017); Wolbert, De Ruyter, and Schinkel (2017); and Wolbert, De Ruyter, and Schinkel (2018).

Bertrand Russell who stated that "science is what we know, and philosophy is what we don't know" (Russell 1960). When we refer to human flourishing as a philosophy, or a subject matter for philosophy, we simultaneously acknowledge that it is an open matter – a matter in which we all can have a say because there is no simple *fact* of the matter. Of course, this does not mean that there is no room for science or facts when it comes to understanding how human beings flourish. On the contrary, there is ample room for 'what we know' but because flourishing depends in part on the 'flourisher' it is impossible to present a thin, precise description of the flourishing human being that is immune to criticism. Thus, a signature quality of human flourishing is that it only lends itself to be described in thick, vague terms. In other words, it resists the scientific searchlight to such a degree that dark corners remain, which not only makes room for individuality but also philosophy and, indeed, wonderment.

Now a key feature of the concept of human flourishing is that it seeks to provide a reasonable answer to the ancient question of how we should live and thus its rightful place within philosophy is in the discipline of ethics or moral philosophy.[5]

Philosopher Elizabeth Anscombe's 1958 article 'Modern moral philosophy' is important in this respect because it sparked a renewed interest in the works of Aristotle and virtue ethics. Importantly, she pointed out that the translation of the Greek concept of 'eudaimonia' into 'well-being' or 'happiness' was misleading because to our modern ears such renditions cater purely to subjectivity (Anscombe 1958, 3). In Anscombe's view 'flourishing'[6] is a better translation of 'eudaimonia' because to be 'eudaimon'[7] or to live an 'eudaimonic' life is at least partly objective and encompasses much more than what the feeling or emotion of happiness can contain and the life of pleasure can achieve.[8]

To Aristotle as well as modern neo-Aristotelians, 'eudaimonia' qualifies as the 'summum bonum', the highest good – that which we ought to aim for in

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5 Ethics comes from the Greek word 'ethikos' which Aristotle introduced at the end of the first book in the *Nicomachean Ethics* (*NE* 1, 1103a4-10; Aristotle 2003). By separating two kinds of virtues namely 'arethai ethike' meaning ethical virtues and 'arethai dianoetike' referring to intellectual virtues he could spell out what sort of character a flourishing person should develop. Moral philosophy deals in morals, which is a word derived from the Latin word 'moralis' that was introduced by stoic philosopher Cicero in *De Fato* in order to have a word in Latin that corresponded to the Greek 'etikos' (*De Fato* 1; Cicero 1942).

6 Rendering 'eudaimonia' into flourishing is of course not perfect because it has botanical connotations and human beings are not plants. Nevertheless it makes sense to speak about human flourishing because just like a plant needs certain conditions in order to flourish so does a human being. For example a human being needs oxygen in order to live and friends around in order to live well.

7 In Greek 'eudaimon' is a compound word consisting of 'eu' meaning 'good' and 'daimon' meaning 'spirit.

8 Aristotle is pretty scornful about the life of pleasure and enjoyment. People in pursuit of pleasures as a way of life are to him vulgar, slavish and live the life of cattle (*NE* 1, 1095b19-20).

life precisely because it is a goal in itself and not a means to something else. To clarify, one might say that everything we do in life must contribute to the highest good – to 'eudaimonia' – regardless if it involves embarking on a particular education, establishing a family or buying an ice-cream on the way home from work. If a person embarks on activities that do not contribute to her flourishing – on activities that makes the person languish – then that person is successfully combating her own flourishing. Elevating flourishing to be one's ultimate goal in life and then not pursuing it is contradictory, self-defeating and a sign of extreme folly.

This is all very well and especially so for the person leaning towards the wisdom of the peripatetic philosopher from Stagira, but how does one actually flourish? Well, herein lies the rub, because it is difficult to find a rendition of flourishing – let alone a definition of the concept that satisfies every stakeholder. In our age the people invested in human flourishing are varied and diverse, and sometimes one will find advocates that are downright antagonistic in comparison. To exemplify, let us take a brief look at two very different attitudes to flourishing, beginning with Aristotle's.

As mentioned, Aristotle equates human flourishing with the *summum bonum*, which he defines as:

> The active exercise of [the] soul's faculties in conformity with excellence or virtues, or if there be several human excellences or virtues, in conformity with the best and most perfect among them. Moreover this activity must occupy a complete lifetime. (*NE* 1, 1098a15-20)

Aristotle's definition is particular because it presents human flourishing as an activity and something that requires the development and display of virtues. Having said that, it is also troublesome because judging from the definition it is not entirely clear what The Philosopher[9] means by *bios teleios* or 'complete lifetime'. He might be referring to 'a long life' or a 'whole life', which certainly makes sense given that he in relation to the above quotation states that 'one swallow does not make a spring, nor does one sunny day' (*NE* 1, 1098a18-19) and later puts forth the somewhat controversial statement that 'children cannot be happy' (*NE* 1, 1100a1). To Aristotle it simply does not make sense to talk about a flourishing life if one merely flourishes during a brief period, nor does it make sense to speak about the flourishing of children because they are *ateles*, immature or incomplete, and have as it were not yet embarked on a life aim-

9 In medieval times church father Thomas Aquinas referred to Aristotle as 'The Philosopher'.

ing at human flourishing.[10] Further evidence that Aristotle thinks of *bios teleios* as a whole or long life can be found in his often ignored companion piece to the *Nicomachean Ethics, The Politics*, where he puts forth that practical wisdom or intellectual prime does not manifest until one reaches the age of fifty or thereabouts, indicating that for him flourishing was an ongoing exercise extending beyond middle age (*Politics 7*, 1329a1).[11]

Many a contemporary philosopher advocating human flourishing would probably support the idea that flourishing is something that happens over the course of a whole human life, because a life cut short prevents a person from flourishing in the fullest sense or to her fullest potential. Furthermore, it would seem that most people need a certain amount of time to develop the virtues needed in order to live well because appetites, feelings and emotions are not easily understood, least of all moderated.

However, most people are not all people and if, for example, a Christian were to speak about human flourishing that person would not necessarily agree with Aristotle about *bios teleios* or the notion that flourishing takes place over a whole life. Writer, public speaker and former executive editor of *Christianity Today* Andy Crouch is one such Christian and he explains that for human flourishing to have any meaning for Christians it must be infused with Christian content and that involves looking to Jesus of Nazareth as an exemplar of flourishing or, to put it differently, it involves looking at Jesus' human life as a picture of human flourishing. According to Crouch, this means that flourishing is not about being affluent, owning a home, being popular or – important to our current endeavour – living a long life, but involves as he puts it "a kind of profound truthfulness to God and other people [that] leads to healing for other people and to the driving out of the demonic" (Crouch 2017).

In comparison, Aristotle and Crouch's respective views are at odds because whereas Aristotle seems to say that flourishing is something that happens over the cause of a long or whole life, Crouch holds that longevity is irrelevant to flourishing. The reason behind Crouch's attitude is at least twofold. First of all, Jesus did not live to become an old man as Aristotle[12] did but died by Roman hands at thirty-three, nailed to a wooden cross. Thus, if Jesus represents the

10 For more information on the problem of Aristotle's bios teleios see (1995).

11 I am grateful to philosopher C.D.C. Reeve of the University of North Carolina and Chapel Hill for pointing this out.

12 In biographer Diogenes Laertius' *Lives of the Eminent Philosophers* we find that there is some uncertainty about at what age Aristotle died and under what circumstances. Laertius holds that according to Eumelus Aristotle died at the age of seventy owing his demise to drinking wolfsbane. He also refers to Apollodorus who claims Aristotle died at sixty-three of natural causes. (Diogenes Laertius 2018, book V, ch. 1).

flourishing person par excellence it follows that a long life is not an important factor when it comes to living well. Secondly, many a Christian thinks that when Jesus began his ministry he was already a paragon of virtue, because his humanity and divinity at this particular stage was unified in one hypostasis or individual existence. In other words, Jesus was perfect during his ministry and thus in no need of flourishing.

If my interpretation of Crouch's view is correct the Christian position is – philosophically speaking – somewhat problematic. This paper does not allow for a full exposition of why this is true, but in order to manifest why the neo-Aristotelian approach to flourishing dealing in a thick, vague description of how we ought to live is favourable and more robust, I will in what follows highlight a few problems with Christian flourishing.

First of all, the idea that Christ has two natures is paradoxical. This is not necessarily a problem for a Christian for whom, as philosopher Søren Kierkegaard writes, faith begins where the thinking ends (Kierkegaard 1989, 52). However, it is a problem for a philosopher, for whom paradoxes are wonder inducing and a sign that something is odd or not quite right.

If we for argument's sake were to bypass this particular paradox, we would face yet another conundrum involving in what sense Jesus actually flourished and if his divine flourishing (if we can indeed speak about such a thing) is at all relatable to creatures like us who only harbour one nature – a human one.

Now a Christian with reference to the notion of Christ's double nature could well hold that Jesus is very relatable indeed and a perfect exemplar of flourishing precisely because of his humanity. However, such a stance invites questions about how Jesus actually flourished and this means that not only are the years revolving around his ministry important, but his entire thirty-three year old life is of importance. If Jesus' development could somehow be imitated, copied or otherwise emulated a well-lived life would in theory be more or less guaranteed for the person seeking human flourishing. Alas we know practically nothing about the greater portion of Jesus' life. The so-called 'silent years', understood as the period between when Jesus was twelve and when he was thirty is an utter mystery.[13] Now one could, as indicated earlier, insist that

13 Some hold that Jesus worked as a carpenter during those silent years while others push the apocryphal notion that the young Jesus travelled with Joseph of Arimathea to Glastonbury in the south of England. This particular legend was immortalised by Romantic poet William Blake in the preface to his epic poem *Milton: A Poem in Two Books,* written between 1804 and 1810, which includes the lines: "And did those feet in ancient times, Walk upon England's green mountains" (Blake 2014, 5). 'Those feet in ancient times' refers to the young Jesus, and the idea of him strolling about the English countryside has held a special attraction for many an Englishman ever since. It even inspired the unofficial English 1916 anthem 'Jerusalem' that, equipped with Blake's famous lines and moving music written by Sir Hubert Parry, to this very day is a steady part of the 'Last Night of the Proms' repertoire.

Jesus' development is irrelevant because his divine nature makes him supreme, equipped with ideal passions and a perfect character, and thus flourishing simply does not apply to him. However, then the issue of being relatable presents itself again because in this light Jesus becomes as far removed from the everyday life of human beings as any literary 'Mary Sue'.[14]

To press Crouch even further one could ask if it is not also conceivable that Jesus would have flourished to a higher degree if he had had the fortune to live beyond the age of thirty-three. That he had an interest in flourishing beyond his thirty-third year is definitely possible, because according to the gospels of Matthew and Mark, Jesus in the ninth hour of languishing on the cross suddenly cried out in a loud voice "My God, My God, why hast thou forsaken me?" (King James Bible 2007, Matthew, 27:46, and Mark, 15:34). This indicates that Jesus could envision a better life than the one he was living while suffering crucifixion, which is important given that we are talking about flourishing – our flourishing as human beings to be precise.

So where does all this leave us? Well, it is clear that conceptions of human flourishing may greatly differ, and that care has to be taken when we encounter or use the concept of flourishing. It also makes clear that we can argue about wherein human flourishing consists and that, given human flourishing as a concept has gained popularity and in some cases detached itself from its philosophical roots, we must be prepared to discuss human flourishing in various arenas so that it remains an embracing concept. At the same time, it brings to the table an invitation to wonder deeply[15] or reflectively[16] about what human flourishing actually is, because the matter of which we speak is hazy, subtle and difficult to grasp.

Now in my humble opinion there are three sets of spectacles one must view flourishing through in order to get a reasonable grasp of its complexity and importance. Common to these spectacles of which the first, as announced, focuses on 'individuality', the second on 'relations' and the third on 'the political', is their connection to wonder; and this we shall turn to now.

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14 A 'Mary Sue' is an idealised perfect fictional character with the ability to perform flawlessly without any need for studying, training or experience. The term 'Mary Sue' originates in a character created by Paula Smith in 1973 featuring in the story 'A Trekkie's Tale' published in the Star Trek fanzine *Menagerie*.

15 For an excellent article on 'deep wonder', see Schinkel (2017).

16 For an important article on how wonder can turn into philosophical reflection, see Opdal (2001).

On the importance of wonder in human flourishing

A key part of human flourishing is 'individuality' and the art of knowing oneself, understood as the realisation of not only 'who' one is but also 'what' one is.

The 'who' highlights personal identity, preferences, talents, tastes, traits and so forth, indicating that flourishing comes in many forms and that it relates to an individual. It really does not matter if you are a banker with an interest in house music, an archaic human enjoying making hand stencils or a philosopher with a passion for weird fiction. Human flourishing embraces plurality and merely ushers an individual to discover the goods needed in order to make her life go well.

In this respect, wonder is called for because it is neither immediately obvious nor fixed wherein these goods consist. Naturally, basic goods such as air, water, food and so forth are easily identifiable to most people, and to some even idiosyncratic goods are identified with ease. To exemplify the latter, the pursuit of mathematics and logic was obviously a good for intellectuals par excellence Bertrand Russell and Alfred North Whitehead, because if they were not, why would these learned scholars embark on their monumental ten-year quest to complete *Principia Mathematica*? It is hard to imagine anything short of talent and enjoyment could propel a laborious undertaking such as theirs forward, especially when we consider that originally the work was supposed to be finished within a year and publishing *Principia Mathematica* ended up costing the authors a lot of money.

The same can be said about rock climber extraordinaire Alex Honnold who is the only person in the world to have free soloed El Capitan in Yosemite National Park in the United States – and survive. If he did not have a talent for climbing and enjoy the activity, surely free soloing – which is extremely dangerous given that there are no ropes involved – would not qualify as a good for a man like him.

Now although goods may present themselves as obvious for some people one cannot take for granted that this is always the case. Some goods hide in murky water and are not easily discovered because they are intertwined with an individual's realisation of what actually stands in the way of that very person's flourishing. To exemplify, a former highly intelligent undergraduate student of mine was plagued by ideas that in order to be someone of value, she had to engage with deep existential thoughts brought forth by 20th-century thinkers and celebrate the angst and dark moods her intellectual peers described as unavoidable side effects to this singular activity – and prescribed as things to indulge in. The effect was dire and induced in her a certain gloomy analy-

sis-paralysis revolving around how she should live her life until, grounded in wonder, she realised that she would flourish to a higher degree if she could leave this particular attitude behind. Her wonderment marked a dramatic change for the better as it enabled her to finish her profession-orientated education, land a stable job, move in with her partner and from here get on with her life in a flourishing and, I dare say, happier fashion.

Moving on to the 'what' in individuality, we might say that it differs from the 'who' in the sense that it is indicative of species-membership and how an individual human being's flourishing is tied up with his or her nature or, to put it differently, his or her biology. Wondering about what it means to be a member of homo sapiens in a biological sense is crucial for one's flourishing because the good life for a human being is not the same as the good life for an American bison, a Komodo dragon or a Box jellyfish. Furthermore, not every activity a human being might indulge in is necessarily good for a human person[17], meaning that creature-hood acts as a framing mechanism and has a say in what goods are actually good for us.

Another way of highlighting the importance of the wondrous 'what' in individuality is to focus on what kind of a human being one is and compare it with trends in society that prescribe a supposed universal human good. To illustrate what I have in mind, let us for a moment dwell on the fact that everyone is born with a different skin type. Measured against the Fitzpatrick scale, I personally score a whooping II, meaning that I tan minimally and my skin burns quite easily when exposed to sunlight. Given that I live in the northern hemisphere this is not too much of a problem, but if I were to move to Port Hedland in Western Australia or Yuma in the U.S. state of Arizona, two of the most sunniest places on the planet, I would have to be very mindful of protecting my skin because it simply could not handle a dramatic increase in exposure to UV light. Unless I adapted and actively sought to protect myself against the damaging rays, I would risk developing burns and eventually a melanoma of

17 A common attitude is that only human beings are persons and thus a reference to 'human persons' may seem an unnecessary sophistication. However, it is highly problematic to outright deny non-human animals personhood, and it seems that most parties invested in this singular view are fuelled by a desire to simply deny non-human animals moral status and are not interested in personhood as such. If we adopt philosopher Peter Singer's view of personhood, stating roughly that in order to be a person one must have an awareness of self over time, it seems quite possible that complex mammals like an orangutan, the large arboreal ape living in Borneo and Sumatra, may qualify as person as much as a human being does (Singer 1999, 110-117). Naturally, this allows us to marvel at the possibility that human beings are not the only creatures on the planet with moral status and that our desires and preferences do not necessarily trump those of creatures such as an orangutan. Interestingly, particularly people living in the West might also be exercising a certain cultural bias when it comes to attitudes towards non-human persons because if we look closer at the 17th-century Malay word orangutan it translates into 'a person living in the woods'.

sorts and, in the worst-case scenario, die prematurely (Calzavara-Pinton et al. 2018).

Now, I grew up in Denmark in the 1980s and 90s, a period where being blond and sporting a dark tan was highly fashionable for men and considered a good in popular culture. This view was echoed in magazines and films, with male actors such as Rutger Hauer, Don Johnson and Julian Sands as unquestionable exemplars. Being somewhat blonder than I am today, naïve and eager to cut an attractive figure, I would spend a good part of my summers doing my best to tan. And when the days got shorter I, like so many others, would occasionally substitute the natural sun with the tanning bed. I continued this practice until, in my twenties, I moved to central London to work at what was then called Middlesex Hospital. During my time in London I enjoyed a conversation with a physician of Indian descent who, when I informed him about my relationship with the 'sun', firmly looked me in the eye and told me that if I did not change my extreme ways I, based on the science available to him, would face some form of skin cancer within 20 years. "You are not like me," he said gravely. And the effect was wondrous, because I was unexpectedly lifted out of a particular culture of understanding and situated in a larger world where the sanity of my culturally induced aesthetic preferences was questioned by a medical man whose knowledge of the good for me paid attention not so much to 'who' I perceived myself to be (or wished to be) at the given time but 'what' I was.

Moving on, let us now change spectacles and look at human flourishing while being mindful of the importance of 'relations' in human life. Relationships or friendships have had a place in the literature on human flourishing for a long time. Plato dedicated parts of the dialogues *Lyses, Phaedrus* and *Symposium* to the topic. But the most striking of all ancient writing concerning the matter we find in book eight of the *Nichomachean Ethics*, where Aristotle states that a friend is another self and that without friends no one would choose to live even if they had all other goods at their disposal (*NE* 9, 1166a31-32).

To capture some of the rationale behind this remarkable view it pays to focus on the notion that human beings gain much of the pleasures in life out of being with other people. Naturally, this ties in with the continuation of the species and family life, but also with how humans provide each other the necessities of life, be it food, shelter, comfort, safety or education, to name a few. To some this may sound prosaic, but it is nothing less than a marvellous feature of human life because no matter how heroic and spectacular a person might be, she is not a self-sufficient island. Everything a person has in terms of competence, skill, knowledge and understanding is not purely a result of that

person's labour. Each of us stands on the shoulders of giants[18] and we all are in one way or another indebted to those who went before us. Unlike shark pups, human babies are not miniature adults and their life, survival and further development into someone who can take charge of their flourishing depends on relations.

The dependency of human beings on others is not restricted to infancy; human beings depend on others throughout their whole lives. To illustrate this, consider for a moment the Greek legend of Leander and Hero. The two lovers live on opposite sides of the Hellespont and every night Leander swims across from Abydos to Hero in Sestos, guided by a light she displays. The legend has various components: great emotional upheaval, or love if you will, but also the skill of swimming, which one may reasonably assume Leander learned from someone he met earlier in his life who, in turn, acquired this skill or was inspired to develop this skill from an even earlier source.

Consider also the physician who kindly and quite rightly drew my attention to the limitations of my fair skin. The knowledge he conveyed to me on that memorable day in London many years ago was the fruit of the labour of many an inquisitive scientist or physician specialising in dermatology or perhaps oncology, and whose work he had become familiar with possibly through the professors responsible for his education in medicine.

Now, in both cases we are dealing with persons whose actions require particular skills or knowledge that have been handed down to them; and if any of the persons involved 'sees further' it is precisely because they are standing on the shoulders of giants.[19] That, and the notion that human beings need others in order to flourish as humans, should thus be quite clear and especially so when we consider the beneficiary in the last example.

The fact that human beings depend on one another in order to flourish is important, but sometimes the sense of dependency is misperceived or perverted, and in such cases wonder is called for. To exemplify, many years ago I was working as an intensive care nurse and a lady was brought into the ward with multiple fractures to her ribcage, arms and legs. On top of that, her face was all bruised. She could hardly see because the tissue around her eyes was swollen and disfigured. Before I learned what had happened to her, I considered the possibility that she had been in a terrible road accident or something

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18 'Standing on the shoulders of giants' originates in the Latin phrase *nanos gigantum humeris insidentes* but there is some controversy concerning who coined the phrase. Some scholars highlight medieval philosopher Bernard of Chartres as the source, but medievalist Umberto Eco points out that the aphorism originated in the works of medieval grammarian Priscianus Caesariensis (Merton 1993, xlv).

19 Isaac Newton is famous for using the expression "If I have seen further it is by standing on the shoulders of giants" (Newton 1675).

similarly horrific. But when I studied her voluminous medical file I learned, to my surprise, that she had fallen down the stairs in her own home. I also learned that this was not the first time she suffered a nasty fall, and as I read on it dawned on me that there was practically speaking not a single bone in her body that hadn't been broken at some point in her adult life due to some freak accident. No one can be that clumsy, I thought, while considering the obvious – that she was the victim of domestic violence. To cut a long story short, the obvious turned out to be correct and, being a nurse with a deep interest in my patients' lives and minds, I set out to discover why on earth a beautiful lady in her early thirties with a long life ahead of her would stay in an abusive relationship. Four days later I learned the truth, or at least parts of it. She had no one in her life except her abusive boyfriend and was convinced that no one else in the wide world would ever be interested in her. She loved him, she said, and would rather be in a relationship with him than being alone because being alone utterly terrified her.

Without getting into a lengthy discussion on the elusive topic of love and the pangs of loneliness, I would argue that the outlook of the poor lady is one that lacks wonderment; and this partly has to do with her assumption that of all the millions of men in the world, only her abusive boyfriend would be interested in sharing a life with her. There is absolutely no reason for thinking that this is the case and her assumption seems to be the product of being subjected to tyranny and being extraordinarily vulnerable. Additionally, her inability to recognise that her boyfriend's extreme ways were preventing her from flourishing and would one day in all likelihood be the end of her is (from an external point of view) bizarre, devoid of wonder and highlights a disturbing lack of self-care. This is deeply regrettable because on top of being a victim of years of debilitating domestic abuse, she is also a victim of what one in an extreme case like this may describe as the abysmal phantasms of her own mind.

To sum up, human beings are dependent on one another in order to flourish and thus relationships or friendships can rightly be viewed as goods. But in order to flourish one must consider very carefully the relationships one has. Obviously, some relationships are good and conducive to human flourishing, while others are dysfunctional, harmful and only lead to languishing. If the latter is to be avoided, it makes sense to set aside a little wonder for Aristotle's notion that a friend is 'another self' and just how the implications of this piece of wisdom come to bear on our behaviour.

Pushing ahead, let us now put on the third set of spectacles and look at human flourishing while considering the political aspect of human life and how it plays to wonder.

Towards the end of the *Nicomachean Ethics* Aristotle announces that the philosophical deliberations he has put forth in relation to the ethical life continue on a larger scale in view of human beings as *zoon politicon* or political animals. When it comes to understanding human flourishing, it is not enough to wonder about individuality and relations alone. We must also consider that human beings flourish best in communities. Therefore, it is important to wonder about what the constitution or political structure of a community that supports human flourishing should look like, and if the society in which one lives is conducive to flourishing.

As to the question of what a society in support of human flourishing should look like, Aristotle provides his answer (or parts of it) in the *Politics*. However, to modern people his vision is troublesome, as it supports slavery and ranks men superior to women (*Politics* 1, 1254b13-14).[20] Having said that, Aristotle got something right when in the *Politics* he wrote that the city-state came into being for the sake of life but exists for the sake of the good life (*Politics* 1, 1252b29). The purpose of the state is to enable its population to live flourishing lives and as the state is comprised of citizens, an important part of a flourishing life is to take an interest in public affairs. Failure in this regard jeopardises the condition of the state, and increases the risk of citizens not being able to live flourishing lives and being subjected to the rule of evil or foolish people.

To put some weight behind these words let us take a brief look at the abhorrent practice of female genital mutilation (FGM). FGM is the ancient practice of removing parts or all of the female genitalia and the United Nations Population Fund (UNFPA) estimates that around 200 million girls and women alive today in various countries around the globe have undergone some form of FGM (UNFPA 2019). Often the mutilation is done to girls between birth and 15 years of age who, if they survive, in the aftermath face a life of tremendous sufferings in the form of severe pain, urinary tract infection, formations of cysts, dyspareunia, sexual dysfunction and childbirth complications, to name a few. The rationale behind FGM is rooted in everything from a desire to control women's sexuality to myths about uncut clitorises growing to the size of penises, religion (or misunderstandings of religion), aesthetics or simply the ways of a particular cultural group who offers girls and women the prospect of condemnation, harassment and ostracism if they do not subject to the practice (UNFPA 2019).

FGM has a colossal negative impact on the flourishing of millions of girls and women worldwide and if a community large or small supports the practice

20 For a discussion on Aristotle's view of men, women and slaves see Stauffer (2008).

it fails to support human flourishing. Admittedly, this is a strong statement but given a choice and equipped with a full understanding of the consequences of FGM, no one would ever choose to submit themselves to such a practice. In her 1988 poem 'My grandmother called it the three feminine sorrows' Dahabo Musa, hailing from Somalia where FGM is widespread, writes: "It is what my grandmother called the three feminine sorrows: the day of circumcision, the wedding night and the birth of a baby" (Abdalla 2006, 187). Now, none of these events need to be associated with sorrow but should instead be sources of flourishing, which is perfectly possible, but it demands at the very least that one's genitals are intact. FGM is an age-old institution – a deeply problematic practice supported by enduring political structures blind to human female flourishing and its discontinuation is absolutely desirable.[21]

Through the lens of human flourishing it is remarkable that an unbearable practice like FGM can endure and continue to play a central role in many communities worldwide. It is illustrative not only of how important it is for each one of us to wonder about the structure of the society in which we live, but also how important it is that we take part in crafting our societies. Not all the rules and regulations, social mores or cultural practices that frame us are conducive to human flourishing. But all of them are there because human beings have put them there and continue to support them. Wonder is called for in terms of 'the political' because as much as we might acknowledge that we stand on the shoulders of giants, we should also acknowledge that in some aspects we might be standing on the shoulders of fools, and that is not a compliment nor in any way praiseworthy.

Wonder plays an important role in human flourishing because it takes wonder to discover how we might flourish as the kinds of creatures we are. This paper has pointed out three different lenses – 'individuality', 'relations' and 'the political' – through which important parts of flourishing becomes visible. To conclude, I would like to say that I honestly hope that I have been of inspiration, but should I have been merely a shadow that has offended, think of this and all is mended. The themes with which we have been engaged are delicate but of the utmost importance, because they concern the way we live our very lives, and you are invited to help sort things out.

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21 A world without FGM will even help men flourish to a larger extent. A father would never have to fear that his child would suffer needlessly at the hands of others within his own community. A husband would never have to fear the wedding night and the amount of pain and suffering he would bring to his wife. Finally, a husband would not have to fear the birth of his child as much because his wife's genitals would still be intact.

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3 Human Flourishing and Education

Joseph Moore

Introduction

Why should we educate people? And why does the answer matter? It matters because understanding *why* we should teach can shed light on *how* and *what* we should teach. Plato and Aristotle – both hugely concerned with the manner and content of education – assert as a general methodological principle that, if you want to know how something should be, or what a good version of that thing is, you should first ask what it is for. Applying this principle to the philosophy of education, if we want to know what a good educational system looks like, we should first ask what the purpose of education is (or purposes, if there are more than one). Once we know why we should educate people, then we'll be positioned to identify better or worse ways of educating by how well those educational systems fulfil their purpose.[1] In the same vein, the purpose of education can provide a criterion by which to determine something's importance to education – the importance of wonder, for example.

This paper first defends and explores one important reason why we should educate people, namely that education can enable people to flourish or live well. According to the account I defend, for someone to flourish is for them to successfully engage in activities which they subjectively value and which are objectively valuable (in the sense of being appropriate objects of subjective valuing). In addition to its many instrumental benefits, education can directly enable people to live well by exposing them to valuable activities, by creating opportunities to engage in and to come to value these activities, and by

1 This general teleological approach to education has been advocated by other contemporary philosophers of education, for instance White (2007) and Curren (2013).

providing the skills and information necessary to succeed in these activities. Next, I demonstrate how to move from the 'why?' of education to the 'how?' by arguing that, to fulfil the purpose of enabling flourishing, education should be quite general. That is, a good education will include instruction in a wide variety of activities: diverse academic subjects, but also artistic, athletic, technical and social ones. Finally, I suggest how to apply the same line of reasoning to the question of the role of wonder in education. If certain assumptions about wonder obtain, then we should also strive to educate in a way that instils wonder in students.

We should educate people to enable them to flourish

The first principle claim I wish to establish is that we should educate people in order to enable them to flourish. In other words, I claim that enabling flourishing is an important aim of education. I am not the first to make this claim.[2] But other authors in the philosophy of education who appeal to this aim tend to focus on how we should educate in light of this end – as I do in the second half of this paper. Arguments that flourishing is in fact an aim of education are often less explicit than they could be.[3] This is a gap which bears filling if we are to make the strongest case for educating for flourishing. I will therefore present an explicit argument for the claim that enabling flourishing is an important aim of education.

This claim admits of at least two readings, one stronger and one weaker. The stronger reading is that the only fundamental reason we should educate is that it contributes to human flourishing, i.e., that human flourishing is the sole ultimate aim or purpose of education. This claim is strong, but not implausible. It is entailed by the kind of eudaimonist normative ethical theory I defend in other work, according to which all actions, institutions and so on are ultimately ethically justified by their contribution to flourishing (Moore n.d.). If the sole ultimate aim of all our actions and institutions is human flourishing (for the purposes of ethical justification), then *a fortiori* flourishing is the sole ultimate aim of our educational actions and institutions. This is not to say that education cannot also serve other aims, such as the acquisition of knowledge (Robertson 2009), the cultivation of critical thinking or rational

2 See, for example, Marples (1999b), de Ruyter (2004; 2007; 2015), White (2007), Brighouse (2008) and Kristjánsson (2020).

3 Wolbert, de Ruyter, and Schinkel (2015) do offer, as their title puts it, "the first step in defending flourishing as an ideal aim of education", which consists of formal criteria for the concept of flourishing. These criteria are discussed below, in section 3.2.

autonomy (Scheffler 1973; Siegel 1988), or the cultivation of moral or civic virtue (Brighouse 2009).[4] But according to this strong, eudaimonist reading, any other aim of education must itself also serve the ultimate aim of flourishing (as, for example, rational and civic virtues plausibly do in many cases).

While I think the stronger reading is defensible and attractive, I will here defend a weaker and less controversial reading, namely that human flourishing is at least one important aim of education and that we should thus educate people, and educate them in such a way as to enable their flourishing, *all else equal*. This recommendation is defeasible. It leaves open whether there are other aims of education worth pursuing independently of their contribution to flourishing. If educating to enable flourishing conflicts with some other important aim of education, we may even have most reason not to educate in the way that best enables flourishing. But in the absence of such conflicts, we should educate in whatever practically feasible ways best enable flourishing. To put this defeasible claim another way, we have strong (but not necessarily decisive) reason[5] to educate and to do so in such a way as to enable flourishing.

The argument for this claim is simple. First, we have strong reason to enable people to flourish. Second, education can enable people to flourish. Therefore, we have strong reason to educate people and to educate them in such a way as to enable them to flourish. This is an instance of a general pattern of good practical reasoning: if you have reason to do *X*, and doing *Y* can be a way of doing *X*, then you have reason to do *Y* and to do *Y* in such a way as to do *X*. I assume that having strong reason to educate in such a way as to enable flourishing is sufficient for flourishing to count as an aim of education.

Definitions of terms

I will defend each of the two premises of this argument below, but first we should clarify some of the terms of the argument. First, what is education? It will certainly include formal, institutionalised schooling – primary, secondary and higher education. But it is not necessary to restrict 'education' to formal instruction. It can also include informal instruction by, e.g., parents, coaches, job supervisors, clergy, peers, etc. Nor need we restrict the content of education to traditional school subjects in the humanities, arts and sciences. It can also include socialisation and moral upbringing, religious instruction, tech-

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4 For further discussion of the idea of aims of education, and of particular potential aims, see Marples (1999a). Note that I am only concerned with the aims of education in a normative sense, not in a psychological or sociological sense of what an individual or collective is actually trying to achieve by educating. We can perhaps think of the normative aims of education as what our psychological/sociological aims should be.

5 Alternatively, "we have a *prima facie* obligation…"

nical and athletic training, and any other transmission of knowledge or skill. At least at the outset, we should be open to using 'education' in its broadest possible sense. As we fill in the details of how education enables flourishing, we will see just what kind of education is justified by this eudaimonistic aim. This will help us decide how to construe 'education'. But for now, let us adopt an unrestricted sense as a preliminary gloss.[6]

Second, who are the 'we' who should be doing the educating? All of us, collectively – that is, any collective body of people that constitutes a society, up to the limit case of a global society comprising all people. The claim being advanced is that the members of any society collectively have a strong reason to educate. This does not imply that any given individual has decisive reason to educate instead of doing other worthwhile things. The collective responsibility[7] to educate is best fulfilled by a division of labour. Thus, we have professional educators for academic subjects, as well as e.g., parents, clergy, coaches, piano teachers and yoga instructors to teach other things. But we also have many other productive members of society, from politicians to publishers to postal workers, who do little to no educating in their individual roles but who do, collectively, make education possible by contributing to the economy and government.

Who should receive this education and who should be enabled to flourish? I contend that we should enable all people to flourish, insofar as we can. Members of a given society have a collective responsibility to enable the flourishing of all the members of that society. If we are members of a global society of all people, then we have a collective responsibility to enable all people's flourishing. If, as I argue, education can enable people to flourish, then we have reason to educate anyone who can benefit from it. The young are the paradigmatic beneficiaries of education and we have special reason to make their education compulsory, though I contend that education should be available to all, regardless of age, to enable everyone's flourishing.

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6 As Schinkel (2017) notes, education need not even involve a distinct instructor and student. It may include learning for oneself and education by experience. My claim is that we should educate people to enable their flourishing, and that is consistent with the claim that individuals should educate themselves to enable their own flourishing. My focus is on the more general principle, but I am happy to grant the special case.

7 I speak colloquially in terms of a collective responsibility, though, strictly speaking, I do not insist that our strong reason to educate entails a moral, rational, or otherwise normative *requirement*. I claim only that we have strong reason to educate, which may be outweighed or cancelled by other considerations, and that we *should* educate, in the sense of an all-else-equal ethical recommendation, not that we *must* educate.

We have strong reason to enable people to flourish

Now that we have clarified some of the terms of the main argument, let us defend its premises. The first premise, that we have strong reason to enable people to flourish, is hopefully intuitive. In abstract terms, human flourishing is whatever makes a person's life well lived or a good life. And it seems important for people to live good lives. I certainly have strong reason to realise my own flourishing. To anyone but a staunch egoist, it will seem equally clear that we all have strong reason to help realise other people's flourishing when we can.

If this sounds less than convincing, it is because we are approaching the limits of argument. We are asking questions about our fundamental aims and values, not just in education but in life.[8] But we can perhaps further motivate the claim that human flourishing is an important good by making the concept more concrete. In what, then, does flourishing consist? Various answers have been put forward. It is standard to divide theories of well-being – a concept which includes that of flourishing – into two main categories (Parfit 1986, 492-502; Crisp 2001; de Ruyter 2015, 87-88). On the one hand are subjective theories, which take well-being to depend on people's attitudes or to consist ultimately in people's mental states, such as pleasure or desires. On the other are objective theories, which take well-being to be constituted by objective goods such as friendship, knowledge, virtue or achievement, independently of anyone's subjective attitude towards these things.[9]

Yet there is also growing interest in hybrid theories combining these two positions, both within and beyond the philosophy of education. The conceptions of flourishing put forward as the aim of education by White (2007), de Ruyter (2004; 2007; 2015) and Curren (2013) all combine subjective and objective components. They consist of having or doing good things while having fitting positive attitudes towards those things. Similar hybrid theories have been advocated outside the context of education as a conception of well-being (Raz 1986, 294-299; Darwall 2002) and as a conception of meaning in life (Wolf 2010). Following these authors, I will here defend a hybrid values theory as a conception of human flourishing (but not necessarily one of well-being, which

8 This natural limitation might be why other authors tend not to offer fully explicit arguments for the claim that flourishing is an aim (or the aim) of education. My position, however, is that the limit of argument lies at the level of the aim(s) of life, not of education. There is room for argument that flourishing is an aim of education partly in virtue of the fact that it is an aim of life, as I am arguing.

9 Excepting, of course, any attitudes which may (partially) constitute these objective goods, perhaps even including self-referential attitudes towards the goods – say, if valuing a friendship is partially constitutive of that friendship.

I consider a broader notion). On my conception, a human being flourishes by successfully engaging in activities which they subjectively value and which are objectively valuable (Moore n.d.). This is what I have in mind when I claim that education can and should enable human flourishing.[10] There is not space here to offer a full defence of this conception, but I will explain it and attempt to motivate it.

Necessary conditions of human flourishing

First, on my conception, flourishing consists in activity, not merely in having or being in certain states. As already mentioned, many theorists of well-being suppose that it benefits a person to experience pleasure, to have their desires satisfied, or to possess any of a number of objective goods like having knowledge. And any or all of these may be correct, as far as concerns what is good for or benefits a person in any way, no matter how slightly. But the concept of human flourishing, as I use it, is narrower than that of well-being. Human flourishing and its constituents are specifically what make a whole human life go well. A flourishing life is one that is meaningful, worth living and worth celebrating, rather than pointless, regrettable or tragic. And I take it that no amount of pleasure, desire satisfaction or knowledge is enough on its own to make a whole life go well, though it might make a person better off in a more modest way. At least one reason why is that these are states which, in principle, one could have or be in totally passively. Someone could give you pleasure or knowledge, or satisfy your desires, without you lifting a finger, by stimulating you (or your brain) in the right way, by presenting you with sufficient evidence for a claim, or by doing whatever it is you desire on your behalf. But a passive life full of other-produced pleasure, desire satisfaction or knowledge would not be a well-lived life. A flourishing life requires not simply having good things done for you but doing things for yourself – for example, satisfying your own desires, seeking and discovering knowledge, or pursuing something pleasant.

But not just any activity can constitute or contribute to flourishing. For example, intuitively, it would not contribute to a well-lived life to pursue sadistic pleasure or to satisfy sadistic desires by actively harming others. Neither would it constitute flourishing to pursue a mission of turning on as many televisions as possible. The activities which constitute flourishing need to be

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10 If another conception of flourishing were correct, it might still be true that education can and should enable flourishing (on that conception). Aristotle, for example, held that human flourishing consists in the exercise of human virtues like justice, courage, moderation, and wisdom. He also believed that acquiring such virtues requires proper education in addition to practice. As a result, a central purpose of education, according to Aristotle, is to cultivate virtues in students for the purpose of enabling their flourishing.

valuable in a way that immoral or pointless activities like these are not. I call this value, or valuableness, 'objective' to distinguish it from the subjective value which an individual might ascribe to an object or activity. It is possible for someone to subjectively value sadistic or pointless activities even though they are not objectively valuable.

There are many views on offer about what it is to be objectively valuable and the conditions which make something valuable, and here I wish to remain ecumenical. It should be relatively uncontroversial to say that something is valuable just in case it is an appropriate object of subjective valuing. For present purposes, I do not wish to commit to any view about which side of this biconditional has explanatory or definitional priority, or to any view about whether the objective value in question is natural or non-natural, mind-dependent or mind-independent, or agent-relative or agent-neutral. For all I'll say, there may be one and the same set of valuable activities for everyone, or different activities may be valuable for different people depending on their capabilities and attitudes. I also prescind from a particular theory of the conditions which make something objectively valuable, e.g., that it is pleasant or conducive to pleasure, or that it exercises distinctively human capacities. Instead I will rely on plausible paradigms of objectively valuable activities, such as engaging in loving relationships or cultural practices, pursuing stimulating or socially useful careers or hobbies, and generating intellectual, creative, skilful or athletic achievements. Any such activity can presumably contribute to a life's being well lived and flourishing.

Objectively valuable activities are still not sufficient for flourishing, however. Parenting is a paradigmatic valuable activity that can contribute to making a life go well. But the activity of parenting would not contribute to the flourishing of a woman who did not want to be a parent, who only had children as a result of social pressure and not for any authentic desire on her part. Cooking is another valuable activity, but the line cook in the chain restaurant who views it merely as a way to pay his bills is not made to flourish by cooking. For someone to flourish by engaging in a valuable activity, they must also subjectively value that activity.

Just as there are different philosophical theories of objective value, so with subjective valuing. Again, I wish to remain neutral. I think it safe to say that valuing something involves, at least, being positively emotionally and behaviourally disposed towards the thing. It seems also to involve endorsing or stably identifying with this positive attitude or disposition, which distinguishes valuing from merely liking or wanting (Raibley 2013). But whatever the best philosophical account of it is, the phenomenon of valuing, of loving or caring about something deeply, should be familiar enough. And flourishing

requires subjectively valuing and engaging in objectively valuable activities, i.e. activities that are the appropriate objects of subjective valuing.

At least one more condition is still necessary. A chef who loved cooking would not flourish by cooking if they happened to burn every dish they attempted to make or consistently prepared food that was just a little off. A teacher who valued teaching would not flourish by teaching if all of their students failed to meet the learning goals of the course. To flourish, one must have some measure of success in one's valued, valuable activities. This means that flourishing is never entirely up to us but depends on external circumstances outside our full control. For a parent to flourish through parenting, their children must survive and, ideally, thrive, which requires much that is out of the parent's hands. But what counts as success can vary widely depending on the activity and one's interests in it, and so we can have some control over our standards for success. One athlete may find success only in winning first place; another may find success merely in competing or in having fun.[11] Whatever the relevant standards of success are, or what determines them, one must *successfully* engage in valuable activities one values in order to flourish.

Thus, we have reached our conception of flourishing as successfully engaging in objectively valuable activities which the agent subjectively values. I take no issue with other, similar formulations, such as White's conception of flourishing as "success in worthwhile activities and relationships which [people] have freely engaged in and which they pursue wholeheartedly" (2007, 25) or Curren's as "admirable and satisfying activity" that is "successful in relevant respects" (2013, 239).

Formal criteria of flourishing

As a way of further supporting this conception, it is worth pausing to note how well it fits the formal criteria for a concept of human flourishing proposed by Wolbert, de Ruyter and Schinkel (2015). That is, it takes flourishing to consist in activities (or 'dynamic states', their criterion 2b) that are objectively valuable (or 'objectively good', their criterion 2c). Moreover, flourishing on this conception is about a whole life (2a) and is intrinsically worthwhile (criterion 1). The only criterion of theirs for which there is some question is their criterion 2, which states that flourishing is (or 'means') the actualisation of human potential. Insofar as criterion 2 is spelled out by sub-criteria 2a-c, my conception of flourishing would appear to satisfy criterion 2 by satisfying 2a-c.

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11 This is not to say that individuals can entirely determine their own standards of success. There may be limits set by social practices or expectations, or by the nature of the activity in question. For example, I cannot find success as an athlete by watching the Olympics on television.

Yet it is not clear whether my conception meets the letter or spirit of criterion 2 itself. This is due to an ambiguity in the way in which we might use the notion of human potential. In a capacious sense, any activity performed by a human being is necessarily the actualisation of human potential, for that human must have had the potential to perform the activity and, in performing it, this potential is actualised. Any conception that considered flourishing to consist in activity would trivially satisfy criterion 2 in this sense.

A more restrictive sense of human potential would be *distinctly* human potential. This is the sense that Aristotle has in mind when he writes that flourishing is the actualisation of the distinctively human capacities for theoretical and practical reasoning. My conception of flourishing may not meet criterion 2 on this construal of human potential, since it may not be true that all objectively valuable activities are distinctively human. Certainly, child-rearing and socialising with peers are valuable activities, if anything is, and yet they appear throughout the animal kingdom, though there are perhaps distinctively human forms. If formal criterion 2 of the concept of flourishing is intended in this restrictive sense and these activities are not included among the distinctively human ones, so much the worse for criterion 2. However, if we think that the actualisation of distinctively human potential is a good account of which activities are objectively valuable (for humans), including paradigmatic valuable activities like engaging in loving relationships, then my hybrid values conception of flourishing can satisfy criterion 2 in its entirety.

Unnecessary conditions?

I have argued that these four conditions – activity, objective value, subjective valuing and success – are all necessary for flourishing. Other theorists of flourishing may consider other candidate conditions conspicuously absent from this account. For example, *contra* Aristotle and modern Neo-Aristotelians (e.g., Annas 1993; 2011; Hursthouse 1999), I have said nothing about virtue, let alone specifically moral virtue. I have not claimed that flourishing requires an experience of satisfaction or contentment, or what Kristjánsson (2020) calls 'flow' (borrowing the concept from Csikszentmihalyi 1990). Neither do I claim that flourishing requires perfection, optimisation or any particular relation to an ideal (cf. de Ruyter 2007; 2012).

In other work I argue that my four necessary conditions are also jointly sufficient – that flourishing does not require these other conditions, though they may all be additional goods beyond flourishing. However, I need not prove or rely on the sufficiency claim here. It would not affect the present argument or the arguments to come if there were additional necessary conditions. This is because I only intend, first, to establish that flourishing is an important aim

of education and, second, to give two kinds of examples of how we should educate in light of this fact. I take it that, if flourishing does have additional necessary conditions, we will still have no less reason to realise the four necessary conditions for which I've argued. And these four conditions of flourishing by themselves will help us establish that education should be general and, pending certain hypotheses, wonder inducing. Thus, in what follows, I will assume that my four necessary conditions are also jointly sufficient, though this is strictly for convenience. There may be further interesting implications for education if there are indeed additional necessary conditions of flourishing, but I leave these for others to explore.

We said before that human flourishing, in the abstract, is an important good, something we have strong reason to realise, even if it is not the only such good. This is hopefully no less plausible for the specific conception of flourishing here advanced: we have strong reasons to contribute to people successfully engaging in valuable activities they value. The examples discussed to motivate the values conception of flourishing serve doubly to motivate the importance and goodness of flourishing on this conception.

Education can enable people to flourish

Let us suppose, then, that human flourishing is an important aim *simpliciter*. To establish that enabling flourishing is an important aim of education, the next step is to show that education can in fact enable flourishing. To do this, we should first examine how flourishing is enabled in general.

Enabling human flourishing

What is it to enable human flourishing? To enable something in general is to make it more likely or more possible.[12] The presence of oxygen is an enabling

12 On some theories of modality, it may not make sense to speak of making something more possible. Some might prefer to speak in terms of rendering possibilities more nearby or remote. I prefer to think in terms of making possibilities more accessible. The kind of accessibility I have in mind is the kind involved in distinguishing mere possibilities which will never be actual from those possibilities which can be actualised. For instance, it was possible, in some sense, for me to be six inches taller than I actually am, but that possibility will never be actualised – it is inaccessible to us in the actual world. Similarly it was possible, in some sense, for Napoleon to win the Battle of Waterloo, but that possibility too is no longer accessible to us in the actual world. I take it that actual events can render certain possibilities more or less accessible. For example, my informing you about the release of a new movie makes the possibility of seeing the movie more accessible to you – even if you were never actually going to watch that kind of movie anyway.

condition of fire, for example, since it makes combustion more possible than it otherwise would be, even though oxygen alone does not cause combustion. Not all enabling conditions are strictly necessary for the events they enable. Teachers who make the expectations for assignments clear and explicit thereby enable their students to do well on the assignments, even though it is possible for students to succeed on their own without clear and explicit direction. Expressly stated expectations simply make student success more likely or more possible.

There are a wide variety of conditions which enable people to flourish. I will draw attention to two main categories. First, flourishing requires resources, both those which are necessary simply to live and act at all, such as food and health, and those which are necessary for particular valuable activities, such as relevant information, skills and materials (e.g., flutes for flute playing, books for research, etc.). We need some such resources in order to flourish at all. But we are also better able to flourish when access to such resources is reliable across time and across possible changes in external circumstance and the wills of other agents. Our access to resources is more reliable when, for example, we have loved ones who will provide resources in adverse circumstances, when we have purchased insurance, or when the state guarantees the provision of those resources.

Call this reliable access to resources 'security'. With security, we can spend or risk our current time, energy and resources on valuable activities that we value, unconcerned that our resources will run out. Without security, we would instead be preoccupied with, e.g., avoiding risks to health and with simply securing resources like food and shelter in the near future through less valuable activities. So, while security may not be strictly necessary to flourish – it may be possible to flourish in adverse and insecure circumstances – security makes flourishing more likely or possible.

The second category of enabling conditions concerns our available options. In order to flourish, some valuable activities must be options for us in the sense that it is possible, i.e. within our power, to knowingly and deliberately engage in them. Our flourishing is better enabled when these options are also viable in the sense that nothing prohibitively bad will foreseeably happen as a result of choosing them – for example, when I will not be persecuted for my religious practices or fired for the results of my research. We are even more able and likely to flourish when we have a large number and variety of such viable options of valuable activities to pursue and ways in which to pursue them. When more valuable activities are viable options for us, we are more likely to find *some* valuable activity which we subjectively value and are able to successfully engage in. And, again, it further enables flourishing to have these many options reliably

across time and across possible changes in external circumstances and the wills of other agents.

Call a reliably wide range of viable options 'discretion'. With discretion, we can engage in some valuable activities now, unconcerned that these or any other particular valuable activities will cease to be viable options in the future. Even if some options become closed, plenty of others will still be available. Discretion is especially important given that our values, interests and abilities often change through time – an athlete's body ages and weakens, a researcher loses interest in the questions that once gripped her, etc. Without discretion, we will be lucky if, at any given time, we happen to have one or a few valuable activities which we value and can succeed in. While discretion, too, may not be strictly necessary to flourish – we could get lucky and happen to value the one valuable activity available to us – discretion makes flourishing more likely or possible.

How education can enable flourishing

How does education in particular enable flourishing? In the first place, education enables flourishing purely instrumentally. The knowledge and skills acquired through education are often useful for pursuing any end successfully. *A fortiori* these knowledge and skills are often useful for successfully engaging in valuable activities one values. Moreover, education is often instrumental to having discretion and security. In our society, education tends to increase one's opportunities for employment, which in turn tends to increase the reliability of one's access to resources, healthcare, etc. And wide-scale education has instrumental benefits for economic growth and stability, which in turn increases the reliability of many people's access to necessary resources. I pass over these instrumental benefits quickly because the personal and economic benefits of education are already well explored and plausibly contribute to any end of education, not uniquely the end of enabling human flourishing.

Education can also enable flourishing more directly (and more interestingly) by providing students with more viable options of valuable activities to pursue, thus increasing discretion. First, acquiring knowledge and skills through learning is a valuable activity in its own right. Students who value learning can therefore flourish simply by successfully engaging in the activity of learning. So providing education directly creates opportunities for students to flourish – at least those students who value education and learning.[13]

13 Note that the same can be said for teaching. Teaching is also a valuable activity and so those who value teaching can flourish by teaching.

But education also creates opportunities to engage in many other valuable activities beyond learning itself and so can enable flourishing even for those students who do not value learning as such. Education in academic subjects, for example, prepares students to engage in the valuable activities involved in research into and appreciation of language, history, chemistry, mathematics, biology, economics, philosophy, and so on. Technical education prepares students to pursue valuable careers as, e.g., chefs, mechanics, accountants, farmers, doctors, electricians, lawyers, engineers, therapists, accountants, architects and teachers. Artistic education prepares students to act, to dance, to create and appreciate music, photographs, clothing, paintings, movies, sculptures, poems and literature. Athletic training and education prepare students to compete in running, swimming, weightlifting, curling, basketball, football, hockey, etc. Other forms of education prepare students to engage in valuable religious or cultural practices, to raise children, to run households, and so on.

In short, we expose people via education to a wide variety of valuable activities, thus rendering these activities more viable as options.[14] Education typically proceeds by allowing students to practise these valuable activities in order to acquire the requisite knowledge and skills. Students who value these activities can therefore flourish while engaging in the activities as part of the educational process. This learning process, however, also equips students to succeed in these valuable activities at higher levels outside of the educational process. The student of carpentry, for example, learns the craft by practising the work of a carpenter and then can pursue carpentry as a career or hobby after completing their education. At each stage, while learning or after, the carpenter can flourish by engaging in carpentry, so long as they value it. Moreover, good education can spark student interest and make it more likely that students value the valuable activities they are learning to perform. In all these ways, educating students in valuable activities and practices can create more viable options for them, more ways for them to flourish. So education can directly enable people to flourish by increasing their discretion.

We have now defended both premises in our original argument. We have analysed human flourishing and seen that we have strong reason to enable it. We have also seen that (and how) education can enable flourishing. From these premises, we conclude that we also have strong reason to educate and to do so in such a way as to enable human flourishing. In other words, enabling flourishing is an important aim of education. This conclusion paves the way for

14 Compare Hirst's view of education as initiation "into those practices that can constitute a flourishing life" (1993, 197).

others. We concluded that we should educate in such a way as to enable flourishing. Presumably, this implies that we should, all else equal, educate in those ways that best (or at least sufficiently) enable flourishing. How, then, should we educate, in order to best enable flourishing? There may be many answers here, for education is a complex activity involving many factors which might affect flourishing. I will focus on two. I argue first that education should be general. Then I show how we might apply the flourishing-enabling aim of education to argue that wonder is important to education, conditional on certain assumptions about wonder.

Education should be general

We should educate people so as to enable them to flourish. Education enables people to flourish by exposing them to valuable activities, thus making it possible for them to value those activities, and by preparing them to engage in those activities. And people are better able to flourish as a result of having more viable options of valuable activities to pursue. So then, we have reason to provide people with a general education – that is, to instruct people in many different kinds of subjects and practices.[15] We should expose students to a wide variety of valuable activities, since each additional kind of valuable activity available to someone makes them more likely and able to flourish. So, all else equal, education should be as general as feasibly possible.

Just how general should education be? We can start with traditional academic subjects: history, mathematics, languages, physical and social sciences, and so on. The study and application of any of these subjects is valuable. But we should also teach much more: for example, the study, creation, performance and appreciation of art; the development and exercise of athletic and technical skills; cultural and religious beliefs and practices; and the creation and maintenance of valuable forms of association and social relationships. We have reason to teach any valuable activity that can be taught.

We should qualify this claim in a few ways. First, it relies on the assumption that having more options of valuable activities always better enables flourishing. And there is some empirical evidence which might suggest this is not the case. Some psychological studies suggest that having too many options in a choice situation – for example, when making a purchase – can decrease an

15 White also argues for general education for the sake of flourishing (2007) and meaning in life (2009).

agent's motivation to take any of the available options and can decrease the agent's satisfaction with whatever option they do choose (Iyengar and Lepper 2000). If having too many options of valuable activities similarly paralyses people and prevents them from pursuing any valuable activities, or if having too many options causes people to value their chosen activities less, then there will be a point at which providing more options ceases to enable flourishing but rather hinders it. If that is the case, then we will only have reason to teach additional valuable activities up to a point. That said, the available psychological evidence for choice overload is far from conclusive (Chernev, Böckenholt, and Goodman 2014). Moreover, it is not obvious that decreased motivation and satisfaction in the narrow kinds of choice situations studied by psychologists would necessarily translate into decreased motivation and subjective valuing in the choice of medium- to long-term valuable activities and life pursuits like careers. Nevertheless, we should keep the possibility of choice overload in mind as a potential limit to the claim that we have reason to teach any kind of valuable activity that can be taught.

A second limiting factor is feasibility. Educational resources are finite, and we cannot teach everything. So, we shall have to make decisions about which kinds of activities to teach. This does not contradict the claim that we have eudaimonistic reason to teach any valuable activity, but it means that this standing reason can, and at some point will, be outweighed by other considerations. It's not the case that we should, all things considered, teach every valuable activity, or even that we should attempt to do so.

Note, however, that neither of these two countervailing considerations count against a general education in diverse kinds of valuable activities. There may be contingent limits to the number of activities we should teach, but this would not imply that all of the activities we teach should be of a particular kind, e.g., traditional liberal arts subjects. It would still serve students' flourishing-enabling discretion to have diverse kinds of options, since people's interests and aptitudes are diverse. An academically inclined individual may equally well be able to flourish by studying either philosophy or physics, but another individual may not value either and would benefit more from religious or athletic instruction. To best enable people generally to flourish, in light of our diverse and often changing interests and aptitudes, it remains true that education should be general in the sense of including diverse kinds of valuable activities.

Particular individuals' interests and aptitudes may supply a third kind of countervailing consideration. While it might benefit many people to be exposed via education to a wide variety of valuable activities, there may be some people who decidedly know what they value and wish only to do that.

An individual may be completely devoted to studying mathematics and may therefore benefit far less from also studying literature and music. Learning about these other subjects may give this individual more viable options of valuable activities, but it also takes time away from their pursuit of the valuable activity they actually value – not clearly a beneficial trade-off. So, while general education in many kinds of valuable activities may be a good general policy, this does not entail that all individuals must receive a general education or that any particular individual should be forced to try different kinds of valuable activities. Whether we should require anyone to learn diverse kinds of activities will depend on other considerations. For example, we may have good reason to require young children to learn diverse kinds of valuable activities given that their interests, aptitude, and values are less fully formed and more plastic than many adults'. But such considerations may not apply in general. What is clear as a matter of general policy is that we should make instruction in a wide variety of valuable activities at least *available* to people.

Even in this qualified, defeasible form, the fact that we have standing reason to make available education in as many kinds of valuable activities as we can has a number of interesting implications. The first implication is that it vindicates the broad and inclusive construal of 'education' which we introduced as a preliminary gloss of the term. We have the same kind of eudaimonistic reason to teach people how to square dance as we have to teach them how to calculate the area under a curve. Having either of these skills makes it possible to engage in some valuable activity. So, at least with respect to the educational aim of flourishing, there is no normative difference to make it fitting to call one kind of instruction 'education' and not the other.[16]

A second interesting implication is that, since education should be very general, the various valuable kinds of social, cultural, artistic, athletic, technical, etc. activities can be justified in formal schools as part of the schools' educational purpose. School sports teams, glee clubs, theatre troupes, auto shops and the like need not be considered merely extracurricular pastimes but educational opportunities in their own rights. As a result, funding and support

16 Note that this does not mean that all forms of teaching or instruction count as education. If we do wish to reserve 'education' as an honorific and distinguish it from other, less desirable forms of instruction, the eudaimonistic aim of education may help us draw the line. As a first pass, we can call 'education' the transmission of skills and beliefs which contribute to the pursuit of valuable activities. Inferior forms of instruction will then include the transmission of skills and beliefs which either do not contribute to or positively hinder the pursuit of valuable activities, as well as the transmission of skills and beliefs which contribute to activities which are either not valuable or positively disvaluable. But this is a first pass definition only: there may be other necessary conditions for education, e.g., ones concerning the process of instruction as well as its content (Peters 1966).

for such programmes require no more special justification than the support of formal classes.

On the other hand, it is not necessary to consider education limited to formal, institutionalised schools. Correlatively, it is not necessary for any particular subject or activity to be taught in a school rather than in some other, informal way. If there are good community sports clubs outside of schools, for example, there may be no strong reason for schools in particular to host sports teams. There may also be good reasons in a pluralistic society not to teach any particular religious customs or beliefs in schools, at least if they cannot teach others equally well. Determining which kinds of activities a given formal school should offer is likely to be a highly contingent matter, depending on considerations of efficiency, availability of informal alternatives, and other institutional and social goals.

Third, much non-school training and teaching should be recognised as an important part of a society's educational system, from moral education at home and in religious institutions to on-the-job training. Many people besides professional teachers of the academy can contribute to fulfilling our collective responsibility to educate others in order to enable their flourishing. This generates a society-wide interest in the manner and content of informal education in non-school settings: we collectively have some stake in what and how parents, priests, supervisors, etc. are teaching. This does not immediately entail a right of individuals or political agents to regulate or otherwise intervene in others' informal education in the way that formal education is publicly regulated. But some such intervention at least *could* be legitimate, depending on the strength of other normative considerations. By the same token, there might also be legitimate grounds for public support or subsidies of informal education just as formal education is publicly funded.

Should education promote wonder?

The flourishing-enabling purpose of education can help to answer the question of whether education or educators should strive to instil wonder in students. Whereas I argued for the conclusion that education should be general, here I put forward only hypotheses, conditional proposals of how to vindicate the importance of wonder for education if certain assumptions hold. For the purposes of these proposals, I wish to leave 'wonder' undefined and ambiguous between its various possible senses. There well may be important differences between wonder and mere curiosity, between wondering how and wondering at, between active and passive or deep won-

der (Schinkel 2017). Any given assumption I discuss may obtain for, and thus help to vindicate the importance of, one form of wonder but not another. Those interested in a particular form of wonder may simply supply that sense of the term to what follows.

First, it seems plausible that wonder might motivate students and thus lead to better learning outcomes. In that case, we should try to instil wonder in students in order to educate effectively whatever our aims in educating are, including enabling flourishing. In particular, increased motivation may lead more students to engage in the valuable activities which are being taught, and better learning outcomes make students more likely to succeed in those valuable activities. So, wonder in education may better enable students to meet the activity and success conditions of flourishing. The motivational impact of wonder is an empirical hypothesis which awaits scientific confirmation.[17] But, if it does increase motivation in education, wonder will serve the flourishing-enabling purpose of education.

A second, plausible empirical hypothesis is that experiencing wonder from an activity might make participants more likely to value that activity or make them value the activity more. Certain valuable activities certainly are wondrous and instil wonder in participants: an astronomer marvels at how we are all made of star stuff, parents wonder at their child's development. This sense of wonder plausibly draws participants towards such activities as astronomy and parenting, and leads participants to care more about them. In that case, educators should instil wonder in students to make them more likely to value the valuable activities being taught. If wonder positively impacts subjective valuing, then for this reason also wonder in education will serve to enable flourishing. This empirical hypothesis as well awaits scientific confirmation.

A third hypothesis is not empirical, but normative. It is plausible that some activities may be valuable, or more valuable than they would otherwise be, in virtue of being wondrous. The wonder instilled by astronomy, parenting, etc. might be part of what makes those activities worth valuing and doing. If wondrousness is a contributor to the objective value of activities, then wonder will be a criterion relevant to the selection of activities to include in education. We want to teach students knowledge and skills which will help them engage in valuable activities, and so, if wonder makes some or many activities valuable, then we have reason to teach wonder-full curricula. And in that case, it makes sense for educators to strive to instil wonder in students in order to do justice to their wondrous subject matter, to help students appreciate the value of what

17 Hadzigeorgiou (2011) provides one example of a limited study into this hypothesis.

they are learning and doing. If wonder is a contributor to the objective value of activities, then, again, wonder in education will be crucial to its flourishing-enabling purpose. As a normative hypothesis, this possibility awaits further philosophical inquiry into the nature of objective value.

It seems, then, that we have provisional grounds for asserting that wonder is indeed important to education in light of the fact that we should educate to enable flourishing.[18] The present conception of human flourishing involves four necessary conditions – activity, success, objective value and subjective valuing – all of which may be enabled or enhanced by the presence of wonder. Though our three hypotheses above bear further investigation, they are not implausible, and any one of them on its own would support the importance of wonder to education.

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18 Yannis Hadzigeorgiou has suggested to me another possible way of vindicating the importance of wonder specifically for the education of children. He proposed that flourishing in childhood might have necessary conditions distinct from, or in addition to, those for (adult) human flourishing in general. The experience of wonder may be one such condition of child-specific flourishing, in which case childhood education ought to be wonder-full in order to enable students' flourishing.

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2

CONCEPTUAL EXPLORATIONS AND THEORETICAL PERSPECTIVES

4 Wonder and Education: Some Lessons from Spinoza

Genevieve Lloyd

Introduction: wonder and education

The idea that wonder has a special connection with education is an old one. It goes back at least to the model of education which Plato had Socrates enact with the boy Theaetetus in the dialogue which bears that name. Plato's dialogue is not just about educational method. It is also an inquiry into the nature of knowledge itself. More specifically, it is a dramatisation of the nature of *philosophical* thinking, which begins in wonder. "This is where philosophy begins and nowhere else", Plato has Socrates say (*Theaetetus* 155d; Plato 1990, 277).

Theaetetus is being initiated into a kind of thinking which is relentlessly rigorous and adversarial in its persistent mode of questioning. Every attempt the boy makes to define knowledge is demolished by Socrates. As an approach to education – even to education in philosophy – the Socratic method of response and riposte has its limitations. Adversarial intellectual combat is not always fruitful inquiry – least of all in contexts of power imbalance between student and teacher. But there is something deeper going on here than a relentless challenging of definitions. Plato presents the boy's proneness to wonder as making him an ideal candidate for Socrates' approach to education. However, his dramatisation of their interaction marks also an early stage in a long history of philosophers' attempts to articulate the nature and significance of wonder.

Those passages in the *Theaetetus* raise issues which remain important for understanding the role of wonder in education in present times. I want to focus, especially, on a particular moment in the philosophical history of wonder, which emerged in 17th-century Amsterdam or, at any rate – due to Spinoza's forced exile from Amsterdam – in areas close by. My topic is what might now

be learned from Spinoza about the place of wonder in education. But first let's stay just a little longer with Socrates and Theaetetus.

As is often the case in intellectual history, the trajectory of the philosophical history of wonder can be captured in recurring metaphors. The most basic ones are already there in Plato's dialogue. That is no surprise. For, despite his notorious distrust of the poets, Plato was a master of language which engages imagination and emotion – as metaphors do.

Wonder itself – as Plato presents it in the *Theaetetus* – is an intense emotional experience. The metaphors through which its nature is described are drawn from motion and stillness. Those metaphors can seem to be in tension with one another. On the one hand, the boy's puzzlement brings his thinking activity to a standstill. He stops, not knowing how to proceed. Yet that condition of apparent intellectual immobility is also a state of emotional turmoil – of an agitated restlessness. Asked to reflect on the nature of knowledge, Theaetetus reports: "I often wonder like mad what these things can mean; sometimes when I'm looking at them, I begin to feel quite giddy." (*Theaetetus* 155c; Plato 1990, 277).

In the early stages of the dialogue, Plato offers a luminous metaphor which points to a possible resolution of that tension in wonder between motion and stillness. He has Theodorus, the boy's tutor in mathematics, praise his intellectual potential by saying that Theaetetus approaches his studies in a way reminiscent of "the quiet flow of a stream of oil" (*Theaetetus* 144b; Plato 1990, 262). It is an evocative metaphor for an ideal of intellectual style and character – dynamic, but steady and smooth; controlled, yet intense. The ideal is elusive – difficult to articulate clearly without the metaphor, no less than it is to realise in practice.

That tension between stillness and motion haunts the subsequent philosophical history of wonder. It lingers in conflicted metaphors – of stunned immobility and of turbulent, agitated movement. Wonder has been associated with surprise and amazement – and hence sometimes with intellectual stupor. By extension, it can be related to passivity – to the mental torpor of stupidity. Yet it has also been related to intense intellectual activity – to smooth flowing mental agility.

On the one hand there is the recurring image of a mind transfixed – 'wonderstruck' as the English language has it. That model is explicit in Descartes's *Passions of the Soul,* where he warns that excessive indulgence in wonder can reduce would-be knowers to a state akin to gaping like immobilised statues – stopped in their tracks, not knowing which way to move. There, wonder is construed as a freezing or paralysis of the activity of thinking. Descartes thought that, although wonder is useful in prompting the beginning of

inquiry, it can also be dangerous. He argued that wonder – like other emotions – should be reined in by the exercise of a virtuous will.

In contrast to that imagery of a paralysis, endangering the mind's activity of the mind, wonder has also been described through what seem equally appropriate images of a kind of mental restlessness – of helpless disorientation, wandering in uncertainty – not a smooth flow, but an agitated fluctuation. The clash of metaphors reflects an old and ongoing ambivalence in philosophers' attitudes towards wonder.

Aristotle, like Plato before him, saw wonder as the beginnings of inquiry. In the *Metaphysics*, at A.2982b, he says that wonder inspires the desire to know – to better understand what he calls 'the greater matters', concerning phenomena of the moon, sun and stars, and the genesis of the universe (Aristotle 1941, 692). However, Aristotle also insisted that what really matters is not the beginnings of *inquiry*, but what he called the 'nobler' end state of *knowledge*. For him, wonder belonged to the early, uncertain stage of the process of coming to know. He saw it as a kind of vacillation – a hovering between not knowing and knowing. Ideally, then, wonder is left behind by the greater 'nobility' of actual knowing.

Something of that old narrative of a condition best left behind has persisted – not only into modern philosophy, but also more generally into contemporary attitudes towards wonder. Wonder may be regarded as charming in the very young. Yet – as in the old philosophical narratives – adult, mature knowers are expected or presumed to leave it behind. Adult indulgence in wonder seems now to be more often associated with recreational retreat into fantasy than it is with serious intellectual engagement with reality.

There is nothing wrong with recreational fantasy. Nor would I want to suggest that there is any really sharp line between fantasy and serious engagement with reality. After all, the literary genre of science fiction is a major source of reflection on some of the most pressing issues of our time – issues about climate change, about social responsibility in relation to technological advance. Yet the common linkage of wonder with fantasy can be an obstacle to thinking through clearly just what role wonder should have in educational theory and practice.

The connections that were obvious in ancient philosophy between wonder and knowledge – and hence between wonder and education – seem to have largely gone missing. That is what I want to address. How has it happened? And what might be done about it? Nietzsche says, in *Beyond Good and Evil,* that maturity involves acquiring again the seriousness of a child at play. I think something similar can be said for wonder. Indeed it may come to one and the same thing. Playfulness and wonder alike – and together – are too important to

be treated as something to be left behind in mature adult life. If that is so, they should both have their place in the serious business of education.

My general question, then, is: how to make sense of, and respond to, modern loss of old connections between wonder and education? But why look to Spinoza in framing an approach to that issue? Apart from the fortuitous appropriateness of talking about Spinoza in Amsterdam, why focus on that particular 17th-century example in the long philosophical history of wonder? My answer is that Spinoza confronts us with a pivotal moment in that history — a crucial turning point in how wonder has been construed. For his treatment of wonder is a watershed between its old connections with knowledge and the development of 18th-century notions of *the Sublime,* which were taken up in Romanticism and have suffused contemporary attitudes to wonder.

The transformation of wonder into *the Sublime* happened partly through the reception of Spinoza's philosophy, though I think that was a development which he would not himself have welcomed. He offered a way of thinking of wonder which preceded – and was in some ways antithetical to – the Romantic Sublime. He stressed the old connections between wonder and knowledge. Yet his version of wonder was distinctive – in ways which helped make possible subsequent developments in Romanticism.

I want to argue that to engage now with Spinoza's treatment of wonder is not to seek a nostalgic return to a largely lost past. It is, rather, to better understand what happened when the Romantic Sublime came to dominate the modern understanding of wonder; and to see what has been unfortunate – as well as what remains good – about that shift. So, let us now have a brief look at this notion of the Sublime. I will then try, against that background, to sum up the contemporary significance of Spinoza for the place of wonder in education.[1]

The Sublime

The concept had many sources in ancient thought. But the version of it which became relevant for Romanticism came largely through 18th-century revival of a fragment attributed to Longinus. Edmund Burke, and subsequently Immanuel Kant, articulated this revived notion of the 'sublime' as a contrast term to the 'beautiful'. Burke's *Philosophical Enquiry into the Origin of Our Ideas of the Sublime and the Beautiful* was published in 1757; Kant's

1 I discuss the significance of Spinoza in understanding the concept of the Sublime – and more generally in the philosophical history of wonder – in Lloyd (2018).

early essay "Observations on the Feeling of the Beautiful and Sublime" came in 1764. Kant later developed his version of the sublime much more fully as a core theme in his *Critique of Judgement,* published in 1790. The notion of the sublime has a lot in common with earlier versions of wonder. Yet it also involves a significant departure from them: it has a more complex relation both with Reason and with Nature. For later Romantic thought, one of the most important insights from Burke's *Enquiry* was that reason is largely *bypassed* by the feeling of the sublime.

For Plato and Aristotle, wonder involved emotional excitement or agitation; but it was not disconnected from intellect or reason. It belonged with rational inquiry into the natures of things. According to Burke, in contrast, the Sublime 'takes precedence' over our efforts to think. This 'feeling' is a mixture of pain and pleasure, associated with power and with fear. He describes it as hurrying thought on by an irresistible force, which puts it at odds with reason. Whereas reason has connotations of clear and precise thinking, this feeling of the sublime abhors clarity. It thrives on vagueness and confusion. Yet Burke presents it as a positive experience, producing a sort of 'swelling and triumph' within the mind (Burke [1757] 2015, 43). Although it is associated with horror, human minds experiencing this feeling are supposed to find themselves, not abject, but exultant. Despite its dissociation from reason, it is supposed to bring a sense of self-worth.

Although Burke's Sublime is an experience of turbulent astonishment – suppressing rational thought – it retains an element of reverential awe in the presence of Nature. Clearly, it has some continuities with earlier versions of wonder, associated with awe at what Aristotle called 'the greater matters'. But, being 'shadowed with horror', the Sublime is no longer a state of calm, reflective intellectual contemplation. It is elicited especially by scenes of Nature at its most terrifying – with a sense of human vulnerability in the face of that might and power.

Kant, in his early *Observations on the Feeling of the Beautiful and Sublime*, echoes Burke's emphasis on the intensity of the feeling of the Sublime; but already there are some important differences. His treatment of the relations between the Sublime and Reason are more nuanced. Though it remains a 'feeling', Kant's Sublime is no longer polarised from rational thought. That shift is more fully developed in his later *Critique of Judgement.* There, the swelling sense of self-worth, of which Burke had talked, becomes explicitly associated with self-satisfaction in the power of Reason, which marks human beings off from the rest of Nature. In Kant's treatment, intellect and the feeling of the Sublime come closer together – though in a very different way from the connections wonder had with knowledge in ancient philosophy.

The Sublime remains for Kant a *feeling* of great intensity and power. However, in contrast with Burke's Sublime, it is now a feeling that belongs with intellect, rather than being at odds with it. For Kant, the Sublime brings awareness of the supremacy of Reason over mere 'sensibility'. The crucial shift that he introduces is that the Sublime is now located – not in objects of thought – but in thought itself. This Sublime is explicitly a cast of mind. It must, in every case, have reference to our way of thinking. True sublimity, Kant insists, must be sought only 'in the mind of the judging subject', and not in the 'object of Nature' that occasions it (Kant [1790] 1952, 104).

This shift brings a dramatic change in how the human mind's relations with Nature are construed. As Kant sums it up, the Sublime does not reside only in Reason's power over 'Nature within' – over the lesser, non-rational aspects of human nature. It involves also a sense of superiority over what he calls 'Nature without' – the realm of material things. It arises, he says, in our recognition of Reason's power to reach beyond the seeming omnipotence of Nature. The might and power of Nature can of course physically destroy a human being. Yet that sense of the power of Nature is for Kant offset by the mind's realisation of "the appropriate sublimity of the sphere of its own being, even above nature" (Kant [1790] 1952, 111-2).

Kant treats Reason as the highest faculty of the mind; and the sublimity of Reason gives human minds a status higher than that of mere Nature. However, its relation with the lesser aspects of mental life – especially Imagination – is for him not a static relation of superiority. The dominance of Reason must be *established* in a struggle. The dramatic story of that contest of human faculties unfolds in Kant's *Critique of Judgement*. The power of Reason is elicited in the struggle of the Imagination to apprehend something ever beyond the limits of its capacity – a struggle in which Imagination must inevitably give way to Reason.

Burke had related the feeling of the Sublime to the mind's realisation of its own powers. In Kant's mature version of that feeling, the power of Reason is now explicitly celebrated as Reason's triumph in a contest between different faculties of the human mind. However, as the story goes, the turbulence of the struggle is not left behind in the triumph of Reason. It persists in what Kant describes as an ongoing 'discordant accord'. A fragile balance is attained between rival forces. Imagination is not suppressed once and for all. It remains a power in its own right – a force with which Reason must contend. That struggle involves intense emotion.

Talk of ongoing struggle – the 'contest of the faculties', as Kant describes it – seems to suggest a dynamic, energised form of Reason. That was indeed how Kant saw it. But it was not the way of thinking of Reason that prevailed

in Romanticism. Somehow, the complex Kantian model of the supremacy of Reason within an ongoing 'discordant accord' got lost along the way. The Sublime, rather than belonging – as Kant had claimed – to a transformed Reason, became associated with intense, emotionally charged Imagination. It is as if Imagination, imbued with emotional intensity, went off on a frolic of its own. Reason came in contrast to be construed as an abstract, arid, pedantic 'objectivity' – devoid of either the colour of imagination or the intensity of emotion.

Spinoza and the Sublime

That is my story of the Romantic Sublime. Like any story in the history of philosophy, it is open to contestation. But I think it does make sense of what happened when the feeling of the sublime came to replace older ways of thinking of wonder, which had seen it as closely connected with rational, methodical inquiry. Something of the Sublime, thus understood – with its connotations of emotionally charged imagination, at odds with rational thinking – persists into the present in a common understanding of the condition of wonder.

How does Spinoza fit into this story? The Romantics understood him – and in some ways distorted his thought – through their own preoccupations, including the allure of the Sublime. They had an ambivalent and vexed relation with Spinoza's philosophy. There were arguments about whether and how particular thinkers were influenced by – or perhaps tainted by association with – his alleged pantheism: the treatment of God as one with Nature. There were disputes also about whether the pantheism the Romantics saw in Spinoza sprang from atheism or rather from his philosophy having altogether too much God. (Does God here disappear into Nature or Nature into God?)

There was a Romantic reconstruction of Spinoza – not all of which was consistent with what he actually said. Yet it is also true that there was much in his philosophy that did suggest intimations of the transformation of ancient wonder into the modern Sublime. Spinoza stressed the close connections between reason, imagination and emotion; and he had a dynamic view both of the whole of Nature and of the human mind's place within that totality. However, the most striking affinity between Spinoza's philosophy and the Romantic Sublime emerges in the central concept he calls *conatus*, commonly translated as 'striving'.

Spinoza claims that the essences of individual finite things reside in their striving to persist in existence – a prolonged effort, which can be helped or hindered by the influence of other such 'strivings'. For him that centrality of

conatus applies to individual human minds as well as to bodies. For, in this system, the mind is the awareness – as he puts it, the 'idea' – of the body. Human minds and bodies are corresponding *modes* of God-or-Substance, under different *attributes*: 'thought' and 'extension' – 'mind' and 'matter'.

There is no need here to go into the details of the underlying metaphysics. What matters is that for Spinoza the essence of a human mind – what it is to *be* a human mind – resides in an ongoing struggle for better understanding of the body, of which it is the idea. A mind, of its nature, struggles to persist as ever more adequate understanding of its own body in relation to other things – all striving for continued existence within the whole of Nature.

Clearly, in that talk of *striving for understanding,* there are resonances of older versions of the stirrings of wonder. There are resonances, in turn, of Spinoza's version of 'striving' in the Romantic Sublime. Hence my talk of Spinoza as a watershed between the old and the new in the philosophical history of wonder.

Spinoza's account of wonder resonates with how it was understood prior to the allure of the Sublime – as a mind's thoughtful, inquiring response to the actual world. Yet it does that in a way which also points forward to the celebration of imagination and emotion as crucial to the life of the mind – rather than treating them as processes to be ultimately set aside, or suppressed, by the higher exercise of intellect or reason. Those threads come together in Spinoza's distinctive treatment of wonder, where it becomes clearer what he might have to offer contemporary understanding of its role in education.

Spinoza's version of wonder and education[2]

Spinoza – it must be acknowledged – does not offer an explicit theory of education. What is more, when we look at his best-known work, the *Ethics,* it does not leap off the page as an exercise in the cultivation of wonder. It is set out in a daunting geometrical structure, which fits the common impression of Spinoza as an austere 'rationalist'. The format does not suggest any encouragement to modern aspirations towards 'holistic' education. It may seem to promote the privileging of reason over imagination or emotion. Its chilling array of postulates, axioms, definitions, proofs, corollaries does not offer a promising model for contemporary educators, reflecting on how best to draw out the potential of young minds. Yet what emerges in the

2 I discuss Spinoza in relation to education more fully in Lloyd (1998).

content of the *Ethics* points in a different direction from that initial appearance of arid, abstract 'rationalism'.

Spinoza does affirm the importance of the cultivation of reason in a well-lived life. However, what that amounts to for him is something quite different from claiming the supremacy of reason over other aspects of the life of the mind. Here, reason is not the master of imagination or emotion; it is their companion and ally. The *content* of the array of definitions and deductions in the *Ethics* is devoted to establishing, among other things, the inseparability of reason from imagination and emotion. Underlying that inseparability is Spinoza's affirmation of the union of mind and body. A human mind's embodiment is for him a conceptual necessity. A human mind cannot exist without body; for it just *is* the awareness – the *idea* – of body. That claim is reflected in what he has to say about the process of *becoming* a flourishing human being; and this is where we get to a Spinozist approach to education.

We get, for example, this — from the Scholium to Proposition 39 of Part V.

> We must note here that we live in continuous change, and that as we change for the better or worse, we are called happy or unhappy. For he who has passed from being an infant or child to being a corpse is called unhappy. On the other hand, if we pass the whole length of our life with a sound Mind in a sound Body, that is considered happiness. And really, he who, like an infant or child, has a Body capable of very few things, and very heavily dependent on external causes, has a Mind which considered solely in itself is conscious of almost nothing of itself, or of God, or of things. On the other hand, he who has a Body capable of a great many things, has a Mind which considered only in itself is very much conscious of itself, and of God, and of things.
>
> In this life, then, we strive especially that the infant's Body may change (as much as its nature allows and assists) into another, capable of a great many things and related to a Mind very much conscious of itself, of God, and of things. (Spinoza [1677] 1985, 614)

We have there a statement of what is for Spinoza the goal of education. It is, as he puts it, the transformation of the infant body into 'a body capable of a great many things'. For him, the mark of success in this project is the pleasure that the flourishing human being finds in living.

There is a complementary passage, at the Scholium to Proposition 45 of Part IV, which highlights that connection with pleasure:

> It is the part of a wise man, I say, to refresh and restore himself in moderation with pleasant food and drink, with scents, with the beauty of green plants, with decoration, music, sports, the theatre, and other things of this kind, which anyone can use without injury to another. For the human Body is composed of a great many parts of different natures, which constantly require new and varied nourishment, so that the whole Body may be equally capable of all the things which can follow from its nature, and hence, so that the Mind also may be equally capable of undertaking many things. (Spinoza [1677] 1985, 572)

That may all sound to contemporary educators like a trite affirmation of the mantra of a 'healthy mind in a healthy body'. It may summon up familiar talk of the desirability of 'educating the whole child', which has become a commonplace. And to a contemporary ear, talk of becoming capable of undertaking ever more things may sound like a nod in the direction of what is now celebrated as 'multitasking'. However, there is a deeper thought here. For Spinoza, the maintenance or restoration of bodily well-being is not just a precondition for a well-functioning mind. He is not talking of attending to bodies *as well as* minds. For him, it all comes to the same thing; and that is the basis for seeing intellect, imagination and emotion as inseparable.

On Spinoza's account reasoning, as a thought process – even at its most abstract – is bound up with the awareness of bodily modifications. Rational thinking reflects the ways in which bodies constantly affect and modify one another. A mind is aware of its own body – the body of which it is the idea – only together with other bodies; and it is aware of other bodies only together with its own. That confused confluence is what Spinoza calls *imagination*. It is made possible by the structure of the human body – by its capacity to retain traces of the ways in which it is affected by other bodies. Without that bodily retentive capacity, there would be no possibility of comparing one state of awareness with others. Hence the formation of what Spinoza calls the 'common notions' of reason depends on the mind's confused awareness of other bodies together with its own. Reason and imagination are thus intertwined. At the Corollary to Proposition 17, in Part II, he emphasises this way of thinking of imagination: "The affections of the human Body whose ideas present external things as present to us, we shall call images of things... And when the Mind regards bodies in this way, we shall say that it imagines." (Spinoza [1677] 1985, 465).

For Spinoza, then, reason is interconnected with imagination; and it is also interconnected with affectivity – with emotion. He stresses that a human body undergoes constant change as it is impinged on by other bodies; and so too the human mind undergoes transitions in greater or less understanding of those

bodily changes. He identifies those transitions in mental activity and passivity as the 'affects'. Parts III and IV of the *Ethics* elaborate the rich and complex interactions of reason, imagination and emotion, which yield a multiplicity of specific 'affects' – all derived from three basic ones: joy, sadness and desire.

What is important in all this for education is that, according to Spinoza, human minds cultivate the power of reason by exploiting its interconnections with imagination and emotion, rather than by transcending or suppressing them. Hence, he says at Proposition 12 of Part III: "The Mind, as far as it can, strives to imagine those things that increase or aid the Body's power of acting." (Spinoza [1677] 1985, 502). Putting all that together, what emerges is that a human mind is to be seen as an agitated confluence of processes, among which it strives – through reason – for a deeper understanding of its own presence in the world. Reason, imagination and emotion are all involved – and intertwined – in that ongoing struggle. Another important thing to notice here is that this means that human minds come to *know* only from *within* the totality of Nature, in which bodies affect one another and retain traces of those interactions. They do not stand apart from the rest of the world, somehow singled out by their capacity for reason, and coming to knowledge as if from a position outside it all. Human minds know only as embodied beings, immersed in – and affected by – the whole of Nature.

What then, for Spinoza, is the nature of wonder? What does it contribute to the well- lived life? What part does it play in the process of a mind's becoming capable of being, as he puts it, "very much conscious of itself, of God, and of things", and hence able to take pleasure in the richness of what a human life can offer "without harm to others"?

Like many philosophers before him, Spinoza centres his account of wonder on the notion of a pause – an intermission in mental activity. In wonder, the mind comes to a halt in the face of something unfamiliar. But, from that familiar motif, Spinoza comes to his own distinctive conclusions. In particular, wonder takes on a special status in relation to emotion. I mentioned earlier his treatment of affect – emotion – as the mind's awareness of transition to greater or less activity. If that kind of transition is indeed the nature of emotion, it follows that wonder is not itself one kind of emotion among others. Spinoza argues that, if wonder involves a cessation of activity, it cannot then itself be considered as one among other emotions. The presence of wonder nonetheless haunts his treatment of all the emotions, playing a central role in their formation and in their transformation. Despite not being itself an emotion, wonder is for Spinoza crucial to the emotional aspects of the life of the mind – both individually and collectively.

If wonder is not an emotion, what then is it? Where is it to be located in the cartography of mental states? Spinoza's account of the nature of wonder reworks the old theme of surprise at something unfamiliar. He explains that element of surprise in terms of a temporary thwarting of the activity of imagining. Summing up his account, in a section on "Definitions of the Affects" in Part III of the *Ethics,* he says: "Wonder is an imagination of a thing in which the Mind remains fixed because this singular imagination has no connection with the others." (Spinoza [1677] 1985, 532). In wonder the mind is brought to a standstill by the *singularity* of an object of attention.

On Spinoza's account, imagination brings things together for comparison, thus making it possible for reason to grasp what they have in common. It is through imagination that the mind is able to retain traces of bodily modification, and hence to compare what is present before it with things no longer present. So, if the exercise of imagination is brought to a halt, the search for commonalities – the cultivation of reason – is also temporarily blocked. Where there is no apparent basis for comparison, the mind is forced to pause. It remains stuck in the contemplation of *singularity,* finding no easy transition to other things. This focus on singularity is for Spinoza the key to understanding wonder. At the Scholium to Proposition 52 of Part III, he says: "This Affection of the Mind, or this imagination of a singular thing, insofar as it is alone in the Mind, is called Wonder."

By stressing those connections with imagination, Spinoza is able to give fresh content to the old idea of wonder as a pause in thought. On his account, wonder is a fixation *of the imagination*. In explaining the exclusion of wonder from his listing of specific affects or emotions, he says that, rather than being – as emotions are – a transition to greater or lesser activity, it is a "distraction of the Mind". It arises not from any positive cause, but only "from the fact that there is nothing determining the Mind to pass from regarding one thing to thinking of others" (Spinoza [1677] 1985, 532).

Spinoza's description of wonder as a 'distraction' might sound like a trivialisation of it. But Spinoza is in fact locating wonder in the depths of mind's awareness of body, and its efforts to understand bodily modifications. Hence, for him wonder belongs to the very essence of what it is to be a mind at all – an expression of a mind's *conatus* as effort to persist in understanding. Wonder brings a halt to the flow of the mind's movement between similarities. It is a thwarting of anticipation – a frustration of expectation. Yet this pause in thought strengthens understanding, rather than diminishing it.

Encountering singularity, the mind initially finds no room to move. However, having been stopped in its tracks, it then must resort to finding less obvious resemblances. For the mind of its essence strives to persist in under-

standing bodily modifications. The blocked pathway – the encounter with singularity – becomes an impetus to finding alternative ways forward. Having been rendered passive, the mind finds its own way back to the activity of thought. Properly understood, wonder thus enhances – rather than impedes – the mind's ongoing struggle to understand the natural world and its own place within it.

The connections Spinoza has forged between wonder and imagination are grounded in painstaking definitions and deductions. That can make for dry reading. Yet his conclusions articulate a refinement of the understanding of wonder that has far-reaching consequences. The style and tone of Spinoza's discussion seem to belong in a different world from later exultation in the wild power of imagination, celebrated in Romanticism. Yet, cerebral though it may all sound, this treatment of wonder facilitates those later developments in the philosophical history of wonder.

Spinoza offers a treatment of wonder which stresses its role as a mind-stopping encounter with singularity. In his *Theological-political treatise,* he addresses more fully the social and political dimensions of wonder, thus construed. What he has to say there is also significant in relation to contemporary issues of educational theory and practice. His direct concern is with ways in which biblical narratives of religious mysteries can be exploited by untrustworthy theologians for their own ends – to the detriment of respect for scientific inquiry. However, his analysis has broader application to social critique of the operations of power through the manipulation of imagination and emotion.

The theologians criticised by Spinoza present themselves as the authoritative interpreters of divinely revealed truth. They induce fear and elicit hope – in ways that reinforce their own power. His analysis of those operations – and obfuscations – of social power provides a model for broader criticism of manipulative exploitation of prevailing cultural narratives. It amounts to an exercise in social critique, which remains relevant in present times.

Confronting the dogmatic theologians, Spinoza insisted that the biblical narratives should be understood as constructs of imagination. He considered those narratives, thus understood, as worthy of respect. Stories of divine intervention – of miracles and prophecies – could in his own times help shape the collective self-understanding of a people: of who they are, and of what is central to shared lives. More generally, cultural narratives express insight into what matters in a people's past, and in its collectively imagined future. Yet such 'fictions' – if they are misconstrued as definitive truths – can also threaten the collective well-being which they make possible.

Spurious certainties can debilitate the life of the mind. Spinoza's critique of them holds beyond the consideration of the political role of biblical stories in

the 17th century. The broader point here is that the cultural narratives that help bind a human collectivity together can also produce a hardening of thought, which restricts the freedom of minds to move in new directions. The social significance of Spinoza's treatment of wonder here becomes clearer. The shock of incredulity at the utterances of powerful leaders can induce a constructive pause in thought, followed by renewed active thinking. Such transition through wonder from mental passivity to activity can be a healthy response to the mind-numbing effects of many of the repetitious mantras of contemporary political rhetoric.

I want to suggest, then, that Spinoza's treatment of wonder remains of contemporary significance – in relation to both individual and collective imagining. Wonder induces a pause in thought. However, for Spinoza that pause is not the intrusion of an alien passivity into the activity of thinking. Rather, it is integral to intellectual vitality – an aspect of the striving for understanding, which he sees as the very essence of a human mind. To wonder is to confront an intellectual impasse: the mind comes to a temporary pause, in which it must begin thinking anew.

Perhaps it could be said that, on Spinoza's account, wonder allows the mind to 'move forward'. But the notion of 'moving forward' – at any rate in English – has itself become a familiar mind-numbing rhetorical refrain. A quick 'moving forward' does not always yield an appropriate or viable way out of either a personal dilemma or a policy impasse. So, daring to speak here on Spinoza's behalf, I would prefer to suggest that true wonder demands a decent interval of acknowledged *not knowing* where to move.

Some lessons from Spinoza

In conclusion, what more specific lessons might be drawn from Spinoza for wonder in contemporary education?

Lesson no. 1: Wonder, in association with imagination, is central to education. It should not be seen merely as light relief from the serious business of learning. If it is associated with 'play', that should be in the spirit of Nietzsche's remark about the seriousness of the child at play. Wonder should be seen as central to the process of coming to maturity.

Lesson no. 2: It is worth reflecting on the implications of Spinoza's perhaps surprising claim that wonder is not itself a specific emotion. His insistence on that point suggests that wonder should not be construed as belonging on a

list of 'good' emotions to be inculcated by educators. The 'open-mindedness' associated with wonder does have ethical aspects. But wonder is integral to the learning process itself, in contrast to the ongoing ethical challenges which can arise in the course of inquiry.

Lesson no. 3: To think with Spinoza about wonder is to engage with the claim that reason, imagination and emotion are all interconnected. Especially, it is to question the notion that being 'objective' is a matter of cultivating intellect *at the expense of* imagination or emotion. Keeping that in mind might also help soften sharp separations between different areas of a curriculum – between 'hard' sciences as against 'soft' humanities, literature or the arts. Those sharp separations of subject matter often rest on the questionable idea that intellect can always in principle be extricated from supposedly ancillary, or subsidiary, operations of imagination and emotion.

Lesson no. 4: Perhaps finding a place for wonder in education is not really a matter of *teaching* it. Plato has Socrates present the boy Theaetetus as already prone to wonder before he begins his induction into intellectual inquiry. Theodorus may have been right in describing his student as having special aptitude for mathematics and other forms of methodical thinking. But, with respect to his capacity to wonder, Theaetetus was like any other child.

Wonder comes naturally to children. What Spinoza added to that was the stronger claim that it is inherent in a mind's effort to persist in being; and hence that it belongs in adult life as much as in childhood. The important insight here is that a wondering child has not yet learned *not* to wonder. Strictly, then, wonder cannot be taught. Yet mature, adult wondering can be modelled in a teacher's own intellectual style or character. So, the lesson here is to let students wonder – to make space for it; and that we should be willing, where appropriate, to do it ourselves in their presence.

Lesson no. 5: Wonder is a collective as well as an individual phenomenon. It has social, even *civic*, dimensions. The capacity to wonder – the capacity to *not stop* wondering – is not just important to individual flourishing. It is crucial to collective well-being and to citizenship. Perhaps we should see it as a bulwark against the threats to active thinking which can leave a society vulnerable to the abuse of power. So, as much as is practical, we should treat wonder – as Spinoza did – as opportunity for renewed collaborative thinking. Don't think of it – as Descartes did – as an individual lapse into gaping, statue-like passivity, to be discouraged by an all too fast 'moving on'.

In conclusion, of course, none of this is to suggest that teachers need to become Spinoza scholars in order to be good educators. It is a matter of reflecting on a general approach, rather than of trying to act out the details of a complex theory. In his engaging little book, *Spinoza: practical philosophy,* Gilles Deleuze wrote that Spinoza is unusual among philosophers in that non-philosophers can take from him a sudden flash of illumination – and find that, in a practical sense, they are 'Spinozists'. Film makers, painters too – even chance readers – he says, can have that experience, often more readily than professional philosophers do. I suggest we might add to that: Yes, and educators too.

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5 Philosophical Arguments and the Experience of Cosmic Wonder

Sophia Vasalou

Introduction

Few today would deny that the thoughts we think determine the emotions we feel (at least in part). Fewer still would deny that the emotions we feel determine who we are, and how well our life goes for us. In this paper, I want to focus on one particular emotional experience – one particular form of wonder – that occupies a special place in our understanding of wonder, and on its role in determining our character and the character of our life. This is the experience often referred to as 'cosmic' or 'existential' wonder. On a common characterisation, this form of wonder finds its object in the very existence of the world, and receives its quintessential expression in the question, "Why is there something instead of nothing?" It is an interesting empirical question how, by what routes and under what circumstances, such wonder arises. While not foreclosing this general question, I will be focusing on one route that seems to me especially important, namely philosophical argument, and in particular the kinds of arguments that typically feature in religiously motivated works. Some of these arguments have a familiar place in natural theology projects, and represent strains of a well-known species of argument known as the 'cosmological' argument. But such argumentation can also be found in other types of religiously motivated narratives that do not form straightforward exemplars of this genre. In both cases, these works mediate an experience of wonder that is a direct product of their reason-giving narrative. In this capacity, they bring up a challenging question about the relationship between our 'thinking' and our 'feeling' in the case of this emotional experience. If wonder is mediated by argument, is it only as good as the reasoning that produced it?

How we answer this question has important implications for the way we understand the cognitive dimensions of wonder as an experience, and also the

way we approach its value. Yet part of my aim in pursuing this question is to expand our picture of the routes through which wonder becomes available to us, and to foreground the role of narratives more generally, and philosophical narratives more specifically, in educating us into it. To the extent that these philosophical narratives develop within religious traditions, this points to the special role that a theological education may have to play in strengthening the muscle of wonder.

I begin (section 1) by a general comment on this type of wonder, which sets the stage for a question about how the experience may arise. I then pick out natural theology as an important cultural route to the experience, and in particular cosmological arguments for the existence of God, and I outline a few prominent exemplars of these arguments. The ability of this type of argumentation to produce assent to substantive claims about God's existence, I suggest (section 2), can be separated from its ability to generate an emotional response of wonder at the world's existence. Yet if this response emerges as a direct outcome of philosophical reason-giving, doesn't its validity equally depend on the strength of these reasons? Given the notorious controversies that beset these kinds of arguments, this experience would appear to be a highly fragile good (section 3). Having framed this challenge, I offer two responses. One (section 4) involves a way of defending the experience that focuses on its internal features and phenomenology. This defence is developed through an analogy with a similar type of wonder produced by pharmacological means, specifically through exposure to psychedelic substances. Another (section 5) briefly makes the case for a more cognitive justification of the experience, focusing on the capacity of these arguments to make certain concepts – like the ordinary concept of a 'world' – thinkable to us. We don't need to be persuaded by these arguments, I conclude, to avail ourselves of the possibilities of wonder they offer.

1.

Wonder comes in many kinds; yet no doubt one of the most powerful, and also the most elusive, is the experience often referred to as 'cosmic' or 'existential' wonder.[1] Those who have written about this experience have described it using a number of interrelated expressions: as a wonder directed to existence as such, to the *that*-ness of things, or to the world taken as a totality. Existential wonder, in the words of Ronald Hepburn, is the sense of astonishment we feel when the 'sheer existence of a world' strikes us as an extraordinary and inex-

1 Hepburn (1980) refers to this experience as 'existential' wonder, and Schinkel (2018) follows him in this usage. Evans (2010) uses the term 'cosmic' wonder in the same sense. I will use both terms interchangeably.

plicable fact (Hepburn 1980, 10). Wittgenstein gave voice to this wonder using a religious turn of phrase in his *Notebooks*: "The miracle is that the world exists. That what exists does exist." (Wittgenstein 1979, 86e). Its archetypal expression, as he would later give it in his "Lecture on Ethics" is in the exclamation: "How extraordinary that anything should exist!" "How extraordinary that the world should exist!" (Wittgenstein 1965, 8). The explanatory question "*Why* is there something instead of nothing?" forms a natural articulation of this sense of surprise.

It is a type of wonder that on the face of it seems very different from many of the cases we would instinctively invoke when seeking to illustrate the concept—whether it's laying eyes on a blood moon or Aurora Borealis for the first time, soaking up a fantastical architectural creation that just burst into view in a newly visited city, confronting an exquisite work of art on a gallery wall, or watching the athletic exploits of an exceptionally gifted individual on a sports track or a TV screen. Some differences are obvious: the familiar sight of the world around us is a very different kind of object from the unfamiliar sight of exotic celestial phenomena or architectural fantasies made real. Other differences require closer reflection. One of these concerns the question just how we take these experiences to arise.

When considering these core cases, for example, it seems relatively easy to understand *why* someone might experience wonder, in the double sense of *what it is about* those objects that makes them worthy of wonder and *how the experience came about*. Any description of the causal history of these experiences would begin with the following: she lifted her eyes to the moon, to the skyline, to the museum wall, to the TV screen, and saw.... In a handful of cases, the explanation might (almost) stop there. Being the kinds of creatures that we are, such-and-such sensory stimuli simply affect us in certain ways (under certain conditions that include novelty of stimulus, absence of fear, and so on). It is such cases that inspired Philip Fisher to tie wonder narrowly to visual perception, describing wonder as the "outcome of the fact that we see the world" (Fisher 1998, 17). In many other cases, the causal history would have to be extended backwards to encompass the development and education of the judgements mobilised in our affective response. Our wonder at artistic objects or athletic achievements is a case in point, yet the same arguably applies to certain kinds of natural phenomena.[2] In these cases, we may often have to explain *what it is about* such objects that makes them worthy of wonder to others who do not immediately

2 The experience of the sublime in nature is a case in point. The historicity and cultural evolution of this aesthetic response was central to Nicolson's analysis in Nicolson (1959). Cf. Macfarlane (2003), e.g. 14-19.

share our response. Yet even in these cases, it is the particular object before us that serves as the immediate trigger of our response. *That* would seem to be the more general truth in Fisher's claim.

What about existential wonder? How might such an experience arise? This type of experience seems especially recalcitrant to being accommodated by Fisher's visual model in its simplest form. Taken as a surprise that attaches to the sheer existence of a world, it is not an experience we could easily regard as capable of being stimulated by any one object in this world, a fortiori by an object of visual perception.[3] Such wonder may, as Hepburn observes, be directed to particular objects 'seen as representing the whole' (1980, 10). In the most minimal sense, we need to direct our gaze *somewhere*. Yet it is clear that seeing objects *as* tokens of something else is no mere seeing. It naturally invites the question how such objects became tokens, and what kind of education our judgement has undergone that enabled us to see them this way. Hepburn himself clearly points to this cognitive education when he refers to the 'thought of the whole' as the object of existential wonder (1980, 10).

It is important to bear in mind that the question just posed – how does existential wonder arise? – is ultimately an empirical one, and one that takes at least two forms, one concerning the historical appearance of this experience in the trajectory of an individual's life, and another concerning its appearance in our trajectory as a species. My aim here is not to provide an exhaustive account of the causal pathways through which this experience may arise, and certainly not to engage in tantalising yet fruitless speculation about how it might have arisen in our natural history. It is possible that, for some individuals blessed with what we may call 'mystical genius' – gifts analogous to though not entirely identical with those of Nikos Kazantzakis' fictionalised hero Alexis Zorba (Vasalou 2015, 196-99) – a sense of surprise at the sheer existence of a world might arise with few antecedents. This is a possibility that would become more plausible if we followed the Eastern Orthodox theologian and philosopher David Bentley Hart in his hypothesis that such wonder, drawn to the 'sheer inexplicable givenness of the world,' is 'primordial' for us, 'an abiding amazement' that 'only in very rare instants breaks through into ordinary awareness' yet that 'lies just below the surface of conscious thought' at all times (Hart 2013, 87). As children, before habit displaced awe, we perhaps experienced this wonder with greater constancy.

Yet Hart's view (a view of human nature) is compatible with acknowledging that this wonder will usually require external assistance in order to break into

3 Which is also why the experience is hard to preserve, as Hart notes: "there is nothing to hold on to in the experience" (2013, 89).

conscious awareness. My own intuition is that for many of us, at least at the point of natural history where we stand, this wonder, like the wonder at artistic works or athletic achievements and possibly even more so, is cognitively saturated at a deep level, and emerges as the cultural product of an education of judgment that makes certain kinds of thoughts available to us. There is arguably more than one form such a cultural education might take, yet in my view one of the most important is the one provided by intellectual traditions in which a sense of surprise at the existence of the world has been enshrined in well-developed practices of inquiry. If we wished to locate an exemplar, we need look no further than the type of religiously motivated inquiry known as 'natural theology'.

Natural theology, as usually understood, is a mode of inquiry into God's nature and existence which relies on 'natural' epistemological resources such as observation and reason to effect its aims, to the exclusion of scripture and other supernatural sources of knowledge. Enjoying a long history across different cultural contexts and religious communities, one of its best-known expressions lies in a cluster of philosophical arguments that set out to establish the existence of God drawing on a range of rational considerations. These include the teleological argument (or argument from design), the argument from religious experience, the moral argument, and the argument from consciousness.[4] For my purposes, the argument that holds special interest is the one commonly designated as the 'cosmological' argument. It is a type of argument that has assumed a variety of forms at the hands of different thinkers. Yet its central pivot is the idea that reflection on the cosmos, or on fundamental features of the constituent parts of the cosmos, compels us to acknowledge the need for an eternal creator.

C. Stephen Evans (2013, 49-51) helpfully distinguishes between two versions of the cosmological argument, ones that start from particular parts of the natural universe ('part' arguments) and ones that start from the universe as a whole ('whole' arguments). Exemplifying the former, Thomas Aquinas thus focuses on certain general features that characterise particular things, such as their being in motion or their having been caused to exist. He then combines this with a claim that an infinite regress of explanations is not possible, to reach the conclusion that there must be a first mover or first cause who coincides with what we understand as 'God'. A good example of the second type of argument is supplied by the German philosopher Leibniz in a short yet much-discussed

4 Analyses or restatements of these arguments can be found in virtually any introduction or companion to the philosophy of religion. For two good starting points, see Wainwright (2005) and Craig and Moreland (2009).

tract titled "On the Ultimate Origination of Things". Drawing on the principle of sufficient reason – which stipulates that there must be a sufficient reason for the existence of anything that exists – Leibniz moves from a claim that particular things in the world are contingent to a claim that the world as a whole, taken as the aggregate of contingent particular things, is contingent. The existence of the world as a whole, therefore, requires an explanation which is not part of this aggregate. The ultimate reason for its existence must be 'above the world, and, so to speak, extramundane' (Leibniz 1989, 149).

Leibniz frames his argument with the help of a concrete example, which it is worth quoting in full.

> Let us suppose that a book on the elements of geometry has always existed, one copy always made from another. It is obvious that although we can explain a present copy of the book from the previous book from which it was copied, this will never lead us to a complete explanation, no matter how many books back we go, since we can always wonder why there have always been such books, why these books were written, and why they were written the way they were. What is true of these books is also true of the different states of the world, for the state which follows is, in a sense, copied from the preceding state, though in accordance with certain laws of change. And so, however far back we might go into previous states, we will never find in those states a complete explanation *[ratio]* for why, indeed, there is any world at all, and why it is the way it is. (Leibniz 1989, 149)

Despite the emphasis in this passage, Leibniz believed that his argument holds fast regardless of whether we posit that the world has existed eternally or had a beginning in time. In this regard, his position can be distinguished from that of another well-known version of the cosmological argument, often captioned the 'kalām' argument to honour the paradigmatic articulation it received among Muslim practitioners of theology (*kalām*).[5] There, the argument pivots around the claim that the universe had a beginning. Since anything that has a beginning must have a cause and nothing can cause itself to begin, there must be a cause that lies outside it.

This argument obviously hinges on the premise that the universe had a temporal beginning. The attempt to prove this proposition has taken a variety of forms in philosophical and theological circles past and present. The ninth-century Arab philosopher Abu Yusuf al-Kindī, who flourished around the same

5 The most prominent contemporary exponent of this argument is William Lane Craig. For a recent exposition, see Craig and Sinclair (2009).

time that Islamic theology was acquiring its lasting lineaments, followed one particular approach when seeking to defend the Islamic idea of *ex nihilo* creation against the implications of Aristotle's assertion of the world's eternity. This approach was based on a simple (and itself Aristotelian) idea: the infinite cannot be traversed. If the world was eternal, this would mean that an infinite amount of time would already have elapsed. But if that were the case, we would never have gotten to the present moment (yet here we are!).

> Before every segment of time there is [another] segment, until we reach a segment before which there is no other segment (...) if it could be otherwise, every segment of time would be followed by another segment, to infinity. In that case we could never reach a specified time, because from infinitely long ago up until this specified time is a duration equal to the duration from this specified time all the way back in time to infinity.

Hence, "it is impossible that there be a body that has always existed", and "the universe necessarily has a creator [who created it] from nothing" (al-Kindī 2012, 66-67).

In another set of arguments, al-Kindī focuses on proving the slightly different premise that the universe cannot be infinite in magnitude – an idea which he believes (rightly or wrongly) entails that it cannot be eternal in time. He does this by asking us to assume an infinite body and to imagine that something is subtracted from it; he then invites us to consider whether this same body is finite or infinite after the subtraction of this finite piece. Both possibilities seem to ensnare us in contradictions, proving that an infinite universe cannot exist.[6]

2.

My intention in the above has not been to provide a detailed account of these arguments, certainly not one that would be informative enough to enable a reader to determine whether they are persuasive. My presentation has been inevitably skeletal and elliptic. Taking in a skeletal outline of this type is not the same as giving these arguments a proper hearing. To let oneself be properly worked upon by a philosophical argument, giving it a fighting chance of persuading one, one needs to go through it without haste, engaging with its detail with a reasonable amount of care and attention. Even if these basic conditions are met, evidently one cannot generalise about the result of this engagement.

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6 For a lucid reconstruction of this argument, see Adamson (2007, 93), and generally chapter 4 for a comprehensive discussion of al-Kindī's arguments against the eternity of the world.

Arguments, it is often observed, are not 'coercive', in the sense of being able to *force* us to believe their conclusions whether we like it or not.[7] Arguments about the existence of God are notoriously even less so (a point whose special relevance I will return to). How a train of reasoning 'works' upon a person depends on many additional conditions, including how well adapted it is to her cognitive and imaginative capabilities. If mathematics is not your forte, al-Kindī's (and his modern heirs') mathematical arguments against an actual infinite will probably leave you unmoved. It also depends, more obviously, on how amenable she already was to the conclusion, and to being worked upon by an argument that she knew was designed to secure it. This last condition is of special importance, and evokes well-known questions about the right balance of sympathy and critical distance in our reception of philosophical arguments.

With all this in mind, and while allowing for these disparate effects, I want to distinguish between two ways of construing the effects that the kinds of arguments I outlined may possibly, if not necessarily or invariably, produce. As crafted by their authors, the intended effect of these arguments is to secure assent to a substantive conclusion concerning God's existence. We naturally tend to judge the failure or success of philosophical arguments depending on how they have altered our belief set and epistemic commitments. By the same token, we tend to think of the *experience* of engaging with and responding to an argument in purely cognitive terms: we think, we scrutinise, we analyse, we judge (the truth of individual premises, the soundness or validity of the entire structure). This picture conspicuously leaves out of view how such arguments may impact a broader range of features of our mental life, including the emotions and the imagination. And the specific suggestion I want to make is that our picture of the reception of these arguments will be incomplete unless we acknowledge that one of their peculiar effects may lie in stimulating the feeling we call 'existential wonder'.

The tendency to give only patchy acknowledgement to the affective dimensions of intellectual inquiry has a long tradition, and is tinctured by an old suspicion of passion as reason's saboteur. Wonder has traditionally featured as an exception to this rule, with philosophers from Aristotle to Descartes and beyond recognising its importance as a passion of inquiry (Vasalou 2015). Yet certainly among these thinkers, the focus has fallen on the role of wonder in stimulating thought. What I am suggesting is that certain kinds of thought can also serve to stimulate it, and that the arguments I have considered offer

7 The term, and specification, is Nozick's, in Nozick (1981, 4-8).

one way of explaining how a wonder at the existence of the world may become available to us.

On one level, their capacity to do so can be understood very simply. To follow an argument at all (and certainly to follow it with the right level of sympathy, care and attention) is to allow yourself to entertain intellectual possibilities. And one of the central possibilities that cosmological arguments – particularly the class that Evans calls 'whole' arguments – invites you to take on is that the world's existence requires explanation; that the fact that anything exists is not self-explanatory. This requires, at some level, entertaining the contrary possibility that no world might ever have existed. It requires you to imagine the world away. If you didn't entertain these possibilities, even in a hypothetical mode, you simply wouldn't be following the argument with the right level of sympathy and attention.

The reference to imagination is not tangential here. Because like many powerful arguments, these philosophical arguments work by mobilising our imagination, whether in more or less direct ways. Leibniz's vivid example of the concatenation of book replicas is a prime illustration of an appeal to the imagination to crystallise ideas that would otherwise remain highly abstract. We find an equally direct if less vivid invitation in al-Kindī's imagined additions and subtractions from the imagined body of the universe. Less direct yet still present is the invitation represented in his suggestion that if we try sending our minds back toward the infinity of time, we will fail to make it back to the present in which we exist, and that if we follow the chain of time backwards segment by segment we will hit upon the cliff-edge of pre-creational 'nothing'. To take in al-Kindī's philosophical prose *is* to imagine our way into nothing.

The same appeal to the imagination can be found in the work of David Bentley Hart, a writer whose special interest in this context partly lies in the salient place he assigns to the experience of wonder within the philosophical narrative of his 2013 book *The Experience of God*. Hart's project in this book is not a wholly natural consort to the genre of philosophical arguments I have outlined. He modestly describes his project as a mere 'lexicographical exercise', which aims to offer a definition of the concept of God as understood among the theological and philosophical arms of the major global religions. Hart's stated concern is not with rational proofs for God's existence. This is partly tied to a sense of scepticism about the power of such proofs to change minds (Hart 2013, 83-84). Instead, Hart places his trust in the power of experiences. Some of the most important insights, in his view, are already present in our experience, and can be harvested "by way of a contemplative and moral refinement of that experience" (2013, 44). First and foremost among the experiences that interest Hart is the one I have been designating as existential wonder, when we

suddenly become aware of the 'utter uncanniness of the reality we inhabit' and we are shocked by 'the sheer unexpected "thereness"' of everything around us (2013, 88, 91).

Hart does not, to my knowledge, explicitly describe the aim of his own narrative as that of helping produce that 'contemplative and moral refinement' and thereby reconnecting his reader to that experience of mystery. Yet this is a natural way of receiving his aim. And if this experience crystallises for the reader following Hart's narrative, it will partly be by working her way through a series of philosophical arguments. Because while Hart's stated concern is to define a concept, that means illuminating the place this concept occupies in 'logical space'. That in turn requires saying something about traditional proofs for God's existence, notably including cosmological arguments, which show why the concept of God occupies a space that 'no other kind of causal explanation can intrude upon' (Hart 2013, 99). It also involves philosophically evaluating the coherence of naturalism as a total worldview, and interrogating the claim that science could ever provide an answer to the question of existence and explain the basic fact that things are.

Many of the arguments featured in classic discussions of God's existence find a limpid restatement in Hart's account. So do the appeals to the imagination they harbour. In one of his multiple passes at naturalism, Hart draws a (traditional) distinction between 'accidental' and 'essential' causes to explain why even if one holds that the world did not have a beginning in time, the explanatory need opened up by the world's contingency will remain. A hallmark of the relation established by accidental causes is that "the consequences of a particular thing can continue indefinitely after that thing has disappeared, because all causes in the series are ontologically extrinsic to their effects". A classic example is the causal relation between a man and his grandson: "by the time the latter is sired the former may have been dead for decades (...) The relation is one of antecedent physical history, not of immediate ontological dependency, and so the *being* of the grandson does not directly depend upon the *being* of his grandfather." To explain existence, you need a different kind of cause. "The ultimate source of existence cannot be some item or event that has long since passed away or concluded, like a venerable ancestor or even the Big Bang itself – either of which is just another contingent physical entity or occurrence – but must be a constant wellspring of being, at work even now." In traditional religious thought, the metaphor is that of the flame of a candle or lamp and the light it casts in a room. Snuff out the flame and the whole room goes dark. The modern version of that is that of an electric current that "if shut off at the source, ceases along all power lines at once" (Hart 2013, 103-104).

3.

I have been suggesting that religiously motivated philosophical narratives, paradigmatically cosmological arguments for God's existence, can provide the cognitive education that makes the fundamental experience of 'cosmic' or 'existential' wonder available to us. They do so, at the simplest level, by inviting us – as part of the *bona fides* of seriously engaging with the argument – to think ourselves into the proposition that the world's existence is not self-explanatory and to temporarily entertain the possibility that nothing at all might have existed. Direct and indirect appeals to the imagination form an important part of the means through which such narratives make this possibility thinkable for us.

My view stands in contrast with the account presented by Stephen Evans in *Natural Signs and Knowledge of God* in the context of a broader re-evaluation of the nature of traditional arguments for God's existence. In Evans' view, these arguments are grounded in, and represent attempts to rationally articulate, what he calls 'natural signs', which point to God's reality in a non-inferential manner. Thus, the beneficial order we observe in the natural world is the natural sign that finds a rational articulation in teleological arguments for God's existence. The natural sign that lies at the core of cosmological arguments more specifically, in Evans' view, is the experience of cosmic wonder. "[W]hat lies at the bottom of all or at least most of the forms of the cosmological argument is a certain experience of the world or objects in the world, in which they are perceived as mysterious or puzzling, crying out for some explanation" (Evans 2010, 60). It is this fundamental experience that cosmological arguments attempt to rationally articulate. As a natural sign, this experience is prior to the arguments, their stimulus rather than their cognitive product; and it is the power of this fundamental experience that explains where such arguments derive their power. Central to Evans' account of this relation is a view of cosmic wonder as immediate and irreducible. "We simply perceive the universe as surprising; on reflection we might cite various characteristics of that universe as the ground of the perception, but the perception itself is immediate and primary." (Evans 2010, 61).

As I said earlier, it is no part of my purpose to exclude the plurality of routes through which this experience may arise, and to legislate against the possibility of a less mediated generation of it. My own sense is that this experience is less widespread among ordinary people, and more of an intellectual achievement, than Evans hypothesises.[8] All I would note here is that it is perfectly

8 His own examples of 'common' experiences of cosmic wonder (Evans 2010, 62) certainly point to some form of intellectual paternity, including the intellectual direction provided within spiritual practices. 'Wide accessibility' is an important criterion in Evans' account of natural signs.

legitimate, faced with a profession of puzzlement or surprise, to ask a person for their *reasons* for being puzzled or surprised. And it is arguably a perfectly legitimate expectation that a person be able to answer that question (even if this may sometimes require an effort). If the claim that cosmic wonder is an immediate and irreducible perception involves denying this simple point, it will seem unconvincing. More than any other type of wonder, cosmic wonder seems hard to separate from the thinking of thoughts and the giving of reasons. Reversing Evans' causal order, my suggestion has been that it is precisely philosophical arguments that may mediate our wonder and help us think the kinds of thoughts that make it possible. Faced with a question about why we feel surprised at the existence of the world, their reason-giving would feature centrally in our response.

Yet this now pulls into a view a question that many may have felt to have shadowed my above discussion. Because in fact taken most broadly, the point just made about this specific form of wonder is one that many theorists would be inclined to generalise to all emotional experiences. On a prominent view, all emotions involve what I loosely called the 'thinking of thoughts'. All emotions involve (on the strongest view, consist in) some form of judgement or cognition. It is this cognitive saturation, crucially, that provides us with a handle for critically evaluating particular instances of emotion. Many theorists distinguish between backward-looking and forward-looking justifications of emotions, or in another idiom, between the cognitive and strategic rationality of emotions (see e.g. briefly de Sousa 1987, 163-65, and Greenspan 1988, 8-9). The former concerns their representational capacity, while the latter concerns their capacity to stimulate actions which may bear different relations to an individual's interests and well-being. For any emotion, put simply, we might ask: is it epistemically appropriate, and are we served by the actions it makes us want to do? The most basic illustration of the former kind of assessment is where emotions depend on false beliefs, as when a feeling of anger is provoked by the mistaken belief that someone intentionally harmed us. It is easy to imagine cases where wonder might be criticised on such grounds. On the colourful side of the range, Derek Matravers gives the example of someone who "might think a certain child is the reincarnation of former beings, who carries within him or her memories drawn from several lives across the ages. Such a thought makes a difference to their experience, and they regard the child with wonder." Yet if the belief is false, the feeling of wonder it generates loses its warrant (Matravers 2012, 176).[9]

9 Matravers' concern is more directly with the loss of its *value*.

Yet if the cognitive constituents of an emotion provide different kinds of leverage for critical appraisal, the particular emotion I have considered represents an unusually stark case. Cosmic wonder, as I have described it, is not merely *constituted* by cognition in a softer sense but *caused* by it in the strongest possible sense, emerging in direct response to philosophical reason-giving and structured argument. As such, this is a sense of wonder that depends on reasons more than most. And this now raises an obvious question: Doesn't the *validity* of this wonder therefore depend on the strength of these reasons? To the extent that this experience of wonder is constituted by argument, doesn't it stand or fall with the argument?

I have said little so far about the qualities of the experience itself. Yet it would be difficult to keep its phenomenology out of the equation if one wanted to explain how this kind of question might acquire its motivation and urgency. Although Hart does not explicitly refer this experience to the operation of philosophical argument – I can think of no first-hand descriptions of argument-induced cosmic wonder – what he says about its quality captures some of its most important aspects, above all the powerful sense of significance it carries. During this experience, he writes

> we find ourselves brought to a pause by a sudden unanticipated sense of the utter uncanniness of the reality we inhabit, the startling fortuity and strangeness of everything familiar: how odd it is, and how unfathomable, that anything at all exists; how disconcerting that the world and one's consciousness of it are simply there, joined in a single ineffable event. When it comes, it is a moment of alienation from the ordinary perhaps, but not one of disaffection or loss; as long as the experience lasts, in fact, it has a certain quality of mystifying happiness about it, the exhilarating feeling that one is at the border of some tremendous and beautiful discovery. One realizes that everything about the world that seems so unexceptional and drearily predictable is in fact charged with an immense and imponderable mystery. In that instant one is aware, even if the precise formulation eludes one, that everything one knows exists in an irreducibly gratuitous way: "what it is" has no logical connection with the reality "that it is"; nothing within experience has any "right" to be, any power to give itself existence, any apparent "why." The world is unable to provide any account of its own actuality, and yet there it is all the same. (Hart 2013, 88-89)

As Hart notes, it is an experience that is inherently unstable, and cannot endure indefinitely. Yet while it lasts, it has the thrilling quality of a shattering if uncertain insight, which one struggles to find ways of accommodating long after it

ends. This profound sense of significance is also conveyed by Wittgenstein in his discussion of the topic. In the spare remarks he offers on the experience in the "Lecture on Ethics" (Wittgenstein 1965) possibly the most telling is his decision to class existential wonder as an experience of absolute value.[10]

And yet if the experience owes its power to an intuition of insight, what kind of insight is this really? It is precisely the phenomenological importance of the experience that creates a stake in its epistemic warrant and makes its rational dependence a point of anxious concern. The potential vulnerability of the experience is the fragility of a good. And it takes little to determine that the risk is a real one. Philosophical arguments for the existence of God are notoriously inconclusive, as even their most sympathetic discussants admit. In John Hick's view, neither theistic nor anti-theistic arguments deliver a clear verdict, for "the special evidences to which they appeal are also capable of being understood in terms of the contrary worldview" (Hick 1989, 12) – though for Hick, this inconclusiveness is less a bug than a feature, marking the inherent 'ambiguity of the universe' which permits both theistic and naturalistic responses and makes possible the uncompelled response in which religious faith consists. In developing his own understanding of theistic proofs as grounded in natural signs, Evans takes his point of departure from a similar observation about the divisiveness of these proofs and their failure to elicit conviction (Evans 2010, 1-3).[11] It is sometimes wryly observed that philosophy makes no progress. Yet this seems truer of this part of the philosophical curriculum than of any other.

Cosmological arguments, on which my focus has fallen, are no exception to this rule. All of the arguments referred to above have been the subject of fierce debate, with even the most fundamental intuitions they mobilise contested by their detractors. Take the principle of sufficient reason, which assumes we can keep asking "Why?" of every phenomenon including the totality of phenomena we call the world. Perhaps we are mistaken in thinking that the principle transfers from the parts to the whole, and that because it makes sense to ask for explanations for this thing or that, it also makes sense to ask for an explanation for everything there is. The very concept of the 'whole', Hume suggested, is merely an 'arbitrary act of the mind' (Hume 1998, 56) – the human mind machinating concepts and positing them of reality. Others, like Wittgenstein, might query whether the human mind can grasp the *absence* of the whole and truly comprehend the possibility that there might have been 'nothing' in place of

10 As I understand his discussion, the value is posited of the *experience*, not the object of the experience (i.e. the world) – though the two valuations are not wholly unconnected.

11 This also provides the context for John Cottingham's alternative proposal (Cottingham 2014, 28-35) that we view these arguments as aiming to clarify the content of theistic faith rather than produce such faith.

a world, without which the expression of wonder becomes nonsensical (Wittgenstein 1965, 8-9).

Even the most basic propositions in which the sense of cosmic wonder finds expression, such as that 'it was possible that there be nothing' or that 'the world might not have existed', would seem to disintegrate on the philosophical analyses of modal statements offered by certain stripes of modal logicians. David Lewis, for example, appears to simply build the possibility that there might have been nothing out of the system in his realist account of possible worlds.

> If a world is a maximal mereological sum of spatiotemporally interrelated things, that makes no provision for an absolutely empty world. A world is not like a bottle that might hold no beer. The world *is* the totality of things it contains, so even if there's no beer, there's still the bottle (...). Minimal worlds there can indeed be. There can be nothing much: just some homogeneous unoccupied spacetime, or maybe only one single point of it. But nothing much is still something, and there isn't any world where there's nothing at all. That makes it necessary that there is something. (1986, 73)[12]

It is these kinds of positionings that Hart likely has in mind when he puts clear blue water between himself and those who claim that "the question of existence is an inept or false query generated by the seductions of imprecise grammar" (Hart 2013, 90). Yet can such claims be dismissed out of hand, simply declaring that no manner of intellectual legitimation is required? In the case I've been considering at least, where the feeling of wonder – which registers the relevance of this question – has been generated through a process of inquiry whose grammar or propositional content eminently invites scrutiny, this would on the face of it seem tough to argue.

From one regard, the problem I have raised may appear paradoxical. Because if one experiences a feeling of wonder at all as a result of following the progress of an argument, this would imply that one has, at some level, been *persuaded* by that argument. So why must the issue of rational warrant come up from the perspective of this type of inquirer? Yet here is where the ecological conditions I mentioned earlier – the sympathy, care and attention with which one confronts an argument – provide some context. Because it is possible to follow an argument in an 'as-if' or hypothetical mode, to give a kind of hypo-

12 There are many questions one could ask as to how exactly this position engages with the perspective of theistic arguments. As Lewis notes (ibid.), his position should not be taken as an attempt to *explain* why there is something instead of nothing.

thetical assent to its elements, as part of a commitment to engaging with it in good faith and giving it a serious hearing. (One's amenability to the conclusion will no doubt play a role here.) Yet this assent is only provisional and is liable to be withdrawn when critical distance is fully re-established. Many a philosophical hypothesis, as Hume pointed out in a slightly different context, does not survive its exit from the conditions in which it was earnestly entertained.

The point at issue, to repeat, is not about the rational warrant for a substantive conclusion concerning God's existence – the specific conclusion these kinds of arguments are designed to press. It is about the rational warrant for an emotional response directed to the world's existence, which incorporates an acknowledgement that its existence requires explanation. These two epistemic stances are in principle separable. One can hold that the world's existence requires explanation (is surprising) while remaining agnostic about the conclusion that God supplies that explanation, though it certainly makes one more receptive to the latter conclusion (making it a 'living hypothesis', in William James' wording (2000, 199)). Yet as I have suggested, the former stance, too, represents a contested hence non-trivial commitment. Both stances emerge out of the same reason-giving process, and the challenges that beset it affect them alike. The possibility this raises is that cosmic wonder might ultimately rest on an error – and our wonder would not survive the discovery.

4.

How should one respond to this quandary? If it is a quandary at all, as I have said, this is due to the strong sense of significance the experience carries. It is this phenomenological weight that gives one a stake in securing its rational credentials. Is the only option, then, to try to 'save' the experience by *fighting* for these credentials – mastering the intricacies of these arguments, outfitting oneself with the necessary technical expertise, and tackling philosophical objections head on to demonstrate that this wonder is in fact error free?

This is not an approach I'll say much about, let alone try to carry out in the pages of this essay. All I will note about it is that it is not the approach on which the type of person who experiences this quandary as a quandary would be inclined to wager. This is mainly because it is precisely that – a wager. These philosophical debates, after all, are as old as the hills, and have exercised and divided some of the most brilliant minds. There are also debates in which successful contribution depends on skills of reasoning that are in turn partly dependent on contingencies of natural endowment. Even if these debates could be settled to universal satisfaction, the idea that one could be the chief agent of this result would seem hubristic if it wasn't so foolhardy. From the perspective that makes this problem appear as a problem– a perspective shaped

by a strong sense of significance which generates an anxiety about the rational vulnerability of the experience – to count on success of this kind is simply to trade one vulnerability for another.

But if we exclude this approach – securing this experience of deep wonder through a defence of the reason-giving process that founded it – how else can a warrant for it be found? I suggested above that it would be difficult to simply place this experience beyond the need for intellectual legitimation of this type, given the intellectual means through which it was produced. Yet I would now like to consider whether there isn't after all a more principled way of making that case. More specifically, I would like to consider whether there might be a way of legitimating the experience that involves no reference to (and is not contingent on the outcome of a critical scrutiny of) the rational means that produced it, but is rather grounded in the qualities of the experience itself.

From the perspective that makes this problem appear as a problem, this is arguably the approach that will seem most natural and compelling. And that is because it pivots on, and involves honouring, the basic perception of this experience as a good. Hart gave voice to this fundamental perception earlier when he wrote about the peculiar sense of 'happiness' this experience carries. Yet what kind of 'good' is this happiness? On the one hand, it is a type of happiness that cannot be reduced to a positive hedonic sensation or subjective feeling of pleasure. As Hart conveys, it owes part of its quality to a certain sense of promise, of something not yet attained but intimated in the experience as a possibility. He describes it as an "exhilarating feeling that one is *at the border* of some tremendous and beautiful discovery", not in possession of some definite insight. The indefiniteness of its insight gives the experience an ambivalent quality, as Anders Schinkel writes; for while "it opens the door to mystery, it does not resolve it" by offering definite answers (Schinkel 2019, 306). In this regard, it has the character of an unfulfilled longing.

Yet not all longing registers as a kind of pain (contrary to what Schopenhauer and other philosophers have sometimes argued). And some kinds of longing can feature as objects of value – first-order desires desired in a second-order way. The desire that others not suffer, or the longing for justice, are perhaps the clearest examples. That we have these kinds of desires tells us something about who we are, shaping or confirming our identity. So, I would suggest, does the type of desire that enters the phenomenology of existential wonder.[13] Part of the felt significance of the experience lies not in what it says about the world but what it says about ourselves as subjects of that experience.

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13 Compare my discussion in Vasalou (2015, 207-220), though it is not framed specifically in relation to argument-induced wonder.

The sense of wonder we experience when we are struck by the fact that "nothing within experience has any 'right' to be, any power to give itself existence" in Hart's expression, so that we ask ourselves why anything exists at all, cannot be divorced from a sense of astonishment at our own ability to formulate such thoughts and pose such questions. In this wonder – in the desire to understand – we discover ourselves. The desire itself seems to deliver a kind of truth; we know less than we imagined, yet more is possible than we thought. It supports the hope that a new transformative understanding of ourselves and our world might after all be possible. In a minimalist vein, Robert Solomon has described spirituality as simply a 'larger sense of life' (Solomon 2002). On these terms, we would have no difficulty recognising this as a fundamentally spiritual experience. For the duration of the experience, our vantage point is enlarged by a desire and hope for a deeper understanding of our nature and the nature of the reality we inhabit. Although the experience may ultimately bring no substantive insight beyond this, part of its special 'happiness' lies in the felt truth it carries.

This is by no means an attempt to provide an exhaustive characterisation of the phenomenology of the experience. Yet I have tried to at least indicate the kind of features that constitute this as an experience of intense meaningfulness and significance, and that might lead us to bracket the specific means through which it was produced and consider their rational assessment irrelevant to its warrant. But it is important to be precise about what this claim involves. This is not to say that the means through which the experience was produced are entirely irrelevant. In fact, they enter into its phenomenological warrant necessarily, given that the wonder we experience at our ability to formulate certain kinds of questions and thoughts is a wonder at a capacity that was *exercised and exemplified* by following a certain set of arguments and train of reasoning. Yet for this, the strength or weakness of the specific arguments is immaterial. What matters is not that *these* reasons work, but that *reason* does.

In considering how the means through which an experience is produced enter into an assessment of its legitimacy, it is instructive to consider a similar (if not entirely identical) experience of wonder where the issue of means comes up equally if not even more sharply. In the last few decades, there has been growing interest in the scientific community in the psychological effects of a class of substances often referred to as 'psychedelics', which include psilocybin, mescaline and LSD. These effects vary across individuals, and they can be tracked over different levels. Yet an element that recurs in descriptions of the mental state generated by a number of these substances is a sense of wonder. As Michael Pollan puts it in his recent book *How to Change Your Mind: The New Science of Psychedelics*, referring to LSD more specifically, one of its apparent effects is to

"disable (...) conventionalized, shorthand modes of perception". In so doing, it "restores a childlike immediacy, and sense of wonder, to our experience of reality, as if we were seeing everything for the first time" (2018, 9).

In the cultural history of the last century, it is hard to think of someone who conveyed the 'Adamic' quality[14] of this perception quite as powerfully as the English writer Aldous Huxley. In a short tract titled *The Doors of Perception*, Aldous Huxley set out to document the experience that followed his ingestion of half a gram of mescaline one day in 1953. His perception of the world underwent a startling transformation. Colours became more vivid; ordinary things like chairs and tables took on a miraculous aspect ("how miraculous their tubularity, how supernatural their polished smoothness!" (2017, 13-14)). Huxley found himself gazing in fascination at his flannel trousers ("Those folds in the trousers – what a labyrinth of endlessly significant complexity! And the texture of the gray flannel – how rich, how deeply, mysteriously sumptuous" (2017, 21)). In Huxley's experience, we will have no difficulty recognising a dramatic instance of wonder. This was an experience he repeatedly connected to a heightened sense of meaning and significance. Books on the shelves glowed with 'a profounder significance', theirs colours "so intense, so intrinsically meaningful, that they seemed to be on the point of leaving the shelves to thrust themselves more insistently on my attention" (2017, 11). Throughout, Huxley used a strong religious vocabulary to articulate that sense of significance. What he felt he was seeing was "what Adam had seen on the morning of his creation – the miracle, moment by moment, of naked existence" (2017, 9). He was beholding the 'unfathomable mystery of pure being' (2017, 25). Huxley described it as a 'sacramental' vision of reality (2017, 13).

Huxley has been far from alone in connecting this pharmacologically produced experience to a powerful sense of meaningfulness. These terms also feature prominently in the results reported by a landmark 2006 scientific study of the effects of psilocybin (Griffiths et al. 2006), which provided a key fillip for the renaissance of scientific research on the topic. In the core experiment, thirty volunteers were administered doses of psilocybin over two or three sessions conducted at two-month intervals. Studying the persisting effects of the experience, the authors of the paper reported that "67% of the volunteers rated the experience with psilocybin to be either the single most meaningful experience of his or her life or among the top five most meaningful experiences of his or her life", its level of significance similar "to the birth of a first child or

14 This is Pollan's term (2018, 25), in the context of describing one of the first experiences of LSD by its accidental discoverer, the Swiss scientist Albert Hofmann; its phenomenology shared interesting ground Huxley's later experience.

death of a parent" (Griffiths et al. 2006, 276-77). The title of the paper said it all: "Psilocybin Can Occasion Mystical-Type Experiences Having Substantial and Sustained Personal Meaning and Spiritual Significance."

There are important differences between the type of wonder that Huxley describes and the one I have been considering. Above all, the sensuous quality and perceptual focus of Huxley's wonder stands in sharp contrast to the intellectual, concept-driven character of the wonder I discussed.[15] Yet there are also important similarities. Both involve an apprehension of mystery, an orientation to being in its mysteriousness, and an intense sense of significance.[16] Both thereby draw us into a space where we view things with a 'larger sense of life'. Yet no less importantly, like the concept-driven wonder I have described, this pharmacologically induced wonder also invites a pressing question about how the means used to produce it affect its legitimacy. "This is how one ought to see," Huxley writes at one point; this is "how things really are" (Huxley 2017, 26). Yet how could this normative claim be validated? Powerful and transformative as it may be, what kind of *warrant* does this mode of perception have, taken as the result of ingesting a finite amount of a particular chemical compound? Our former question about whether cosmic wonder is valid unless founded on the right reasons is here reformulated as a question about whether wonder is valid unless grounded in the proper causes. Scepticism in the first case would be voiced in the question, "Is it rational?" Scepticism in the second would most likely be voiced in the question, "Is it natural?"

This kind of scepticism, as Pollan notes, is a hallmark of how such pharmacologically induced experiences are commonly received by outside observers. They stand in marked contrast to the way in which subjects themselves think about these experiences, even long after the event. Several decades before Huxley sat down to ingest his half gram of mescaline, William James outlined a number of key features that characterise mystical experiences. The most important, for our purposes, was what he designated as their 'noetic quality'.

> mystical states seem to those who experience them to be (...) states of knowledge. They are states of insight into depths of truth unplumbed by the discursive intellect. They are illuminations, revelations, full of significance

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15 Huxley in fact sees concepts as profoundly inimical to this Adamic perception. The concept "distorts every given fact into the all too familiar likeness of some generic label or explanatory abstraction" (2017, 63) and stands in the way of a more direct experience of the world.

16 In his account of one of his own psychedelic experiences, Pollan frames this perception of the mystery of being in terms far more closely related to the philosophical case I've been considering: he experiences a sense of 'gratitude for the very fact of being', viewing the fact 'that there is something rather than nothing' as a 'gift' and a 'miracle' (Pollan 2018, 280).

> and importance (...) and as a rule they carry with them a curious sense of authority for after-time. (James 1982, 380-81)

Put differently, these kinds of experiences carry a kind of intrinsic authority that makes them appear self-validating to those who have them. Although James did not have pharmacologically induced mystical experiences in mind when writing these lines, his remarks capture well the attitude of many of their subjects, for whom the authority of the experience is not undermined by consideration of the means that produced it. "How can you be sure this was a genuine spiritual event and not just a drug experience?" Pollan presses one of his interviewees. "It's an irrelevant question," she responds. "This was something being revealed to me" (Pollan 2018, 275). Huxley himself provides an especially suggestive expression of this attitude when he writes in one place: "What is important is less the reason for the experience than the experience itself" (Huxley 2017, 25).[17]

The case of pharmacologically induced wonder raises special questions that do not attach to its philosophically induced counterpart. Before taking a stance on it, certainly, one would have to say far more about the biochemical foundations of human experience, or about the difference between 'natural' and 'unnatural' chemical compounds. Similarly, the 'noetic quality' James describes appears to be stronger in the case of this wonder than its philosophical counterpart. The higher receptivity to doubt in the latter case reflects its intellectual character, though also its weaker cognitive or informational content compared with its pharmacological counterpart. This makes it necessary to recover the internal warrant of the experience through some type of rational articulation, as attempted here. Yet in both cases, the internal qualities of the experience play a determining role in securing this warrant.

Yet this kind of phenomenological validation, as the above will have made clear, must be understood more broadly than the term 'internal' suggests. These internal qualities are not, as I noted earlier, simply a matter of the positive valence or hedonic feel of the experience, which can in fact be ambivalent. In both pharmacologically and philosophically mediated wonder, the defining quality is a sense of significance tied to the 'larger sense of life' they evoke, which crystallises new ways of thinking about ourselves and about the reality we inhabit. Such experiences, while intrinsically valuable qua experiences, can also have important implications for broader well-being. In the case of pharmacologically induced wonder, this connection is supported by the 2006 study

17 Suggestive, though at a slight angle, as Huxley is not referring directly to mescaline as the reason or cause in this context.

just mentioned, in which several participants recorded an important increase in life satisfaction following their psilocybin experience (Griffiths et al. 2006, 277).[18] Although research in this area is ongoing, recent studies appear to confirm this connection.[19]

Does philosophically induced wonder carry similarly powerful consequences for well-being in the longer term? The answer to this question is not equally obvious, for reasons that point to an important difference between the two experiences that was already alluded to. The cognitive content of this type of wonder appears less definite and substantive (cf. Schinkel 2019) than that of many of the experiences described by consumers of psychedelic substances, making it less likely to have comparably transformative effects. That experiences of awe and wonder in general can make a significant contribution to well-being is a case being increasingly made, and is reflected in the interest being taken in these emotions by positive psychologists (e.g. Peterson and Seligman 2004). Though the empirical evidence does not yet seem ironclad, and the types of experience on which empirical studies focus are very different from the one I have been considering, part of this appears to rest on the sense of 'connectedness' these emotions induce – a feature they share with this particular form of wonder.[20] More generally, there is reason to think that the sense of hope, epistemic humility, intellectual openness, and enlarged self-awareness this particular experience nourishes would make an overall positive contribution to well-being.

There are empirical questions here, certainly, that can take fruitful investigation. Yet as defenders of a more objective conception of happiness or *eudaimonia* have argued, our character and our flourishing do not simply relate as cause and effect. Who we are is an essential part of our flourishing, rather than an extraneous means to it. If we take this view, the question whether this philosophical wonder contributes to our well-being will partly turn on the question whether we want to be the kind of people we become through the experience.

5.

In the above, I outlined one way in which the experience of existential wonder could be defended against the potential vulnerability of its rational

18 "Seventy-nine percent of the volunteers rated that the psilocybin experience increased their current sense of personal well-being or life satisfaction 'moderately' (50%) or 'very much' (29%)."

19 See e.g. the recent review article Jungaberle et al. 2018 and Elsey 2017. These kinds of (in principle objectively measurable) outcomes of the experience provide a partial remedy for the epistemological solipsism that its "noetic quality" entails (cf. James 1982, 422).

20 For wonder, see e.g. Fuller 2006, 88-92 (and generally chapter 6); for awe, see Yaden et al. 2019, 476.

foundations. This defence involves looking away from the reason-giving that produced the experience and locating its warrant in features of the experience itself. This form of internal validation entails considering the broader place this experience occupies in, and the impact it has on, the life of its subject.

Taken in this broader sense, this defence aligns itself with what I earlier described as the 'forward-looking' justification of emotions, which attends to their 'instrumental' or 'strategic' rather than 'cognitive' rationality. A purely instrumental approach to the warrant of this experience would not seem satisfying. Even though we often accept instrumental evaluations of our emotions, particularly where these concern *patterns* of emotional response ("Your anger issues are destroying your relationships", "This kind of anxiety is no way to live"), these kinds of analyses can also be alienating. From a first-person viewpoint, we tend to think of our emotions as rational in the *cognitive* sense – as appropriate to their object, not merely as helpful for our lives or conducive to our happiness. This is all the truer in this case, where wonder has been generated through unusually direct cognitive means. While the proposal I outlined has not taken a purely instrumental form, it may still be asked: Is there some way in which the rationality of the experience could be defended on terms more relevant to this means?

If this means a defence that manages to circumvent the philosophical battlefield around natural theology arguments, and that is inoculated against philosophical objections, that would be hard to come by. All I can do here, as a modest alternative, is outline what I think of as one of the leanest ways of understanding the intellectual workings of these arguments. To properly follow an argument, I suggested earlier, involves allowing oneself to entertain intellectual possibilities. These possibilities, in the case of some of the prime instances of the cosmological argument, include the proposition that the world's existence requires explanation, which involves entertaining the possibility that no world might ever have existed. Some of the ways in which these arguments make these possibilities thinkable for us is by working on our imagination: al-Kindī inviting us to follow time back rail by rail; Leibniz asking us to follow the states of the world back book copy by book copy. Yet on another level, we could describe their work more basically as a matter of giving clearer content to existing concepts – of making certain *concepts* thinkable, or more thinkable. It could be said that what makes us experience the need for an explanation of the world's existence is most simply the fact that, after many years as master speakers of ordinary language, we for the first time (to use a colloquial expression that seems especially apt) 'wrapped our mind' around the concept of 'world'. We enclosed the world in our minds, as a limited whole. The sense of wonder was the result of our enclosing the world in a concept and then being

able to look beyond it. It was a result of the mind's natural surpassing of a limit. 'Limited', it may be demurred, is what a specific *argument* makes it out to be: and that is in question. Yet my point is that it is natural to us to enclose things in concepts, and then to look beyond the limits of this enclosure – as natural as thinking and the ordinary idea of a 'world', even if we may need external help for its content to become fully available to us.

Philosophical arguments are certainly not the only way in which such concepts can become thinkable for us. The representation of the world as a limited whole is after all also supported by the best current scientific hypothesis about the origins of the universe. My account has been open to acknowledging the plurality of routes through which existential wonder might become available to us, or be nourished once it does. While we can be educated into this type of wonder in a variety of ways, the special role of theistic arguments in shaping the 'thinking' that makes this 'feeling' possible should lead us to look at the value of a theological education with new eyes. Like all philosophical arguments, such arguments work by making things we took for granted appear strange or wondrous. As such, they are a celebration of our capacity to think. Far more than other philosophical arguments, these arguments are a source of wonder at this capacity. We don't need to agree with their conclusions to make this wonder our own.

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6 On Wonder: Wittgenstein, Buber and Educational Practice

David Erlich

Introduction

Wonder, with an o, as written in the title of this paper, and *wander*, with an a, as in *to wander around*, have two different etymological origins. *Wander* comes from *wend*, which means *to turn* and also originated *wind* (Lexico: n.d). This allows us to think that, despite the different origins, we can relate wonder as something that appears to us, that invades us like a wind, when we turn. What we could be trying to mean by this is that to be grasped by that feeling of amazement and admiration that we call wonder, demands us to turn, to get out of an established route. There is a displacement that takes us out of our ordinary mastery of language. This view of wonder will be the one held throughout this essay as a starting point to the dialogue that will take place between Wittgenstein and Buber. The complete justification of the adequacy of thinking of wonder as a way of being almost *speechless* would require, perhaps, an entire essay about the ways in which wonder – or, at least, what may be called 'contemplative wonder' (Schinkel 2017, 544) – appears in the fundamental texts of our Western culture. We can, nonetheless, read it in sources as different as the Old Testament – in which God, seeing His Genesis creation can only utter the word *good* – and the famous passage of the *Critique of Practical Reason* – in which Kant states his admiration for and awe of the starry heavens above and the moral law within.

In part I of this paper, I will portray Ludwig Wittgenstein's approach to language in his *Tractactus Logico-Philosophicus* and the implicit acceptance of wonder as something that we cannot put into words. Then, I'll move on to the aim of reading Wittgenstein's "Lecture on Ethics" and understanding the ethical meaning of the acceptance of wonder, as an individual openness to the unsolvable mystery of the world. In part II, it will be argued that the Wittgen-

steinian theme of the limits between what can be said and what can only be lived as wonder is shared by Martin Buber, who approaches it in a relational manner. In part III, I will search, in the thought of the two philosophers, for some hints about how to give wonder a place in the classroom.

I. *Boundaries of language:* Wittgenstein and the ethical meaning of wonder

Tractatus' account of language

The *Tractatus Logico-Philosophicus*, a book that Wittgenstein wrote while he was a soldier in the First World War and that was published in 1921, was received with great joy by the neopositivists (Hanfling 2004, 195). We can understand why.

Wittgenstein argued that language, once logically analysed, should work like an image of reality: "We make to ourselves pictures of facts" (Wittgenstein 2010, 2.1)[1]; "The picture is a model of reality" (ibid., 2.12); "The proposition is a picture of reality" (ibid., 4.01). The resemblance between this image and what it stands for is what defines its truth-value: "The picture agrees with reality or not; it is right or wrong, true or false" (ibid., 2.21).

In this ideal language, all complex propositions are to be composed of simple propositions that would affirm a state of affairs: "The simplest proposition, the elementary proposition, asserts the existence of an atomic fact" (ibid., 4.21); "It is obvious that in the analysis of propositions we must come to elementary propositions, which consist of names in immediate combination." (ibid., 4.221). And, in these simple propositions, each name is to have a denotation – something we can point at to show what the word means: "The simple signs employed in propositions are called names[;] the name means the object. The object is its meaning (...)" (ibid., 3.202-3.203).

"Only the proposition has sense (...)" the philosopher writes (ibid., 3.3), suggesting that the linguistic atoms called *names,* such as *table* and *pen,* only have sense if put into a sentence that portrays a possibility about how the world is. For example, *the pen is on the table*. This proposition has sense because it is bipolar: I can look at how the world is and verify the proposition: if it fits the world, it is true; if it doesn't fit, it is false: "The proposition determines reality to this extent, that one only needs to say 'Yes' or 'No' to it to make it agree with reality" (ibid., 4.023); "Propositions can be true or false only by being pictures

1 As the *Tractatus Logico-Philosophicus* is famously written in very short sections, these will be used in the citations.

of the reality" (ibid., 4.06); "If the elementary proposition is true, the atomic fact exists; if it is false, the atomic fact does not exist" (ibid., 4.25).

It is important to note, *regardless* of being true or false, that *the pen is on the table* is a proposition with sense because it *can* be true or false – either the pen is on the table or it is not: "The picture agrees with reality or not; it is right or wrong, true or false"; "The picture represents what it represents, independently of its truth or falsehood (...)"; "What the picture represents is its sense"; "In the agreement or disagreement of its sense with reality, its truth or falsity consists" (ibid., 2.21-2.222). Now if I say, for example, *this pen doesn't have a soul*, this proposition would be nonsense because it is not verifiable. We don't know what could count as a case to refute it or confirm it, precisely because we do not have a clear referent for one of the names: we know what a pen is, but not what a soul is. As Wittgenstein puts it, if a proposition "has no sense this can only be because we have given no meaning to some of its constituent parts (ibid.: 5.4733).

In the *Tractatus,* philosophy is considered an activity of distinguishing language that has sense from language that does not, opening the field for the advancement of natural science: "The totality of true propositions is the total natural science (...). Philosophy is not one of the natural sciences. (...) The object of philosophy is the logical clarification of thoughts. Philosophy is not a theory but an activity. A philosophical work consists essentially of elucidations. The result of philosophy is not a number of 'philosophical propositions', but to make propositions clear. Philosophy should make clear and delimit sharply the thoughts which otherwise are, as it were, opaque and blurred" (Wittgenstein ibid., 4.11-4.112).

The implicit acceptance of wonder in the Tractatus

What about wonder, and in what way, is a brief outline of *Tractactus Logico-Philosophicus,* as I presented above, relevant to approach that matter?

At first glance, Wittgenstein gives wonder no special place in the *Tractatus*; only twice does Wittgenstein use words derived from wonder: one to express how 'wonderful' logic is (Wittgenstein 2010, 5.43), and the other to say that, considering the pictorial theory of language, "it is not to be wondered that the deepest problems are really no problems" (ibid., 4.003).

But although Wittgenstein does not explicitly use the word *wonder*, he does not dismiss it. Let us look at this and understand the significance of what we are trying to emphasise here.

We can, in a probably oversimplifying way, classify philosophers in two groups: those who dream with certainty and those who shed suspicion on that kind of dream. As Anthony Kenny suggests, *Tractatus'* Wittgenstein belongs to

the former: "the *Tractatus*, (...) he [Wittgenstein] believed (...), contained all that was essential for the solution of the problems of philosophy (...). With perfect consistency, once he had completed the book, he gave up philosophy" (Kenny 2006, 6). Moreover, certainty, in its highest point, makes wonder undesirable. If we go through life with absolute certainty, we will not make room for wonder and the interrogations it brings. (It is not to be understood by this that openness to wonder demands constant scepticism, as such an extreme opposite also suppresses wonder, because it levels all expectations.) Idealist Plato, absolutely convinced of the truth of his *Ideas,* wanted to expel the poets from the perfect *polis*; rationalist Descartes claimed, with pride, that his system would finally put an end to all disagreements; and neopositivist Carnap proposed that those in metaphysics should stop misusing language and, in fact, become musicians. So we could legitimately expect that Wittgenstein would reject wonder as something that takes language out of what it really ought to be – if language is a representation of the world, wonder would only be an obstacle to the achievement of that representation. But, to the reader's surprise, in the final part of the *Tractatus*, Wittgenstein talks about ethics, value, death and infinity. He tells us that "there can be no ethical propositions"; that "if good or bad willing changes the world, it can only change the limits of the world, not the facts"; that "death is not an event of life (...) [and] is not lived through"; that "if by eternity is understood not endless temporal duration but timelessness, then he lives eternally who lives in the present" (Wittgenstein 2010, 6.42-6.4311). And, at the end of the *Tractatus,* he commits himself to silence: "whereof one cannot speak, thereof one must be silent" (Wittgenstein 2010, 7).

The first proposal of this paper is that the final part of the *Tractatus* can be read as an *acceptance of wonder*. Anders Schinkel, in a recent paper about education and wonder, portrays wonder as "a mode of consciousness in which we experience what we perceive or are contemplating as strange, beyond our powers of comprehension, yet worthy of our attention for its own sake" (Schinkel 2018, 34). It is precisely the *Tractatus'* acceptance of wonder that delivers a tension between the need to say and the difficulty of saying. This is why Wittgenstein tells us that "there is indeed the inexpressible. This shows itself; it is the mystical" (Wittgenstein 2010, 6.522). Something is inexpressible if it demands expression without allowing the full achievement of expression. So we can agree with Nuno Venturinha when he says that *Tractatus* is not only a book about linguistic access to reality but also – and equally important – a book about the limits of such access (Venturinha 2010, 85). Moreover, this proposal goes in the same direction as Kevin M. Cahill's, although not as far in respect to the intentionality of the book, when he says – in a provocative work about Wittgenstein and wonder – that "the ethical point of the *Tractatus* can be found

in the book's attempt to reawaken a sense of wonder in its reader" (Cahill 2011, 13). Indeed, Wittgenstein first develops a description of language in which all expressible things would be totally clear and non-ambiguous in their expression and a logical analysis would seem to make all mystery disappear, but then at the end of *Tractatus*, he dismisses that view and accepts wonder as a human way of being, acknowledging the kinds of experiences that bring us face to face with the inexpressible.

Lecture on ethics and the unsayability of the world

In the beginning of his "Lecture on Ethics", delivered at Cambridge University in November 1929, Wittgenstein distinguishes between *relative judgements of value* and *absolute judgements of value.* Both kinds of judgements use the word 'good' to talk about something we appreciate. In Wittgenstein's view, relative judgements of value don't pose any kind of problem. He tells us that "if I say that this is a good chair, this means that the chair serves a certain predetermined purpose and the word 'good' here has only meaning so far as this purpose has been previously fixed upon" (Wittgenstein 2002, 1). Here, *good* only means *suitable in order to achieve a determined goal.* A good pen writes. A good oven heats the food. A good car takes us from one place to another. But do these *relative judgements of value* put us in contact with what Ethics is? "[T]his is not how Ethics uses [this expression]", says Wittgenstein. Ethics is concerned with 'what is really important', 'the meaning of life', 'what makes life worth living', 'the right way of living' (ibid., 1); and in this way Wittgenstein claims that Ethics delivers absolute judgements of value which are radically different from the relative ones written above. The difference relies on the fact that, according to Wittgenstein, relative judgements of value can be shown to be mere statements of fact, whereas absolute judgements of value are not reducible to statements of fact. So, if someone says: "My computer is a good computer", that judgement can become a statement of fact like: "My computer has this and this component that allows me to perform this and this task". But that kind of derivation from a judgement of value to a statement of fact, according to Wittgenstein, cannot be made in sentences like: "We ought to do good to the world". But if the sense of a sentence is the possibility of correspondence to the world as it is, and if judgements of absolute value cannot be transformed into sensical statements of fact, what sense do they have? Are they nonsensical? Why do they occur in language? Wittgenstein himself poses the question: "Then what have all of us who, like myself, are still tempted to use such expressions as 'absolute good,' 'absolute value,' etc., what have we in mind and what do we try to express?" (ibid., 3)

Wittgenstein suggests that judgements of absolute value are expressed, by different speakers, in personal situations of recurrent pleasure. He doesn't

use pleasure in a Cyrenaic sense, and more in Stuart Mill's sense of superior pleasures, as Wittgenstein tells that "one man would perhaps choose as stock example the sensation when taking a walk on a fine summer's day" (ibid., 3) For Wittgenstein, that experience of absolute value is described in the following terms: "when I have it *I wonder at the existence of the world*. And I am then inclined to use such phrases as 'how extraordinary that anything should exist' or 'how extraordinary that the world should exist.'" (ibid., 3).

The paradox is that, for Wittgenstein, to say: "I wonder at the existence of the world" is to misuse language, because a logically defined wonder would have to be a wonder caused by "something being the case which [we] could conceive not to be the case" (ibid., 4). For example, one can (or would) be struck by wonder when seeing a building of a shape one has never seen before, or a cat as big as a house. But to wonder at the existence of the world, and to express by that wonder an absolute value, is nonsensical. As Wittgenstein says, we "run against the boundaries of language" (ibid., 6). Wittgenstein finishes his *Lecture* with this remark: "[I]t is a document of a tendency in the human mind which I personally cannot help respecting deeply and I would not for my life ridicule it" (ibid., 6).

The second proposal of this paper is that the implicit acceptance of wonder in the *Tractatus* becomes, in the "Lecture on Ethics", explicit and gains an ethical significance. This ethical significance is openness to the mystery of the world, and this reading seems to agree with Cahill's when he says that "the language Wittgenstein uses here [in the *Lecture*] to express his wonder has clear resonances with the language we find [in the] *Tractatus*" (Cahill 2011, 54), and also when he states that "Wittgenstein saw it as one of his philosophy's central tasks to reawaken a sense of wonder for what he felt was the deeply mysterious place of human life in the world" (ibid., 2).

It is a well-known fact that the word 'ethics' comes from the Greek for *character* and wonder's ethical significance, in this reading of the Wittgenstein's *Tractatus* and *Lecture,* is the openness of our individual character to the unsayability of the world. It is, in a way, tragic, because we want to say what cannot be said; but it is also, very often, beautiful and pleasant.

Final notes on part I

Two final notes are needed here. The first one is to state that, despite not being the goal of this paper to position itself amongst the various currents in Wittgensteinian commentary, with regard to the importance of the ethical dimension in Wittgenstein's work there may be a proximity between the view I develop here and the ineffability reading of the *Tractatus*, which proposes that "the sentences of the *Tractatus* aspire to hint or gesture at ineffable truths"

(Conant 2003, 199, note 11), an "importance given to the ineffable that can be viewed as an ethical position" (Biletzki and Matar 2018). The second note is to state a problem which arises with the reading of early Wittgenstein that was just exhibited (yet again, this issue will only be summarized and not dealt with, as that task would exceed the purpose of this paper). This problem is that, for the contextualist approach to Wittgenstein, the so-called second Wittgenstein "dropped the notion of the 'limits of language'" with his change of focus from semantics to pragmatics (Rorty 1991, 64) – but that view might be oversimplifying. Although "Wittgenstein did not directly address the issue of ineffability in the *Philosophical Investigations*", "Wittgenstein's enigmatic comments about silence and the mystical in TLP" are not impossible to accommodate within later Wittgenstein's work (Knepper 2008, 65, 75); and, indeed, sections 217 of the *Philosophical Investigations* and 501 and 517 of *On Certainty* can, precisely, be read as still telling us something about the limits of language.[2]

II. Martin Buber and *I-You* wonder

Wittgenstein and Buber: a possible conversation

Based both on Dewey and on Oakeshott, Richard Rorty sees philosophy as an ongoing conversation (Rorty 2007, ix; Rorty 1979, 264). If philosophy is understood this way, a specific task of a philosophical paper might be the search for possible connections between philosophers that never really spoke to each other's work. It is with this premise in mind that we will now turn to Martin Buber, beginning with his work *I and Thou*.

There is, indeed, a thematic convergence between Wittgenstein and Buber. Although Buber's considerations about the genesis of basic linguistic expressions are more similar to Wittgenstein's language games in *Philosophical Investigations* than to his *Tractatus,* both Buber and *Tractatus'* Wittgenstein think about the limits of what can be said and, in that manner, it is very interesting that both Wittgenstein's *Tractatus*, published in 1921, and Buber's *I and Thou,* published in 1923, begin with statements about the world as a whole, while admitting that there's a part of the world which hides from language.

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2 PI 217: "If I have exhausted the justifications I have reached bedrock, and my spade is turned. Then I am inclined to say: 'This is simply what I do.'" (Wittgenstein 1958, 85); OC 501: "Am I not getting closer and closer to saying that in the end logic cannot be described? You must look at the practice of language, then you will see it." (Wittgenstein 1969, 501); OC 517: "But might it not be possible for something to happen that threw me entirely off the rails? Evidence that made the most certain thing unacceptable to me? Or at any rate made me throw over my most fundamental judgements?" (Wittgenstein 1969, 517, 518).

"The world is everything that is the case", Wittgenstein begins his *Tractatus* (Wittgenstein 2010, 1), to conclude that, in the end, we have to "throw away the ladder": "whereof one cannot speak, thereof one must be silent" (ibid., 6.54-7). On his part, Buber opens his *I and Thou* by saying that "to man the world is twofold, in accordance with his twofold attitude" (Buber 1937, 3), and, in the beginning of part two of his book, he tells us that "only silence before the *Thou* (...) leaves the *Thou* free" (ibid., 39). As we've seen above, ineffability is a term used to designate one of the currents in the reading of Wittgenstein; and, according to Santiago Kovadloff, one of Buber's lessons is that true dialogue with what surrounds us maintains its ineffability (Kovadloff 1990, 83).

As has been claimed in part I of this paper, in a reading of the "Lecture on Ethics" as a continuation of the *Tractatus,* the ethical meaning of Wittgenstein's acceptance of wonder is a personal openness to the mystery of the existence of the world. Buber will be seen to share this Wittgensteinian theme of the limits of language but to give it an ethical meaning that underlines the importance of the Other, a topic which is missing, at least explicitly, from Wittgenstein's *Lecture.* So, in this paper's third proposal, it will be briefly sketched how, in Buber's thought, true relation with an Other has wonder in between.

The I-It experience

For Buber – following the citation given above – "[t]he attitude of man is twofold, in accordance with the twofold nature of the primary words which he speaks" (Buber 1937, 3). These primary words are not isolated terms but combined ones. One of these primary words is *I–It*, in which *he* or *she* can take the place of *it*. The other one is *I–You*.[3] Our own existence is, therefore, twofold: the I pronounced in *I-It* is not the same I as pronounced in *I-You*.

When we engage in an *I-It* mode with something or someone, we don't have a relation, but an experience. We are in front of an object with the intention of fully describing it or explaining it, in a way which is related to the use we have for that object. There's an isolation of the *I*, who becomes an individual that positions an *It* in a previously determined system of ideas. The *I-It* mode of engaging the world is full of transitive verbs that demand a clear division between subject and object and aim at predictability, objectivity and control (ibid., 4-6).

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3 In the talk that this paper is based on, I referred to the *I-Thou* relation by saying *I-You,* to make it closer to spoken language, as *Thou* is not a word often used. That choice is retained in the writing of this paper. Putnam's words on this matter are clarifying: "Walter Kaufman rightly pointed out that the German *'Du'* in the title *Ich und Du* is simply the pronoun one uses in talking to friends and family, and that translating it by the now archaic 'thou' already falsifies Buber's thought by making it somehow fake-solemn" (Putnam 2008, 61).

Is this *I-It* mode of engaging the world intrinsically bad and, therefore, totally undesirable? Buber suggests differently: "without *It*, man cannot live. But he who lives with *It* alone is not a man" (ibid., 34). So, the *I-It* mode of acquaintance with the world is not bad in itself; it is only dangerous when it inhibits us from reaching an *I-You* mode of relating with what surrounds us. Putnam stresses that thinking "the I-It relation is always bad" is one of the misunderstandings that an erroneous reading of Buber's work may lead to (Putnam 2008, 62).

Wonder, the I-You relation and education

This is how Buber portrays an example of the passage from an *I-It* situation to an *I-You* situation:

> I consider a tree (...). I can perceive it as movement (...). I can classify it in a species (...). I can (...) recognise it only as an expression of law. (...) I can dissipate it (...) in a number (...). In all this the tree remains my object. (...) It can, however, also come about, (...) that in considering the tree I become bound up in relation to it. The tree is no longer it. I have been seized by the power of exclusiveness (Buber 1937, 7).

So, the *I-You* mode of engaging the world is not only able of including other human beings, but also natural elements. What does this relation consist of? When we say *You*, we are in a relation. Our whole being is directly with the *You* we pronounce. We are not an isolated individual, but a connected person. There is relation lived in the present, a non-hierarchical contemplation, a true encounter. In Buber's words, "[i]f I face a human being as my *Thou* (...), he is not a thing among things (...). [H]e is Thou and fills the heavens (...) and everything else lives in his light" (ibid.: 8). It is important to note, as Schinkel does, that

> this attitude, this relationship, cannot be maintained all the time, but must be re-established and renewed again and again; each time the Other is revealed once more as a Thou (and you are revealed as a different I in relation to that Thou) – a repeated epiphany of what was already known, the same way wonder can make us see the familiar afresh (Schinkel 2018, 40-41).

"All real living is meeting", says Buber in a famous passage from his book (1937, 11). This real living he talks about is our ability to be in relation with a *You*. There is a word that, despite not being said by Buber, distinguishes, indeed, the *I-It* experience from the *I-You* relation, and that word is *wonder*. When we say *It*, we deny wonder, we replace wonder with a full-fledged discursivity, we escape from the mystery of the Other. Buber himself doesn't use the word wonder but

this paper's proposal is that *wonder* is a main differentiating feature between the *I-You relation* and the *I-It experience*.

Although at this point it seems to me somewhat ungrounded to say that there's an equivalence between *wonder* and *I-You relations* – so that's not what is being proposed – I do think we can securely claim that wonder is necessarily *absent* from *I-It experiences,* as they are dominance based, and when there's dominance there's no place for wonder. By contrast, wonder is necessarily present in the formation of *I-You relations* – the use of the word 'epiphany' in the quotation above, is very illustrative of that aspect. The maintenance of an *I-You* relation through time – a possibility clearly suggested by Buber's recurrent use of the word *relation* instead of, for example, mere *encounter* – may diminish wonder but it's safe to say that, at least at the starting point of an *I-You relation,* wonder must be present.

Buber uses the expression 'threshold of speech' (Buber 1937, 6, 101) – which reminds us of Wittgenstein's already quoted 'boundaries of language' – to imply what is at stake when we truly say *You*. We say *You* knowing that wonder is bigger than language. So, the third proposal of this paper is that Martin Buber, whose thought has some intersections with Wittgenstein's philosophy, shares Wittgenstein's interest in the limits of language, but gives them a relational account: a true *I-You* relation, which is exempt from linguistic forms of explicability and power, is inhabited by wonder with the existence of the Other.

Despite the fact that Buber also does not use the word *wonder* in either of his lectures on education published in the volume *Between Man and Man*, the way he states that an individual striving for creativity – "the child of man wants to make things" (Buber 2002, 100) – is an insufficient educational goal is in accordance with this paper's proposal underlining wonder towards the Other:

> We must continually point out that human inwardness is in origin a polyphony (...). One of the leading voices is the instinct of origination. This instinct is therefore bound to be significant for the work of education as well. (...) But (...) the decisive influence is to be ascribed not to the release of an instinct but to the forces which meet the released instinct, namely, the educative forces. (...) There are two forms, indispensable for the building of true human life, to which the originative instinct, left to itself, does not lead and cannot lead: to sharing in an undertaking and to entering into mutuality. An individual achievement and an undertaking are two very different matters. (...) As soon as a man enters effectively into an undertaking, where he discovers and practises a community of work with other men, he ceases to follow the originative instinct alone. (...) What teaches us the saying of

> *Thou* is not the originative instinct but the instinct for communion. (Buber 2004, 102-104)

As suggested in the beginning of this paper, we experience contemplative wonder when something makes us speechless. So, we experience contemplative wonder towards the Other when it is another human being that makes us speechless (in both cases, there's an implicit shared premise that excludes from this concept non-pleasant or non-fruitful ways of being speechless, like shock, horror, humiliation – but, as I've also stated in the beginning of this paper, it is not our present goal to offer a phenomenology of wonder). When Buber, as we've just seen, tells us that 'the originative instinct' is not enough and that to educate is also to nourish 'the instinct for communion', he is stating something which is totally compatible with the reading presented in this paper, i.e., a reading of Buber as an author whose work offers a relational – and therefore ethical – account of wonder.

III. Wonder and educational practice

Brief summary of the three reading proposals

Before proceeding with the task that this third and last part will take us to, let's briefly recap the three proposals made until this point, proposals which have in common a suggested possible reading of a philosophical work.

The first proposal of this paper is that the final part of Wittgenstein's *Tractatus Logico-Philosophicus* can be read as an *acceptance of wonder*, an implicit acknowledgment of the irreducibility of contemplative wonder to linguistic schemes.

The second proposal is that the implicit acceptance of wonder in the *Tractatus* becomes, in the "Lecture on Ethics", explicit and gains an ethical significance. This ethical significance is openness to the mystery of the world, the openness of our individual character to the unsayability of the world when we wonder at how things are.

Finally, in this paper's third proposal, starting from the premise of a similarity between important areas of both Wittgenstein's and Martin Buber's thoughts, we've read Buber's *I and Thou* and understood that an *I-You* relation is inhabited by wonder at the existence of the Other.

Educational practice: questions from Wittgenstein and Buber

Educational practice will be the subject approached now. From Wittgenstein, we bring the ethical importance of the dispositional possibility to wonder at

the way the World is. But how can we respect and stimulate this wonder in the classroom environment? From Buber, we bring the relational possibility of being in wonder at the existence of the Other. But how can we promote *I-You* relations in school? To sum up, how can we teach languages and, at the same time, running 'against the boundaries of language', or finding ourselves at the 'threshold of speech', promote wonder at the World and wonder at the Other? We will look for answers in the work of the philosophers we have discussed.

Teach them astronomy at night – Wittgenstein and the Austrian School Reform Movement

Wittgenstein's writings about education are scattered throughout several of his works and are not central in any of them (Stickney 2017, 44). Nonetheless, as one of the most important philosophers of the 20th century, his thought has also influenced philosophy of education, in a way that has been much studied and analysed (Peters and Stickney 2017, 4). What will be the focus of the next paragraphs is not something bibliographic, but biographic – Wittgenstein was a primary school teacher for six years. This period is somewhat underestimated by Wittgensteinian commentary, claims Beth Savickey (Savickey 2002, 49), who dedicated to it a whole chapter of her book on Wittgenstein. Savickey notices a very interesting coincidence: "Wittgenstein's year of teacher-training (1919–1920) corresponds to the first year of the Austrian School Reform Movement and his last year of teaching (1926) corresponds to the last year of that movement" (ibid., 50).

So, as to the question of how to promote *Wittgensteinian* wonder at the world in the classroom environment, we will turn to the Austrian School Reform Movement that Wittgenstein adhered to as the context for finding answers. Savickey introduces the Movement by writing that

> after the First World War, and the collapse of the Austro-Hungarian Monarchy, the Austrian Republic adopted new goals and methods of educational instruction. Led by Otto Glöckel, Austria's Secretary of Education, there developed in Austria a new school system which replaced rote learning by *'Arbeitsschule'* – learning by doing. (...) The Austrian School Reform Movement grew out of a variety of different social, psychological, political and educational theories, which were adopted and implemented across the national school system. In other words, the aims, methods and curricula of the new school system were based on existing theories and ideas. (Savickey 2002, 50-51)

The main features of this Movement are: the confidence in children's faculty of logical thinking; the underlining of the joy of learning and the relation between eagerness to learn and investigation, in which knowledge is conquered instead of given; the centrality of active learning and the role of the teacher as a guide to children's self-activity; a transdisciplinary approach in which the topic was the anchor and there was no strict division between subject matters; and – a really important issue when thinking about wonder – the rooting of education in the environment, by which "teachers gathered material from the child's environment" and organised activities such as "drawing, music, physical culture (games, dance and sports) and school walks" (ibid., 51-52).

According to Savickey, Wittgenstein not only worked for six years having this Movement's guidelines as an institutional set – he believed in them and adhered to them enthusiastically (ibid., 53, 55). So, when we ask how to promote wonder with the world in the classroom, maybe part of the answer is to blur the lines between the inside of the classroom and the outside of the classroom, to do things as plain and simple as Wittgenstein did, when he "taught them astronomy at night" (ibid., 54).

The teacher as a whole being – Martin Buber's lectures on education

The question we bring from Martin Buber on part II – how to promote, in a classroom environment, *I-You* relations based on wonder with the existence of the *Other* – faces the same problem as the question we have just tried to tackle: the teacher cannot directly cause that wonder. What is at stake in both these questions seems to be not *how to cause* wonder but *how to create the best conditions for the appearance of* wonder. With that in mind, following the same methodology that we used with the Wittgensteinian question, contributions to this question's answer will be looked for in the educational thought of Martin Buber, expressed in two conference addresses: the already cited "Education – An Address to the Third International Educational Conference", Heidelberg, August 1925 (Buber 2004, 98-122); and "The Education of Character" – An Address to the National Conference of Palestinian Teachers, Tel-Aviv, 1939 (Buber 2004, 123-139).

It has been seen at the end of part II that Buber views the origination instinct as important but insufficient:

> Action leading to an individual achievement is a 'one-sided' event. There is a force within the person, which goes out, impresses itself on the material, and the achievement arises objectively: the movement is over, it has run in one direction from the heart's dream into the world, and its course is finished. (...) Only if someone grasps his hand (...) as a fellow-creature

> lost in the world, to be his comrade or friend or lover beyond the arts, does he have an awareness and a share of mutuality. An education based only on the training of the instinct of origination would prepare a new human solitariness which would be the most painful of all. (...) But (...) youthful spontaneity must not be suppressed but must be allowed to give what it can. (Buber 2004, 103-104)

The teacher, in Buber's account, cannot 'compel' (Buber 2004, 104), as traditional education wants him to do, but should also not abstain from intervening, in a subtle manner: "This almost imperceptible, most delicate approach, the raising of a finger, perhaps, or a questioning glance, is the other half of what happens in education" (Buber 2004, 105). In this role, the teacher has a mediating function, in which what "is at stake", according to Schinkel, is "the possibility of true human community (...) and of hope for a truly human form of living-together, where we are free because we take responsibility for the world and for ourselves" (Schinkel 2019, 6). "What we term education, conscious and willed, means *a selection by man of the effective world*: it means to give decisive effective power to a selection of the world which is concentrated and manifested in the educator", Buber tells us (Buber 2004, 105). And the world that is mediated by the teacher is not only the world of things but also of 'relationships'; "at the opposite pole from compulsion there stands not freedom but communion" (ibid., 107-108). Education must, therefore, be considered a dialogical relation: "A relation between persons that is characterized in more or less degree by the element of inclusion may be termed a dialogical relation" (ibid., 115). But it is a special kind of dialogical relation:

> however intense the mutuality of giving and taking with which he is bound to his pupil, inclusion cannot be mutual in this case. He experiences the pupil's being educated, but the pupil cannot experience the educating of the educator. (...) The educator who practises the experience of the other side and stands firm in it, experiences two things together, first that he is limited by otherness, and second that he receives grace by being bound to the other. (ibid., 119)

So, we already have a few hints at how to promote *I-You* relations: the first one is to consider individual striving for creativity as something not to be cut off, but also not to be considered an end in itself; the second one is that teachers consider themselves not only as mediating relations between children or between children and the world, but also as being a part of that relation, where they can lead by example in attitudes such as comprehension and respect.

This leading by example and not by direct teaching is suggested by Buber in the second of the above cited lectures, when it comes, precisely, to 'the education of character'. Explaining theoretically what is right and wrong has doubtful results (Buber 2004, 124). "Only in his whole being, in all his spontaneity can the educator truly affect the whole being of his pupil. For educating characters you (...) need a man who is wholly alive and able to communicate himself directly to his fellow beings" (ibid., 125). That means that the teacher must have "*consciousness* that he represents in the eyes of the growing person a certain selection of what is, the selection of what is 'right', of what *should* be". By acting this way, a teacher gains the student's confidence, and the student feels free to ask and rely on him (ibid., 126).

So, is this the way we guarantee our students will enter in *I-You* relations with one another? No – Buber starts his address by suggesting that it is easier to teach maths than to educate a character. What we *do* learn by this is that the only way we can hope to achieve something in this relational education is if we remember that the teacher is also in relation and that, when they enter a classroom, while they may have their head full of teaching strategies, they must not forget the more simple and complicated one: willingness to be an *I* in relation to a *You,* willingness to let students become *You*.

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7 From Curiosity, to Wonder, to Creativity: A Cognitive Developmental Psychology Perspective

Marina Bazhydai and Gert Westermann

Introduction

Playfulness, open-mindedness, thinking 'outside the box' describe a desirable and highly regarded state that children naturally engage in and most adults desperately crave. Across all aspects of modern life, we are constantly bombarded by pervasive powerful messages encouraging us to inquire and explore, discover and innovate. This desire is mirrored in public policies, education practices and business models, which emphasise the need for curiosity, innovation and creativity over the need for knowledge reproduction, imitation, and conformity (Cachia et al. 2010; Dede 2010; King and Rogers 2014; Trilling and Fadel 2009; OECD 2018; UNESCO International Bureau of Education 2014).

Among several positively valenced psychological terms often used interchangeably, curiosity, wonder and creativity hold a special place in the study of human development as core mechanisms behind knowledge acquisition and knowledge transformation. As such, curiosity drives information seeking, wonder expands and enriches the quest for knowledge to new dimensions, and creativity enables transformation of existing knowledge and generation of new, original knowledge about the world. These capacities are already present, albeit in rudimentary forms, and reliably observable in early childhood. However, the cognitive mechanisms underlying the processes of curiosity, wonder and creativity, the links between them, and their developmental trajectories are currently poorly understood.

Scholarly inquiries into curiosity, wonder and creativity abound in the fields of philosophy and education (Carlson 2008; Carson 2011; Engel 2015; Schinkel 2017; Starko 2013; Vasalou 2012, 2015; Verhoeven 1972). However, psychological research into exact links between these concepts is inconclusive,

owing to vague conceptual definitions, lack of robust measures, and disregard of dynamics of developmental change. The goal of the present chapter is to review the existing psychological accounts of curiosity, wonder and creativity in early development and explore the conceptual links, unifying theoretical approaches and methodological considerations from a cognitive developmental perspective.

Cognitive developmental science aims to uncover the underlying cognitive mechanisms enabling psychological phenomena and explain their changes with development. From this perspective, methods such as brain scanning (EEG, fNIRS, fMRI), physiological response measuring (e.g., heart rate and skin conductance), facial electromyography (EMG), eye-tracking and pupil dilation response measuring, as well as monitoring explicit, reliably observable behaviour, may be powerful tools for understanding curiosity, wonder and creativity. The field is ripe for applying such methods to help theoretically and conceptually delineate the unique features of each of these psychological phenomena, enable development of age-appropriate measures for their rigorous experimental study, and investigate the links between them and their co-development.

In the present chapter, we review the state of the cognitive developmental research on these topics, with a special focus on successful methodological approaches, as well as challenges for the experimental study of their cognitive underpinnings. The chapter comprises four main sections: 1) Curiosity, where we focus on children's active exploration, information seeking, and question asking; 2) Wonder, where we emphasise affective response, reflection, and pursuit of further knowledge; 3) Creativity, where we discuss capacities such as generating ideas, original transformations, and novel combinations; and 4) Relationship between curiosity, wonder and creativity, where we propose that these links are complex and dynamic; concluding with suggestions for future research to understand their interrelations as they unfold developmentally.

Curiosity

Curiosity is broadly defined as an intrinsically motivated exploration with an information-seeking goal (Bazhydai, Twomey, and Westermann, 2020; Kidd and Hayden 2015). Crucially, in a curiosity-driven process, information is being sought for its own sake and not as a means of obtaining food or another kind of essentially non-epistemic reward. Curiosity is often described in terms of two distinct dimensions: perceptual vs epistemic and specific vs diversive (Berlyne 1950). Thus, a range of behaviours can be

called curiosity, from momentarily picking up a random book from the library book shelf to reading an encyclopaedia chapter, and from locating a particular fact about the topic of interest to seeking an escape from boredom by browsing an online news website. In the past decades, cognitive scientists, employing a range of approaches from the fields of neuroscience, robotics and computational modelling, have started to develop better understanding of the cognitive origins of curiosity and its cognitive underpinnings in early childhood.

Several theoretical perspectives have been proposed to explain how curiosity arises. Among those are drive, incongruency, information gap and learning progress approaches (see Bazhydai et al., 2020, for a detailed review). Behaviourist approaches saw curiosity among other basic drives motivated by anticipated reward, similar to food and comfort seeking. Infants' attention in response to new and interesting stimuli was here explained in terms of mere orienting reflexes. While identifying the lower level components underlying curiosity-driven behaviour, largely from work on animal models, these approaches neglected more complex and cognitively rich mechanisms. In the wake of the cognitive revolution in psychological science in the 1950s and 60s, curiosity received a fresh and more sophisticated look. A newly proposed way to explain the preference for novelty, surprise and complexity was to adopt an *incongruency detection* perspective. This approach postulates that upon detecting a mismatch between the existing state of knowledge and incoming information, a process of curiosity allows one to update one's existing knowledge. That is, a person is driven to achieve "a feeling of coherence and of necessity, the satisfaction of arriving at a system, which is both complete in itself and indefinitely extensible" (Piaget 1969, 139). Relatedly, the *information gap theory* (Loewenstein 1994) proposes that curiosity arises when an individual encounters a gap in their knowledge and is then motivated to fill it with new and relevant information. Here, curiosity cannot emerge if the level of prior knowledge is too low or too high in relation to the novel information, while an intermediate level of information familiarity and complexity is optimal for arousing curiosity (Kinney and Kagan 1976; Kidd, Piantadosi, and Aslin 2012, 2014). Finally, *learning progress theories* presume that curiosity's goal is to maximise information acquisition by minimising uncertainty (Oudeyer, Gottlieb, and Lopes 2016; Twomey and Westermann 2018). Here, learning itself is an intrinsically motivating process, which in turn fuels a just as intrinsically motivated curiosity process, thus creating a positive, rewarding loop for driving knowledge acquisition.

This variety of theoretical approaches to curiosity has been instrumental in scientists' ability to formulate key questions to better understand how curiosity works. Whereas in Berlyne's classification, information novelty and complexity serve as determinants of curiosity, the information gap theory

relies on reflective awareness of one's current knowledge in order to detect a gap, and the learning progress approaches place the greatest importance on the emerging, self-driven optimisation of information intake to enable effective learning. Most contemporary approaches agree that the existing knowledge state and the ability to obtain new information dynamically interact to give rise to curiosity.

Developmental psychologists often describe curiosity in conjunction with infants' exploratory activities. The image of the busy infant actively exploring its environment, approaching, touching, banging, mouthing and throwing toys, putting blocks on top of each other, constantly changing its position, crawling around, and engaging its caregivers in a rather demanding manner underpins this confluence of curiosity as a cognitive mechanism and curiosity as an exploratory behaviour. According to Piaget (1945), such active exploration enables infants to construct knowledge of the existing world.[1] Infants explore through visual scanning of their environment (as detected by eye movements tracking), object manipulation (grasping, throwing and mouthing them), preferentially approaching something that captured their interest (e.g., crawling towards a new toy), as well as querying others for information with all communicative tools available to them (Bazhydai, Westermann, and Parise, 2020; Begus and Southgate, 2018).

Infants' motivation to know how something works is sometimes proposed to explain the very process of curiosity-driven learning. A widely used metaphor presents young children as "little scientists", keen on discovering the world through optimised and adaptively rational learning mechanisms akin to the scientific process of knowledge discovery by trial and error. Recent research in cognitive developmental psychology highlights sophisticated information seeking strategies guiding infants' exploratory behaviours, such as active generation and testing of hypotheses about the world, attempts to understand the causal mechanisms of encountered events, and heightened interest in objects that violated their expectations (Bonawitz, van Schijndel, Friel, and Schulz 2012; Gopnik, Meltzoff, and Kuhl 1999). For example, infants who saw a surprising event, such as an object passing through a solid wall and emerging on the other side intact, looked at it longer and crawled toward such an object more often than with an event that was just novel (Sim and Xu 2017; Stahl and Feigenson 2017, 2019). These rudimentary behaviours can be interpreted at different levels. Either infants are merely interested in something unusual and

1 Furthermore, Piaget (1945) highlighted that it is through 'playful interactions' with the environment that the infant acquires knowledge, drawing a subtle link between learning what is known and creating something new through play – the argument we want to develop further in this paper.

therefore surprising, or, at a higher level, they are interested in resolving the uncertainty caused by the unusual event by seeking disambiguating or clarifying information about it. Studies with older children provided more context for the latter interpretation. For example, when the evidence presented to children was confounded (such as when two different explanations were possible for what makes the funny noise in an exciting new toy), children explored the toy in a way that would allow them to understand the precise causal mechanism (Schulz and Bonawitz 2007). When information taught to them was insufficient (i.e., the teacher committed the 'sin of omission' by not relating all relevant information), primary school children's exploration was strategic to compensate for the missing knowledge (Gweon et al. 2014).

Curiosity-driven exploration in early childhood is evident in both independent and social processes. That is, encountering the need for information (either upon seeing a surprising event or when lacking information which they cannot obtain by themselves) may trigger infants' turning to others for help. Social partners are potent sources of information for young children, and the ability to interrogate them by asking questions and posing information-seeking requests develops in the first years of life (Begus and Southgate 2018; Ronfard et al. 2018; Southgate, Van Maanen, and Csibra 2007). Enabling such epistemic curiosity in social learning contexts, infants' early nonverbal communicative skills such as babbling, social referencing and pointing precede verbal question asking. Infants use them actively and selectively, paying attention to epistemic cues that available social partners exhibit (Harris and Lane 2014; Poulin-Dubouis and Brosseau-Liard 2016). They also strategically request pertinent information about the immediate environment from someone who can be regarded as knowledgeable about it as opposed to an ignorant person, and do so only when information (e.g., an unfamiliar object name or a hidden object location) was being asked for but not available to them (Bazhydai et al. 2020; Begus and Southgate 2012; Begus, Gliga, and Southgate 2016; Goupil, Romand-Monnier, and Kouider 2016; Kovács et al. 2014; Vaish, Demir, and Baldwin 2011). Thus, infants engage in curiosity-driven knowledge acquisition before they are even able to speak.

With development, deliberate question asking gives rise to more precise, sophisticated, and complex processes (Choinard 2007; see Ronfard et al. 2018 for a review). To seek knowledge from others, disambiguate unclear facts and confront counter-intuitive testimony, children pose 'why' questions, demand clarifying answers, solicit additional evidence, and question the reliability of information, actively engaging in critical thinking processes powered by intrinsic motivation (Frazier, Gelman, and Wellman 2009; Tizard and Hughes 1984). However, while social contexts may be conducive to the satisfaction of

curiosity – if children seek information from social partners when in need – sometimes overly normative situations may inhibit curiosity. For example, when provided with a counter-intuitive testimony by an otherwise trustworthy adult, preschoolers endorsed the adult's judgment without scepticism or attempts to engage in independent verification even when given opportunity to do so (Ronfard, Chen, and Harris 2018; Ronfard et al. 2019). And when taught in a directive, explicitly pedagogical manner, children limited their further spontaneous exploration as if treating received evidence as exhaustive and normative (Bonawitz et al. 2011).

While actively engaging in strategic information seeking, infants are also known to constantly explore seemingly without an immediate perceivable goal. Given this sometimes aimless search for information, which is a hallmark of the diversive-perceptual kind of curiosity in contrast to the specific-epistemic kind (Berlyne 1950), infants' attention has been compared to a lantern, in comparison to adults' more focused spotlight (Gopnik 2009). Formalisation of infants' behavioural exploration has led to the development of artificial intelligence models in robotics and computational modelling (Gottlieb and Oudeyer 2018; Oudeyer 2017). The main idea behind these approaches is that infants' exploration (active information sampling, in jargon terms) is not random but rather systematic and selective, thus enabling optimal and efficient learning (Smith et al. 2018). "Infants are curious learners who drive their own cognitive development by imposing structure on their learning environment as they explore", in the words of Twomey and Westermann (2018) who developed a neurocomputational model of infants' exploration as they learn object categories. This model, operating on the principle of the in-the-moment, stepwise maximisation of learning opportunities, emphasised the importance of dynamic interaction between the properties of the available information, the environment, and the learner's current internal state. Given the freedom to select an object to learn from at each iterative step of the process, the model chose stimuli that took into account these interactions in order to optimise learning. In doing so, the model generated exploratory sequences of overall intermediate complexity, echoing studies with infants as young as seven months old showing that infants' visual attention to sequences of events that are either too simple (too familiar) or too complex (overly unpredictable and novel) is diminished while attention to events of intermediate complexity is enhanced. This preference for intermediate complexity (called the "Goldilocks Effect" of curiosity-driven exploration), supports the idea that infants implicitly seek information that they can reliably absorb and that is neither too boring nor too cognitively taxing (Kidd, Piantadosi, and Aslin 2012). An active and selective role played by a child in the learning process via discovery is key

to "an increase in intellectual potency" understood as strategic deployment of cognitive resources (Bruner 1961).

The variety of approaches to the study of curiosity feature in turn in the variety of methods that may be successfully employed to uncover its mechanisms in early childhood. Viable measures include detection of visual and manual exploration, neural signals, physiological responses, and explicit behavioural choices. For example, the peak of the pupil dilation measured with eye-tracking equipment can be used to examine when infants are curious about what they are seeing. This measure has been successfully used with adults, correlating with self-reported curiosity (Kang et al. 2009), and with infants when they viewed sequences of images that were first scrambled and then unscrambled (Ackermann, Hepach, and Mani 2020). The amount of looking (allocation of attention) can be captured with fine-grained eye-tracking of infants' visual exploration of complex visual scenes, which has been shown in adults to correlate with their individual curiosity trait (Baranes, Oudeyer, and Gottlieb 2015; Risko et al. 2012). Similarly, suspending attention (looking away) may be a measure of curiosity's transience – determined by how rapidly curiosity subsides when a curiosity-inducing stimulus is removed. Physiological correlates of curiosity have been proposed as a decreased (decelerating) heart rate and increased skin conductance response (AlZoubi, D'Mello, and Calvo 2012; Berlyne, and Lewis 1963; Spinks and Siddle 1985), though these have to be carefully distinguished from general positive emotional arousal (Langsdorf et al. 1983; Hutt 1966; Hughes and Hutt 1979; Provost and Gouin-Dicarie 1979) and attention (de Barbaro, Clackson, and Wass 2017; Libby, Lacey, and Lacey 1973). Another implicit behaviour – facial displays of interest – can be measured in infants by coding their perplexed, puzzled, quizzical facial expressions (e.g., eyes widened and mouth slightly open, but with no smile) (Feinman et al. 1992; Hornik and Gunnar 1988; Reeve and Nix 1997). Finally, studying neural signatures is an exciting new avenue in infant curiosity research, with recent research associating theta band waves as curiosity's potential biomarker (Begus, Gliga, and Southgate 2016; Köster, Langeloh, and Hoehl 2019). Systematic and multi-faceted investigation into the cognitive correlates of curiosity is key to uncovering its mechanisms.

In sum, curiosity drives knowledge acquisition, with its mechanisms actively enabled from the first months of an infant's life and behavioural manifestations becoming more complex and sophisticated with the development of the child's cognitive capacities and communicative repertoire. Curiosity leads to the pursuit of knowledge, either specific to answer a pertinent question, or broad, to satisfy one's drive for exploring and generating information, and can manifest itself in various ways which are possible to capture using behavioural,

physiological and neural measures. What curiosity alone is not able to explain is the cognitive-affective state underlying the need to know commonly referred to as *wonder*. The next section will cover the variety of theoretical and empirical approaches specifically concerned with this state.

Wonder

Having reached the information-seeking goal of their curiosity-driven exploration, children may experience the state of wonder, understood as an emotionally laden, rewarding mental state of pondering upon their discoveries with astonishment and excitement about embarking on further deeper enquiry into the phenomenon. While 'burning with curiosity' made Alice follow the white rabbit in the first place, as her adventures unfold, she finds them 'curiouser and curiouser'.[2] In addressing how curiosity and wonder differ from each other, we emphasise affective response, reflection on obtained information, and seeking deeper and broader knowledge.

Scholars in philosophy and education disciplines have long debated about the nature of wonder (Schinkel 2020; Gallagher et al. 2015). Wonder has been defined as an astonishing, incomprehensible surprise, transcending the existing structures (Fingerhut and Prinz 2018), a combination of cognitive perplexity and intense perceptual engagement (Weger and Wagemann 2018), which is intricately linked to epistemic cognition. Two broad types of wonder have been proposed (Carlsen and Sandelands 2015; Parsons 1969; Schinkel 2017; Washington 2018): an active one (more akin to curiosity, 'wondering about') and the passive one, also called deep or contemplative wonder (more akin to awe, 'wondering at'), which "involves not knowing of a different kind – not a not-yet-knowing, but a fundamental, irresolvable not-knowing" (Schinkel 2017, 546). In this way, curiosity is a quest for knowledge that is already out there, while wonder is a quest for knowledge that may never be attainable. It is this propensity for posing essentially rhetorical, 'big questions' that may have led Socrates to famously propose that wisdom begins in wonder. Unlike curiosity, wonder can never be satisfied fully; it is not terminal as it would not disappear once relevant or missing information about the phenomenon has been discovered (Sinclair and Watson 2001). These conceptual distinctions date back to the Ancient Greek dichotomy: wonder is viewed as essentially a quest for truth, achieved by embracing holistic perception and remaining open to

2 A set of cliché quotes from Alice in Wonderland is a must in a conversation about curiosity, wonder and creativity.

uncertainty, a valuable experience in itself regardless of the logical outcomes (Plato), while curiosity is a quest for information in order to fill epistemic gaps, reduce uncertainty, and deconstruct the phenomenon into parts in a rational, optimal way (Aristotle) (Schinkel 2017; Vasalou 2015). Centuries later, at the dawn of the cognitive revolution in psychological science, Bruner (1961) described a similar dichotomy in more contemporary terms: a "learning as a task of discovering" (curiosity) in comparison to "learning about" as a sought-after disposition which facilitates a deeper quest, accompanied by a sense of agency and mastery orientation (wonder).

While the contemporary field of education has been actively emphasising the benefits of wonder for learning (Booker and Batt 2016; Jacobs and Crowley 2007; Edeiken 1992; Egan 2014; Opdal 2001) and the philosophical scholarship investigating wonder is thriving, the cognitive developmental research on this mental state is in its infancy. Below we review major advances in conceptualising wonder – from an epistemic emotions view and a developmental perspective – and discuss the differences between wonder and related concepts such as curiosity and awe in light of these approaches.

Curiosity and similar states such as interest, surprise, wonder, astonishment, awe, doubt, uncertainty, boredom, feeling of knowing, fear of the unknown, to name a few, have been collectively referred to as 'epistemic emotions' (Carruthers 2017; Scheffler 1991; Vogl et al. 2019). According to these theories, affective and cognitive processes work in tandem, with epistemic emotions enriching purely cognitive activities related to the pursuit of knowledge and learning, such as information-seeking, explanation-seeking, belief formation and revision (Frijda, Manstead, and Bem 2000; Izard 1992). While other emotions, such as happiness, anger or hatred may also affect epistemic processes under certain conditions, what makes epistemic emotions unique is their specialisation in characterising (either supporting or inhibiting) epistemic goals. Despite substantial advances in identifying a range of affective mental states that influence processes related to knowledge acquisition and revision, the nature of the relationships between some of the core emotions has not yet been clearly delineated. For instance, wonder has been included in composite measures of awe (Saroglou, Buxant, and Tilquin 2008; Shiota, Keltner, and Mossman 2007) but often used interchangeably with curiosity (e.g., "I am curious/wonder about"; Bijou 1998; Valdesolo, Shtulman, and Baron 2017) and surprise as a response to the unexpected (Frijda 1986). The causal links between concepts are also debated: according to one view, curiosity may arise from the feelings of awe or wonder and motivate exploration in order to resolve uncertainty (Frijda 1986; Izard 1977); on another view, wonder arises when curiosity-driven pursuits reach their limits (upon obtaining all perti-

nent information), by making one probe deeper (Opdal 2001). Despite these differences, both curiosity and wonder are agreed to be intrinsically rewarding emotional states promoting learning in the form of active explorative activities and constructive knowledge acquisition.

A classical theory providing a valuable insight into the distinction between curiosity and wonder is the Piagetian theory of cognition (Piaget 1969), proposing that at first novel information is processed in order to be incorporated into the existing knowledge base through a process called assimilation. If successful, new information forms part of the ever-expanding knowledge repository in the mind. However, if the assimilation process fails, people either abandon the attempts to learn, or this novel information instead undergoes the process of accommodation – creating new knowledge structures to adopt the incoming information. In other words, assimilation incorporates new information into pre-existing epistemic schemas, while accommodation changes the pre-existing schemas to absorb new information. This latter property of the accommodation process is what links it to wonder as a qualitative and quantitative expansion of curiosity-driven information acquisition.

A combination of both the epistemic emotions view and the accommodation process of cognition lays a foundation for empirical study of the state of wonder and its cognitive origins. Schinkel (2018) urges psychologists (in addition to educators and philosophers) to dedicate more attention to wonder, especially as distinguished from curiosity and awe. We further propose that study of wonder would benefit from a cognitive development perspective, because understanding of early manifestations of any psychological phenomena may help explain complex cognitive mechanisms underlying these processes in adults.

Despite a well-developed theoretical base, empirical developmental research on wonder is lacking. One argument limiting research on wonder from a cognitive developmental perspective is that as a complex, reflective state requiring sophisticated metacognitive abilities, wonder may not be readily accessible to young children. Studies of metacognition generally conclude that children's ability to self-monitor their own affective and cognitive processing is not present until the preschool years (Sodian et al. 2012; Sobel and Letourneau 2018). Children's use of verbs related to epistemic states, such as 'know', 'guess', and 'remember' starts at around the age of three (Johnson and Wellman 1980), and children's explicit understanding of complex emotions not until the primary school years (Russell and Paris 1994). Counter to this view, rudimentary metacognitive processes have been shown as accessible to children even before they mastered language (Gliga and Southgate 2016; Goupil and Kouider 2019). Various proxies for implicit measurement of infants' awareness of their meta-

cognitive states have been used, such as conceptualising a state of epistemic uncertainty as a delay in making a choice or persistence in attempts to find reliable information. For example, preverbal infants, using social looks and pointing as communicative tools, are able to strategically request information from other people when they are aware of their ignorance; e.g., when they don't know where the toy was hidden but know that their parents can provide this information (Goupil et al, 2016) or when they don't know the label to a novel object but know who can provide it (Bazhydai et al, 2020). If we accept that wonder as a unique experiential state is indeed accessible to young children and even preverbal infants, just as curiosity or uncertainty which have been actively studied in this population, similar implicit measures can be employed to capture its cognitive origins.

What does wonder look like? A child experiencing wonder may be the one whose eyes are sparkling with excitement and amazement, one that pauses to think about the encountered phenomenon, one that persists in discovering more about the object that elicited wonder, or one that is not satisfied with the available answers. As we cannot rely on asking children what they think or feel, the use of objective rather than self-report measures becomes instrumental. Wonder may manifest itself neurally, physiologically and behaviourally in several ways. For example, we may record and analyse the overt observable behaviour, such as the kinds of questions that children may ask in wonder, as differentiated from other similar cognitive-affective states such as curiosity or awe. Such fine-grained behavioural analyses would allow disentangling the very conceptual uniqueness of wonder. Similarly, we may attempt to uncover the neural underpinnings of wonder by using techniques such as EEG or NIRS, or physiological signatures such as heart rate or skin conductance response, which, when compared with findings on other related states may pinpoint the exact biomarkers of wonder.

To develop such measures specifically, we need to adopt a working operational definition, for example one like this: an intense, emotionally uplifting experience whereby the person becomes aware of an expanded field of possibility for thought or action and engages in exploring this field (after Glăveanu 2017, 2). This definition is two-fold, invoking several specific measures as plausible candidates. For example, the intensity of an emotional state can be detected through implicit measures of physiological arousal (heart rate and skin conductance response), facial expressions via EMG or pupil dilation response. These measures may allow us to distinguish wonder as an intense, expansive experience following astonishing events (both external and internal) from curiosity as less emotional and more iterative, rational information acquisition. That is, a wonder response should extend beyond preferentially

attending to, approaching and exploring the unexpected events (Sim and Xu 2017; Stahl and Feigenson 2017, 2019).

The second aspect of wonder according to the adopted operational definition – awareness of expanded possibilities and their passionate exploration – can be assessed both quantitatively and qualitatively. Children's desire for more knowledge may manifest itself in repeated searching for information, lack of satisfaction with immediately available evidence, seeking corroborative evidence, and returning to the topic that sparked their wonder even when all explanations have been received. Aimed at explanatory expansion upon witnessing anomalous or ambiguous facts, this 'wondering about' (Carlsen and Sandelands 2014) may prompt children to engage in the so-called 'passages of intellectual search' (Tizard and Hughes 1984) – a persistent stream of questions and explanations offered by children themselves as they strive to arrive at the truth about the phenomena of interest, above and beyond the routine 'why' questions (Chouinard, Harris, and Moratsos 2007; Frazier, Gelman, and Wellman 2009; Legare 2012; Ronfard et al. 2018). This may also manifest itself in the number of comments and emotional content in such remarks, connecting the topic of the wonder-inducing phenomenon to personal experiences, and posing rhetorical questions.[3] In preverbal infants, wonder can be measured as information seeking (e.g., through pointing or approaching objects) following reliable and timely attainment of key missing information (e.g., a novel label or demonstration of a toy's function). That is, upon satisfying the need for information through curiosity, wonder is likely to keep infants inquiring about the same object or event leaving them unsatisfied with the answers. The length of time dedicated to asking such questions and further exploration may serve as a proxy for the measure of wonder.

While given a lot of attention in philosophy and education, wonder remains an undeveloped psychological concept with its position in relation to similar terms unclear. To the best of our knowledge, no empirical work in cognitive development has investigated wonder as such. This may be due to young children's underdeveloped emotion and metacognitive skills and methodological challenges to detect the experience of wonder, which is among the "precious but elusive psychological states that are difficult to research experimentally" (Weger and Wagermann 2018). The study of wonder conceived as an epistemic emotion and a cognitive accommodation process is a promising avenue for

3 As an educationally minded side note, the beneficial role of the adults engaged in such passages is that in addition to resolving misunderstandings and presenting counterinformation if needed, they help children clarify and extend their own ideas and explanations. By questioning their ideas, adults facilitate the development of children's independent reasoning and intellectual growth.

future research, in combination with a range of cutting-edge approaches to study complex cognition in early childhood.

To reiterate, wonder, and specifically its active, inquisitive type, just as curiosity, enables knowledge acquisition, but takes this process to a different level, a step forward towards knowledge transformation. In the range of 'playful interactions' with the environment (Piaget 1945), wonder underlies the desire to go further, deeper and broader than curiosity, the latter being transient and inherently terminal. In a quote brought up earlier in this chapter, Piaget (1969, 139) mentions that information acquisition allows the child to arrive at a state of mind that is both irreducible, in that the uncertainty has been resolved, but also 'indefinitely extensible'. This added-value property, though not called wonder by Piaget explicitly, may refer to probing the field of knowledge further, allowing for multiple perspectives as a pathway to creative knowledge transformation (see Glăveanu 2017 for a proposed relationship between wonder and creativity).

Creativity

> *Sometimes I've believed as many as six impossible things before breakfast.*
>
> *"I see nobody on the road," said Alice.*
> *"I only wish I had such eyes," the King remarked in a fretful tone.*
> *"To be able to see Nobody! And at the distance too!*
> *Why, it's as much as I can do to see real people, by this light!"*
>
> Lewis Carroll, *Alice in Wonderland*

From a cognitive perspective, creativity includes a set of mental processes (rather than a particular personality or genetic predisposition) which manifest themselves in overt behavioural choices, such as coming up with multiple ideas (divergent thinking), forming unusual associations (associative thinking), combining elements based on such remote, non-obvious associations (combinatory thinking), and transforming the existing structures in original ways (transformative thinking) (Guilford 1968; Finke, Ward, and Smith 1992; Mednick 1962; Rhodes 1961; Simonton 2010). Tolerance to ambiguity, flexible thinking, plasticity of mental structures, and openness to experience enable these processes. In contrast, functional fixedness, reliance on heuristics, context rigidity, hyper-precise prior probabilities as inability to update beliefs based on new incoming information, and general avoidance of new experi-

ences are detrimental to creativity. Creativity thus can be conceptualised as a cognitive process leading to original modification of existing information and generation of new knowledge. We focus here on three core cognitive facets of creativity: idea generation or divergent thinking, novel combination and original transformation.

Creativity manifestations in early childhood are difficult to pinpoint. One difficulty is lack of developmentally appropriate measures applicable to the very young population. Even with adults, measures of creativity lack consistency and vary greatly with the conceptual approach chosen by the researchers (Baptiste 2019; Said-Metwaly, Van den Noortgate, and Kyndt 2017). A second challenge comes from adherence to the argument that children simply do not exhibit creativity in its true, eminent, genius-type sense (Feldhusen 2002; Weisberg 1999), also called the 'Big C' (Kaufman and Beghetto 2009). This argument is dismissed by adopting a perspective of the so-called 'little c' creativity rooted in everyday playful imagination, undoubtedly accessible to young children (Amabile 2012; Bateson 1999; Craft 2001; Russ 2014). Accepting the premise that young children and even infants do not lack sufficient cognitive complexity to exhibit rudimentary creative behaviours (Glăveanu 2011; Engel 1993; Jalongo and Hirsch 2012), here we review how creativity manifests itself and how it can be measured in early childhood in order to better understand how these cognitive capacities develop.[4] The literature on children's creative *process* (as opposed to artistic outputs or other creative products; Rhodes 1961) is typically represented with several related but distinct strands: object play, imaginative play and tool innovation. We review how the facets of idea generation, combination and transformation are present in each of these strands and suggest ways to study these in young children.

Just as children actively seek information in curiosity-driven exploration, they actively engage in creative expression and experimentation with objects. While exploration and play are often discussed interchangeably in child development literature (Power 1999; Wohlwill 2018), the two are distinct. It has been suggested that children's play with objects is an early manifestation of creativity as only during play (but not exploration or other rational use of objects, such as construction) children create novel ways of using objects (Pellegrini and Hou 2011; Pellegrini 2013). Pointing to their unique role in cognition, exploration and play have been differentially linked to physiological arousal levels (Hutt 1966): exploration correlated with elevated heart rate, while play with

4 In the words of Vygotsky: "One of the most important questions of child psychology and pedagogy is the question about creativity in children, its development and its significance for the general development of the child." (Vygotsky 1930/1967, cited in Smolucha 1992, 51).

lower heart rate. During object play, children go beyond the systematic acquisition of information afforded by the object (e.g., learning that it rotates or plays music when a button is pressed, etc.) and using the object properly (e.g., using a block to build a tower), to inventing novel ways to use the object (e.g., using unrelated, random objects to build a tower). Hence, they exhibit freedom from constraints of what is known and find creative opportunities where none existed. Both infants' and adults' playfulness have been shown to serve as a precursor to later creative outcomes (Howard-Jones, Taylor, and Sutton 2002; Lieberman 2014; Sutton-Smith 1967), and an evolutionary perspective highlighted the role of object play in cultural innovation (Riede et al. 2018).

Developing as early as eighteen months (Skolnick and Bloom 2006), a more cognitively complex process – pretend or imaginary play – has also been conceptualised as a manifestation of creative processes (Russ and Fiorelli 2010; Russ and Wallace 2013; Vygotsky [1930] 1967, [1990] 2004; Weisberg 2014). Imaginary play, like object play, is inventing novel ways of using an object, but here, it involves substitutions of functions of objects and creating new meaning (e.g., pretend that it can fly). During imaginative play, the child demonstrates remarkable tolerance to uncertainty, "not bothered by inconsistencies, departures from convention, nonliteralness (...) which often results in unusual and appealing juxtapositions and associations" (Gardner 1993, 228). This openness to new experiences and actively creating such experiences is possible due to a heightened alertness to opportunity – ability to notice relevance of available information (objects, people, situations) for potentially including it into the pretend play space. Inspired by this child-like capacity, Torrance (1988) trained adults who have performed poorly on standard creativity tasks to appreciate a cue-rich environment and take advantage of unrelated objects and concepts for creative recombination and transformation.

Another way in which creativity manifests itself in early childhood is through spontaneous tool innovation (Beck et al. 2011; Carr, Kendal, and Flynn 2015; Cutting et al. 2014). Innovation along with imitation are considered the "dual engines of cultural learning" (Legare 2015), playing complementary roles in knowledge acquisition and transmission (Carr, Kendal, and Flynn 2016; Heyes 2012; Want and Harris 2002). Unlike imitation following a social demonstration, children's tool innovation in experimental tasks has been rarely observed (Chappell et al. 2013). This is typically explained by their propensity to learn socially and to conform in their tool use after observing someone else (Flynn, Turner, and Giraldeau 2018; Turner, Giraldeau, Flynn 2017), especially someone with a history of efficacious and reliable demonstrations (Carr, Kendal, and Flynn 2015). However, recent research suggests that children are more likely to use a tool in a novel way when its original purpose became clear rather

than when it remained causally opaque (Neldner, Mushin, and Nielsen 2017) and when the efficacy of the adults' demonstration was low, leaving space for further experimentation (Carr, Kendal, and Flynn 2015). Furthermore, research with adults shows that other people's social performance cues may influence innovative choices (Toelch et al. 2011). In this vein, infants as young as 30 months of age have been shown to be able to achieve tool innovations when socially guided to do so, but not when left on their own (Hayne, Herbert, and Simcock 2003; Barr and Wyss 2008). Overall, the infrequency in reporting innovations in experimental studies may be the result of methodological shortcomings, where such behaviours may be discarded as anomalous findings rather than properly pursued (Carr, Kendal, and Flynn 2016). Despite these challenges, two kinds of spontaneous innovative behaviours in childhood have been identified: independent invention (such as creating a novel tool from scratch) and modification (such as adopting an existing tool for a new purpose) (Carr, Kendal, and Flynn 2016).

One of the core pillars of the creativity process is idea generation, or divergent thinking – an ability to come up with multiple ideas, alternative scenarios, thoughts and actions. In adults and older children, divergent thinking is tested using a variation of the classical Unusual Uses task (Torrance and Haensly 2003; Mouchiroud and Lubart 2001). Here, a person typically is asked to list as many uses for an everyday object, e.g. a paperclip, as they can (e.g., Alternative Uses Test: Guilford 1967; Torrance Test of Creative Thinking [TTCT]: Torrance 1974; Thinking Creatively in Action and Movement test [TCAM]: Torrance 1981; Wallach and Kogan tests of creativity: Wallach and Kogan 1965). The number and breadth of unusual uses are then scored to assess the level of creativity. Divergent thinking has been assessed in the verbal (report on various ideas), figural (drawing), kinaesthetic (movement) and manual (object use) domains. The latter is most useful from a cognitive developmental perspective since young children may not have yet developed language or drawing ability. In a recent demonstration of the applicability of the divergent thinking measure in preverbal infants, Hoicka and colleagues (Bijvoet-van den Berg and Hoicka 2014) used a colourful wooden box with several exciting features and five unrelated objects. Here, divergent thinking was coded as the number of different action-box area combinations infants applied during a free play episode (e.g., hitting the edge of the box and then guiding an object through the hole). Evidence also suggests that young children increase their action innovations following social modelling of divergent thinking behaviours by adults (Hoicka et al. 2016). While divergent thinking received the most attention in both adults' and children's creativity measures, it has been pointed out that over-reliance on this

one measure is inappropriately reductionist as it misrepresents the dynamic, complex nature of creativity processes (Baptiste 2019; Baer 2016).

The second facet of creative cognition is the ability to come up with novel combinations. Here, unlike in divergent thinking where novel ideas depart from the known, the process is building heavily on the elements of existing knowledge, which are then combined in a novel way. At the core of this process lies the ability to re-imagine the existing structures – also called creative problem-finding (Runco 1994). In a seminal study with adult artists, Csikszentmihalyi and Getzels (1971) presented participants with a range of objects to use in a still-life drawing. The longer the artists spent choosing the objects, manipulating and rearranging them in several potential combinations, and the more objects they picked up, feeling their weights and textures and trying to work out their mechanical parts – in other words, time spent 'finding' a creative problem – the higher were their creativity scores received on the final drawings. Combinatory properties of creativity lie at the core of several major cognitive-based approaches, implicating the role of associative thinking, insight, mental imagery, conceptual combination, expansion and synthesis (Finke, Ward, and Smith 1992; Helie and Sun 2010; Mednick 1962; Simonton 2010; Thagart and Steward 2011). For example, in a creative synthesis task (Finke 1990), adults are tested on their ability to construct creative objects by mentally combining the components they are presented with into a potentially useful entity. The process of insight is understood here as an underlying cognitive restructuring of the problem that allows coming up with a sudden solution (Bowden et al. 2005; Gilhooly and Murphy 2005; Schooler and Melcher 1995).

The third core facet of creativity is the ability to make original transformations. Like with combinations, this process relies on some existing knowledge as a baseline structure, which is then modified in a novel way. For example, in a classical creativity task used with adults and children (TTCT; Torrance 1974), participants are asked to transform an incomplete figure by coming up with additional elements to complete the drawing. Similarly, the symbolical equivalence test (Barron 1988) measures the ability to make original transformations of objects or concepts, such as thinking of relevant metaphors or symbols. Such image transformation ability has been shown to correlate with performance on other creativity tasks in adults and predicted originality of their inventions (Palmiero et al. 2015). For young children, the process of pretend play serves as an excellent illustration, as children use existing objects but transform their meanings such that they depart from routine use (Russ 1993), transforming their imagination into reality (Vygotsky [1990] 2004). Thus, the ability to transform presents a viable line of research with young children.

How can divergent thinking, combinatory and transformative creative processes be measured in young children, keeping aside tasks that rely heavily on language or ability to draw or make other forms of art? Observational and behavioural experimental studies come to the forefront here, accompanied with fine-grained coding. Children may be observed while playing with a novel toy affording multiple actions and outcomes, just like the unusual box task (Bijvoet-van den Berg and Hoicka 2014). Measuring the number of unique actions performed is a clear proxy for divergent thinking, while the sequences of actions and specific action combinations can be coded as a proxy for combinatorial thinking. Here, the behaviour of interest is deviation from the typical use when two or more of such uses are combined. Transformation can be observed when children put together two unrelated objects in the process of play to create new meaning. A similar observation can be made when children engage with other elements which can be potentially combined or transformed, aside from toys or play objects. An example is providing children with a musical instrument like a piano or a xylophone, or a 'music wall' or 'music stairs' – an interactive sound sculpture of various shapes and colours – affording a range of musical keys. Creating novel musical sounds by combining them, transforming the sound of a single 'press' by adding other elements such as tapping or singing to them can be reliably coded by independent observers. Museums have long recognised the value of exhibits encouraging children's creativity and it is time that cognitive science learns from them (e.g., Association of Children's Museums 2015; Herz 2017; Luke et al. 2017). A variation of such tasks may capitalise on children's propensity to engage with mundane, everyday objects in an original way. A sample task to measure this process would be to offer them plain objects, such as wooden blocks or shipping cardboard boxes, and prompt their free play with them, subsequently coding how long and in what way they engage in the process, or even coding fluency, flexibility and originality of generated actions using the standard Consensual Assessment Technique (Amabile 1982).

Implicit neural measures of the creative process are also possible with children with techniques such as fNIRS and EEG. Studies with adults have long implicated the brain's default mode network (Beaty et al. 2014; Immordino-Yang, Christodoulou, and Singh 2012), dynamic interactions between the large-scale brain networks (Beaty, Seli and Schacter 2019), and alpha and theta oscillations activity (Fink and Benedek 2014; Stevens and Zabelina 2019) as correlates of creative thinking. EEG has long been a staple neuroscience method for studying various aspects of infant cognition (Saby and Marshall 2012), and advances in fNIRS have brought it to the forefront of cognitive developmental scientists in recent years (Wilcox and Biondi 2015). Proving the utility of this

method for studies of infants' developing default mode network as a signature of creative processes, a study using the fNIRS brain scanning technique was successful in capturing the default mode network activity in 18-month-olds (Bulgarelli et al. 2019). In sum, a combination of novel behavioural tasks and neural correlates capturing the facets of creative thinking in young children is necessary to move the cognitive developmental science of creativity forward.

Creativity as a cognitive process involves forming unusual associations, coming up with unconventional ideas, and making use of available resources and context in an original way. These novel ideas are possible due to a flexible attentional system, shifting perspective, noticing elements that were initially unnoticeable, and perceiving remote affordances in everyday objects and situations. Three core facets of creativity – divergent, combinatory and transformative thinking – are exhibited in children's object play, pretence and tool innovation activities, which form the base for experimental study of creativity process in childhood.

What is the relationship between curiosity, wonder and creativity?

We proposed that curiosity, wonder and creativity are complementary processes in cognitive development: curiosity drives exploration of the environment to gain new knowledge, wonder pushes the boundaries of acquired knowledge, and creativity enables active manipulation of the environment to generate new knowledge and encourage new opportunities for learning. How exactly are these processes related to each other?

Studies with adults have shown that curiosity, both specific and diversive (per Berlyne's typology, 1954), predicts creative problem solving and performance (Hagtvedt et al. 2019; Hardy, Ness, and Mecca 2017; Harrison 2016). Here, idea generation as a staple of the creativity process is fuelled by either diversive thinking, desire for novelty such as a brainstorming session (Voss and Keller 1983), or the cognitive process of iterative, step-by-step idea linking (Hagtvedt et al., 2019). Curiosity and wonder as an intrinsic need for knowledge are proposed to be the means for reaching creative goals (Kashdan and Fincham 2002; Taylor 1964). On another account, an expansive state of wonder (the kind most similar to awe) affects creative thinking through modification of pre-existing mental frames and openness to alternative perspectives (Chirico et al. 2018). However, the existing research is both limited, due to an overwhelming reliance on self-report measures (e.g., essentially asking adult participants:

"Are you a curious/wondrous/creative person?" which is very prone to social desirability biases), and inconclusive, as it often does not take into account personality traits such as openness to experience, which is equally predictive of curiosity, wonder and creativity (Hunter et al. 2016; Silvia et al. 2015). Furthermore, curiosity conceptualised as a stable trait has been shown to form part of one's creative self-efficacy and creative personal identity (Karwowski 2012), thus reducing curiosity to an aspect of creativity and generally blending the distinctions between these concepts (Arasteh 1968; Maw and Maw 1965; Penney and McCann 1964). Nevertheless, research with adults firmly intertwined curiosity, wonder and creativity, although the causal direction and the nature of these links remain to be better understood. Several theoretical approaches are plausible.

One line of thinking proposes a linear relationship, in that curiosity and wonder are direct precursors to creativity: the generative power of curiosity may lead to a state of wonder, which may in turn lead to creative pursuits. In more detail, exploration of the environment leads to accumulation and integration of multiple experiences and perspectives through assimilation and accommodation of existing information. Creativity then follows as modification and transformation of this information in order to generate new knowledge. The traces of this idea are present in early cognitive developmental literature. Vygotsky (Ayman-Nolley 1992; Lindqvist 2003; Vygotsky [1990] 2004) proposed that accrual of experiences and a combinatorial process applied to what is known are the building blocks of creative thought.[5] Similarly, the Piagetian account of knowledge construction through playful interactions with the environment (Piaget 1945; 1969) posits the accumulation and accommodation of multiple scenarios and perspectives as a pathway to creativity. Hence, the richness of experience, both quantitatively and qualitatively, ultimately affects the richness of creative imagination.

The following two theoretical models specifically link wonder and creativity in this way and are ripe for empirical investigation. Glăveanu (2017) argues that a wondering person is able to entertain and adopt multiple perspectives, to engage with the possible and the impossible in novel ways, and to inhibit conventional schemas. Having opened up the possibility for multiple perspectives, a person can then explore those perspectives through creation. A pillar of creativity – divergent thinking – is rooted in engagement with the expanded space of the possible. Schinkel (2017) similarly suggests that wonder's open-

5 "...the creative activity of the imagination depends directly on the richness and variety of a person's previous experience because this experience provides the material from which the products of fantasy are constructed." (Vygotsky 2004, 9).

ness to experience, eagerness to inquire, desire to understand, and willingness to suspend judgement and bracket existing – potentially limiting – ways of thinking, seeing and categorising, paves the way for creativity. On the one hand, wonder pushes the boundaries of what is known to the realm of the still mysterious phenomena; on the other hand, "wonder defamiliarizes the familiar, making it appear in a new light, as if seen for the first time" (Schinkel 2017, 543). Regardless of how familiar or novel the object of wonder is, it is the active act of wondering that makes subsequent divergent thinking possible.

Non-linear relationships between curiosity, wonder and creativity are also possible. First, the process may flow in the opposite direction depending on the stage: engaging in a creative act (e.g., playing a musical instrument) or witnessing it (e.g., attending a symphony concert) may put one in a state of wonder, and further prompt to search for specific information (e.g., what is the history of this symphony), which may in turn lead to more wonder (e.g., learning about a baffling fact), fuelling another phase of creativity (e.g., writing a poem inspired by the unexpected fact). Second, the three states may be deeply interlinked so that dissociating them into curiosity, wonder and creativity at any particular moment may not only be impossible but would also be detrimental to properly accounting for complex dynamically evolving cognitive phenomena (see dynamic systems approaches for a similar argument, e.g., Smith and Thelen 2003). Third, the three states may be cross-fertilising. Presenting a cyclical approach to creative cognition (Finke, Ward, and Smith 1992), the Geneplore model (made of verbs *generate* and *explore*), presents curiosity (pre-inventive exploration) and creativity (generation of pre-inventive structures) as a means to each other in a cognitive process. For example, in preparation for writing a book, a writer may gather information about the époque, traditions and people in their story. This would be the curiosity or exploration stage. Upon obtaining this knowledge, rooted in already existing and now discovered information, they then transform the facts in an original way, eventually generating new knowledge. This would be the creativity or generation stage. Here, creativity follows curiosity, which in turn enables further transformations and modifications so that generative and exploratory phases work in tandem, enabling creative transformation both through conceptual change and focused decision making.

In sum, both linear and non-linear relationship models between curiosity, wonder and creativity are open for experimental investigation. Studies with adult participants, primarily in personality and social psychology research, have obtained mixed findings (see Loewenstein 2014 for a discussion; Voss and Keller 1983), which may reflect the lack of measurement validity, or alternatively, show that curiosity, wonder and creativity are not best measured as

stable traits. The links between curiosity, wonder and creativity in childhood have been proposed but underspecified (Cecil et al. 1985), hence necessitating advancement in experimental research rooted in cognitive approaches in order to delineate their relationship and specify their developmental precursors.

Conclusions and further directions

> *"What is this?" he said at last.*
> *"This is a child!" Haigha replied eagerly, coming in front of Alice to introduce her (...).*
> *"We only found it today. It's as large as life, and twice as natural!"*
> *"I always thought they were fabulous monsters!" said the Unicorn. "Is it alive?"*
> *"It can talk," said Haigha solemnly.*
> *The Unicorn looked dreamily at Alice, and said "Talk, child."*
>
> Lewis Carroll, *Alice in Wonderland*

The intellectual fascination empowering every study designed by a cognitive developmental psychologist comes from the inability of young children to talk: if only these "fabulous monsters" could tell us all that we want to know about their curiosity, wonder and creativity! In this chapter, we focused on these three concepts, intrinsically linked to each other but often used and researched without due attention to fine differences and causal links between them. Having developed clear operational definitions, the field of cognitive development would be able to undertake empirical investigations into these phenomena, which will in turn enable a better understanding transferrable to other scholarly fields.

We presented a range of theoretical models along with emerging evidence on how curiosity, wonder and creativity underlie knowledge acquisition and knowledge transformation in early childhood. Curiosity is an intrinsically motivated, deliberate form of information-seeking through independent exploration and active social learning. Wonder is conceptualised as an emotionally uplifting, expansive quest for more knowledge through questioning of existing frames. The transition from knowledge acquisition to its transformation begins with wonder, which expands the possibility space for knowledge beyond what already exists, motivating further discovery-oriented processes to search more broadly and inquire more meaningfully. Both curiosity and wonder seem to be useful prerequisites to creativity, understood as generation of novel ideas, original transformations and novel combinations of the existing structures. As both curiosity and wonder enable learning, knowledge acqui-

sition as a goal in itself eventually extinguishes curiosity, while it does not detrimentally affect either wonder or creativity. Creativity allows to develop new knowledge regardless of what already exists or is potentially attainable. In a nutshell, curiosity is assimilation of information, intellectual activity in search of knowledge to achieve a reduction in uncertainty, whereas wonder pushes the door open to uncertainty, and creativity allows for modification and transformation of information and is only possible with a high threshold of tolerance to uncertainty.

It is premature to infer the causal links between these concepts. Cognitive processes may change dynamically from seeking specific information and engaging in broad exploration, to pondering upon discoveries and posing original questions, to generating novel ideas and transforming existing structures. Unanswered questions abound. Future research may ask whether curiosity and wonder differentially affect learning or creativity outcomes, or whether individual differences in trait curiosity remain stable across development and are retained in adulthood. To test the proposed linear relationship between these concepts, it may be asked if curiosity and wonder necessarily precede creative thinking; does one need to have satisfied one's curiosity about the topic before the creative process can start? While curiosity seeks out relevant, pertinent and reliable information to satisfy its goal, what kind of information is suitable for wonder and creativity? While we know that curiosity subsides once the missing information has been obtained, wonder may be much more open-ended. What about creativity? Does one stop being creative upon believing to have found the most creative solution? Is it the abundance of cues and information or rather its scarcity that is conducive to creativity, given its reliance on perceiving non-obvious affordances in the environment? We hope to see future research engage with these and other fascinating questions.

Furthermore, essential both for enabling optimal experimental investigations and effective educational interventions is an answer to the question whether curiosity, wonder or creativity can reliably be induced. Some suggestions to facilitate curiosity are to encourage question asking and critical thinking, expose children to counter-intuitive evidence, pose follow-up questions to probe further interest, encourage sharing interest with others, and create informationally rich environments. Wonder can be supported through exposure to various fascinating phenomena, dedicating time and space to experience and reflect upon them, access to a variety of information sources, promoting tolerance of uncertainty and complexity, and being open and welcoming to new experiences. Creativity thrives in judgement-free, playful environments, conducive to artistic and emotional expressivity, and benefits from the use of trainable cognitive skills such as divergent thinking, con-

ceptual combination, associative thinking and cognitive flexibility. A more fundamental question, however, is whether a generic approach fits every child (Parsons 1969). For instance, we may have assumed that seeing the northern lights for the first time is a likely generic candidate for inducing wonder and started to use this as an experimental induction in our study. But what about those children for whom encountering a challenging mathematical problem is most wondrous, while the wonders of nature leave them unaffected? We would be devastatingly wrong to conclude in our experiment that these children were unable to experience the state in principle or were less prone to wonder. Considering such inevitable individual differences, longitudinal methods may be most instrumental in detecting developmental change in the behavioural, neural and physiological manifestations of curiosity, wonder and creativity. Finally, while in this article we chose to focus on the cognitive developmental approach to the study of curiosity, wonder and creativity, other fields of empirical inquiry, such as phenomenological research, embodied cognition or psychoanalysis, among others, may also substantially contribute to our understanding of these phenomena.

The abundance of practical guidelines for parents, educators and psychologists urges them to foster curiosity, nurture wonder and encourage creativity in children, often lacking supporting empirical data for the proposed interventions. Such evidence could be generated with the use of age-appropriate, interdisciplinary measures providing insight into underlying cognitive processes, asking feasible research questions and conducting longitudinal studies marking individual trajectories in development of curiosity, wonder and creativity.

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3

STUDYING WONDER EMPIRICALLY AND PROMOTING WONDER IN EDUCATION

8 Wonder: Its Nature and Its Role in the Learning Process

Yannis Hadzigeorgiou

Introduction

From time to time, the value of wonder has been defended by educators and scientists alike. In her classic *The Sense of Wonder*, marine biologist and environmentalist Rachel Carson – who helped launch the environmental movement (see her *Silent Spring*) –described wonder as "an unfailing antidote against the boredom and disenchantments of later years, the sterile preoccupation with things that are artificial, the alienation from the sources of our strength (Carson 1965, 43). Writing from the perspective of an educator, Carson, in her book, talked about children's 'inborn sense of wonder' and the importance of keeping it alive throughout life. Even though she did not attempt to explicate the concept of wonder, she did send an important message to parents and teachers: keeping alive a child's inborn sense of wonder requires the companionship of at least one adult who must share this sense of wonder with the child, and thus rediscover with the child the mystery, the joy and the excitement of the natural world (Carson 1965). On the other hand, Oxford evolutionary biologist Richard Dawkins, one of the most fervent exponents of the role of wonder in science, talks about beauty and the 'poetry of science' by pointing out that the beauty of and the ability to wonder at various phenomena don't disappear because scientists have explained them. For example, Newton's explanation of the rainbow has not explained away its beauty or the wonder people feel upon seeing a rainbow. In other words, the prismatic analysis of light into different colours has not diminished the sense of wonder experienced at the sight of a rainbow. In his *Unweaving the Rainbow: Science, Delusion, and the Appetite for Wonder,* Dawkins considers wonder "one of the highest experiences of which the human psyche is capable" (Dawkins 1998, xii), and states, thus sending an important message to those in favour of utilitarian/

instrumentalist conceptions of knowledge (and of education for that matter): "Far from science not being useful, my worry is that it is so useful as to overshadow and distract from its inspirational and cultural value. Usually even its sternest critics concede the usefulness of science, while completely *missing the wonder*." (Dawkins 1998, 10, my italics).

In the area of philosophy wonder is, of course, a taken-for-granted notion (i.e., wonder is considered the source of all intellectual inquiry, which, as an idea, goes back to Plato and Aristotle). In education, however, wonder has not received enough attention. Although wonder is not by any means a panacea for students' *anorexia learnosa* (my neologism), anecdotal evidence and some empirical studies (e.g. Gilbert and Byers, 2017; Hadzigeorgiou 2010; 2012; Hadzigeorgiou and Garganourakis 2010; Hadzigeorgiou et al. 2012) point to one indisputable fact: wonder can be an important teaching/learning tool, which can foster both emotional and cognitive engagement with subject matter, regardless of the discipline (e.g., history, science, geography, language arts). According to Kieran Egan's educational theory, which conceives of education as a process of recapitulation during which students recapitulate, that is, repeat in the same order, 'kinds of understandings' – somatic, mythic, romantic, philosophic and ironic – as these have appeared in our cultural history, the characteristics of each kind of understanding become cognitive tools, that is, tools which can aid thinking and learning (Egan 1992; 1997; 2005). Wonder, in Egan's educational theory, is an important cognitive tool for students in the age range from seven to fifteen years. (The specific characteristics of romantic understanding can be seen in table 3.)

But, as mentioned earlier, wonder, in general, has not received the attention it truly deserves. One could identify a number of plausible reasons for such lack of interest: (i) The difficulty of conceptualising and articulating wonder (e.g., is it a feeling, a state of mind, a mode of consciousness, an experience? Does it differ from curiosity?); (ii) The inherent passivity of wonder (e.g., wonder is as an anaesthetic and linked to incomprehensibility); (iii) The identification or association of wonder with the notion of the sublime, with miracles, with magic, with science fiction; (iv) The association of wonder with emotions (e.g., emotions are important but knowledge is more important); (v) A stronger focus on what learning is rather than the conditions on which learning depends (e.g., learning as a rational activity, emphasis on the social and the cognitive element); (vi) The notion that wonder has to be evoked (e.g., requires specific questions and takes time to uncover and reflect upon); (vii) Emphasis on 'accountability' and 'performativity' (e.g. PISA and measurable outcomes); (viii) The fact that wonder may disrupt the predictability or 'order' of the learning process and teachers' lesson plans (e.g., wonder encourages ask-

ing questions in a non-linear fashion); (ix) Teachers, like the majority of adults, have lost their sense of wonder (e.g., how many times during a school day do teachers ask wonder questions or even such questions as "I wonder why, when, how…"?) (Hadzigeorgiou 2007; 2012; 2016). There is also the problem that children, because they are overwhelmed by sensory information at a very early age through activities such as TV viewing and video games, lose their sensitivity (i.e. their capacity to attune with reality), which is crucial for the experience of wonder. Therefore, children, as they grow up, have difficulty to experience wonder. The view that "when wonder, beauty, sensitivity and secure attachment are present, learning is meaningful" is a reminder of some important preconditions for the experience of wonder (L'Ecuyer 2014).

And yet, regardless of the aforementioned reasons, some people can, and do, experience wonder in daily life. An experience of wonder can take place in the street, in a museum, at home, at a theatre, in the great outdoors or any natural environment for that matter, in a lecture hall, on the beach while watching the sunset or the rolling waves, in a scientific laboratory during an experiment, or even while sitting and thinking about a situation, past or future. All these examples do illustrate the many guises of wonder and hence its complex and elusive nature. And these guises may very well make one wonder at and about the nature of wonder itself.

It appears that wonder can be conceived: (i) as (bewildered) curiosity, that is, as a drive to explore, to investigate (i.e. to wonder about); (ii) as (bewildered) curiosity, mingled with admiration; (iii) as admiration, that is, as a response to entities, phenomena, events and ideas (i.e. to wonder at, an experience with the form of awed wonder); (iv) as a response to something mysterious, magical, even miraculous and incomprehensible (i.e. to wonder at, a feeling of awed wonder); as Aristotelian *thaumazein*, that is, as a response to puzzles and natural phenomena (i.e. the wonders of nature) which are *thaumasta* (wonder-full) things, worthy of our attention (i.e. to wonder at and wonder about); (v) as Socratic aporia, that is, as puzzlement over contradictions, discrepancies, paradoxes (i.e. to wonder about) (Hadzigeorgiou 2001; 2016; Schinkel 2017). Gabriel Marcel has argued that the thaumazein (wonder) of the ancient Greeks lies on the borderline between wonderment and admiration (Marcel 1963).

It is beyond the scope of this paper to delve into the Platonic or the Aristotelian notion of wonder, but it appears, in reading the literature, that the legacy of Plato and Aristotle can provide some insights into the nature of wonder. For Plato, "Wonder ('thaumazein') is the beginning of philosophy" (*Theaetetus 155d*), something with which Aristotle concurred: "Men were first led to philosophy, as indeed they are today, by wonder" (*Metaphysics* I, 982b). For Plato (speaking as/for Socrates in the various dialogues), 'thaumazein' (infinitive)

is specifically and explicitly linked to 'aporia' (a + poros = no way to proceed, no path to follow), that is, an 'intellectual impasse', which signals the limits of one's knowledge and hence one's ignorance and the desire for 'true knowledge'. For Plato, 'thaumata' (noun), as made evident in the dialogues, refer to the wonders of nature and of the universe, and also to taken-for-granted ideas such as good, virtue, morality, etc. However, the notion of confusion is also linked to the notion of wonder. Indeed, Theaetetus admits that he wonders about all the things he is confused about and "in looking at them he truly feels dizzy" (*Theaetetus* 155c). And Aristotle's sense of wonder is also given by the word 'Thaumazein', which is linked to admiration and confusion and puzzlement over the 'thaumata', which are the wonders of nature, of the universe. Apparently, Aristotle inherited the Platonic 'thaumazein', as the source of all intellectual inquiry. And his sense of 'thaumazein' is linked to one's ignorance: "A man who is perplexed and wonders believes himself to be ignorant and philosophizes in order to avoid ignorance", (*Metaphysics* I, 982b). Such views about wonder could be summarised as follows:

- Wonder = Aporia (puzzlement);
- Wonder = Thaumazein (admiration);
- Wonder = Thaumazein + Aporia;
- Wonder = Thaumazein f (Aporia) (that is, 'thaumazein' as a result of 'aporia').

It is of note that in ancient Greece the notion of curiosity did not have a place in one's intellectual inquiry, simply because the word 'περιέργεια' (curiosity) described the activity of prying into other people's affairs. Thus it was the notion of wonder that described one's intellectual curiosity, that is, the source of intellectual inquiry. Of course, with the birth of modern science, curiosity acquired a special significance. For it was curiosity, together with wonder, that played a central role in the development of science (Ball 2013). Despite the fact that the two notions are frequently used interchangeably, there is a subtle difference between the two: "Curiosity belongs to the scientific impulse and would strive to dominate nature; whereas, wonder is poetic and is content to view things in their wholeness and full context (Taylor 1998, 169). Martin Heidegger, in his *Time and Being,* described the difference between curiosity and wonder as follows: "Curiosity has nothing to do with observing entities and marvelling at them (...) once curiosity obtains sight of anything, it already looks away to what is coming next." (Heidegger [1927] 2008, 216, 398). And Edmund Burke in his *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful* identified curiosity as "the first and simplest emotion which we discover in the human mind", which is different from the state of astonishment, during which

all emotions are suspended and "the mind is so entirely filled with its object that it cannot entertain any other (...)" (Burke [1757] 1990, 11, 53).

In looking at the notion of wonder per se, dictionaries define it as: "A cause of astonishment or admiration (Oxford Dictionary, 11th Ed.), as "A feeling of surprise mingled with admiration or curiosity or bewilderment (Oxford Paperback Dictionary, 2nd Ed.), and as "Rapt attention or astonishment at something awesomely mysterious or new to one's experience (Webster's New Collegiate Dictionary). These definitions, apparently, cannot capture the full meaning of wonder, due to the multidimensional nature of the latter. But a conceptual inquiry into wonder has identified three 'faces' of wonder: (a) Wonder as the emotion caused by the perception of something novel and unexpected or inexplicable, (b) Wonder as the state of mind in which this emotion exists, and (c) Wonder as astonishment mingled with perplexity or bewildered curiosity (Hove 1996). At the same time, however, one needs to realise the very complex and elusive nature of wonder. Indeed, wonder, as a state of mind, can be associated with mystery, awe, perplexity, astonishment, surprise, amazement, admiration and bewilderment. Yet the experience of a sense of wonder cannot be reduced to the experience of any one of the aforementioned elements. Mere surprise or even mere astonishment is not wonder any more than is mere admiration or bewilderment. Schinkel's (2017) definition is worth mentioning here, as it captures the most important features of wonder: "A mode of consciousness in which we experience that which we perceive or are contemplating as in some way strange, beyond our understanding, yet worthy of our attention for its own sake, and in which our attention takes the form of an open, receptive stance". 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 2007).

Given, however, the multidimensional, complex and elusive nature of wonder, definitions cannot capture the 'whole picture', that is, the full meaning of it (i.e. one should always bear in mind the many 'faces' or 'guises' of wonder). Moreover, definitions, while they can serve as guides by giving us some sense of what wonder is, do not say enough (and some of them do not say anything) about some important characteristics that have specific pedagogical implications. For example, given the relationship between intellectual curiosity and wonder (i.e. curiosity as a 'guise' or form or wonder vs curiosity as something different but which has its source in wonder), the fact that one's sense of wonder can remain even after one's curiosity has been satisfied is not given by definitions. And it cannot emerge from them either, unless, of course, one embarks upon a philosophical analysis, which leads to the above characteristic of won-

der as an implication of a definition. It is my purpose in this chapter to discuss thirteen ideas/features of wonder, which point both to its complex and elusive nature and to its educational/pedagogical value, along with their implications. Even though the ideas and features are interrelated, I choose to discuss them separately in order to get clear about their meaning and implications. These ideas and features are the outcome of empirical research in the area of primary and secondary science education, even though some of the material and some of the activities used in the research, and hence the implications for students' experience of wonder, transcend disciplinary boundaries (Hadzigeorgiou 2001; 2006; 2007; 2010; 2012; Hadzigeorgiou and Garganourakis, 2010; Hadzigeorgiou et al. 2011; Hadzigeorgiou et al. 2012).

1. Wonder has to be evoked

Unlike curiosity, which is aroused by novel, unusual, unfamiliar and strange situations, objects and events, wonder can be experienced in situations and events and with objects and ideas that are ordinary and familiar. And it is precisely the experience of wonder that makes these look extraordinary and unfamiliar. This is the legacy of Socrates, who questioned the nature of familiar ideas that most people took – and still take – for granted (e.g., the nature of love, virtue, friendship) and, in the process, made his interlocutors feel perplexed and confused (Hadzigeorgiou 2016). It is therefore evident that the experience of wonder (at and about familiar and ordinary situations, objects and ideas) does not 'happen automatically', it has to 'emerge', that is, to be evoked through questions, linguistic expressions, images and experiments. This, however, does not mean that there are no cases in which the experience of wonder 'happens automatically', that is, when wonder 'strikes'. But in cases in which we refer to very familiar and everyday objects and phenomena (e.g., a glass of water, a tree, the rain, the trajectory of a pebble or of a football) one's sense of wonder has to be evoked. But again, this does not imply that common and everyday phenomena, like a sunset, cannot evoke a sense wonder in both young children and adults.

The idea, for example, that 'we are all stardust' (Sagan's famous phrase), and that the water that comes from our tap could contain molecules that dinosaurs drank more than sixty million years ago, refers to our own bodies and the water we drink – something that most, if not all, people take for granted. But when encouraged to reflect on this by a teacher, most students started to wonder about it (as a video and audiotape analysis showed). The primary school pupils were truly astonished at the fact that dinosaurs drank the same

water as we do today, which prompted them to consider various other possibilities. And the secondary school students, even though they were aware of the human body's chemical composition, found the fact that we are made of the same chemical elements that starts are made of amazing and intriguing. What's even more interesting is that these students spent a great deal of time outside class wondering about the implications of the idea that we are all stardust (Hadzigeorgiou 2010).

What, therefore, should be pointed out is that, although there are cases in which the experience of wonder is immediate (e.g., watching a spectacular stellar explosion, a rainbow, a total eclipse of the sun), more often than not this experience is the result of an awareness which presupposes reflection upon what is taken for granted, in order to discover something unexpected. The following example illustrates the point I am making even more clearly. Many students know that light travels at a speed of 300,000 km/s. It's a piece of information that most secondary school students remember but also take for granted. It's a universal constant and everybody needs to know it. However, they only start to wonder about light being the fastest entity in the universe when, by doing a simple calculation, they realise that if you were travelling at the speed of light, you could fly around the earth (the equator) seven times in one second. No one, let alone a young student, holding a tiny globe in one hand is able to move their index finger around the globe's equator more than two or three times in one second (Hadzigeorgiou 2016). It is this awareness that helps evoke a sense of wonder in the student. Of course, the state of 'heightened awareness', in general, is another characteristic feature of wonder, which I discuss later in this chapter. But the point I want to make here is that developing awareness always requires some kind of activity (and question asking). In the above example, the activity with the globe was crucial for raising the students' awareness.

2. Anything can be a source of wonder

If wonder needs to be evoked, as discussed earlier, then everything can become a source of wonder. The above examples illustrated this. Below I quote at some length from a book written by Kieran Egan, who used as an example something not just ordinary and very familiar, but also something that we dispose of after use. He talks about a broken Styrofoam cup's 'heroic journey' in order to evoke in his readers a sense of wonder.

> We can enlarge its significance by considering it as a part of the heroic journey that is the human struggle to shape the world more closely to our desires, to find release from the constant toil, sickness, and pain that have been the lot of most people most of the time (...). The knowledge of chemical and physical processes that have gone into its design and making is prodigious. And we have learned the environmental costs entailed in applying this knowledge to create this convenience, and we are as a society recognizing that we must satisfy this particular desire in other ways that do not threaten our harmony with the natural world. One can flash such thoughts through the mind in less than half a second (...). They are associations that come with the romantic image of the broken cup. (Egan 1992, 76-77)

The various associations that come to mind when we see an ordinary cup can help develop our awareness of the chemical and physical process that have gone into manufacturing one cup, and also the cost we have to pay as a society for its use. It is the awareness of these associations that make the familiar, ordinary cup an object of wonder. Of course, one should be reminded that there are some students who wonder at and about many things and some who do not wonder at all. Hadzigeorgiou (2010) has identified a number of student profiles with regard to wonder (i.e. not all students are wonderers, even though they can be curious). Even in the field of professional science there are those who do not really wonder. But those who do can find wonder in almost anything, simply because anything can be a source of wonder. In *The Star Thrower* Loren Eiseley speaks of two kinds of practitioners in science. One is the "extreme reductionist who is so busy stripping things apart that the tremendous mystery has been reduced to a trifle" and the other "who still has a controlled sense of wonder before the universal mystery whether it hides in a snail's eye or within the light that impinges on that delicate organ (Eiseley 1979, 151).

3. Wonder involves focused and sustained attention

When one wonders at and/or about something (i.e. the object of wonder), one's attention is always focused, and often also sustained. This is because, as Edmund Burk put it, the mind is "so entirely filled with its object that it cannot entertain any other" ([1757] 1990, 53). In other words, when one experiences a sense of wonder, one is truly present in a situation or an event. Even though such an observation will not lead educators and teachers to reconsider what the notion of 'being present' in the classroom, and specifically 'being present' during a teaching/learning activity,

really means, the pedagogical value of wonder can be seen in the evidence from some studies.

In a study with very young children (aged between 4 and 6 years), 'objects of wonder' (e.g., familiar and ordinary objects connected to unexpected situations or phenomena: a toy car that moves without batteries, picking up an ice cube using only a string and salt, pouring water from one glass to another using a string) were placed in front of the children and in a corner of the classroom by the teacher. The children spent time exploring the objects and asking questions about them, paying attention to the details of the objects. And the children, at least some of them, also demonstrated this focused and sustained attention the next few days (Hadzigeorgiou 2001; 2010). Surprisingly, while one might expect the children's sense of wonder to wane or even disappear altogether after having explored the objects and hearing the explanation (which was geared towards factual knowledge rather than conceptual understanding), the evidence showed the opposite. A possible explanation is that children's sense of wonder was so powerful that it made them pay attention again and again to the objects of wonder.

However, focused attention must be accompanied by involvement with the object in order for a familiar object or situation to become an object of wonder. For example, while at an amusement park, a child may look at a helium-filled balloon or a wave swinger but may not notice what is really happening, even though this goes contrary to his or her own experience. Indeed, a child seeing a balloon going up may not notice that that particular balloon is something that contradicts his or her own experience with balloons, which always fall down (unless there is strong wind to blow them away). The child, of course, if asked, will most likely say that it is the air that takes it up. It is for this reason that the child must be invited to notice differences by seeing a regular balloon going down and not up in the air, in the absence of wind, if he or she is to start to reorganise and revise his or her ideas about the weight of objects and their motion. And in the case of a wave swinger, it is very unlikely that children, even adults, will notice that the angles the seats form to the vertical are all the same and independent of the weight they carry (i.e. both empty seats and loaded seats form the same angle to the vertical) (Hadzigeorgiou 2016).

4. Wonder fosters deep engagement

Because of the sustained attention involved in the experience of wonder, and also because of the fact that wonder becomes a source of questions in the form of 'aporia' and also in the form of curiosity, the

possibilities for students' engagement with the object of wonder increase. One should be reminded that while teaching, in any way, does not necessarily result in learning, increasing the possibilities for learning through a variety of ways is a strategy worth keeping in mind.

It is of note that what describes, more often than not, the educational reality worldwide is the difficulty on the part of students to engage in the various disciplines. For example, despite interesting methods of teaching, despite attempts at making school science student centred and socially oriented, even despite students' motivation to learn, engagement with science, particularly with subject matter, remains a problematic issue (Hadzigeorgiou and Stivaktakis 2008; see also Godek et al. 2018, for a review of the problem of 'engagement'). While deep engagement may very well be considered an ideal – and to a certain degree it really is – engagement with science, as empirical evidence suggests, can be high in some cases. It may or may not be deep – 'deep' in the sense that it is the outcome of what Schinkel (2017) describes as 'deep wonder', but this is a matter of interpretation of the empirical findings. These findings refer to two studies with ninth graders, one conducted in a public school and the other in a private school.

In the first study, a public school teacher taught two similar (in terms of students' academic achievement and socioeconomic background) ninth grade classes the mandated curriculum and attempted to evoke wonder in one of them (i.e. she identified potential sources of wonder from the science curriculum and used these to evoke wonder at the beginning of the instructional process). The students of both classes kept an optional journal from early October to the end of April, in which they were free to write, whenever they wanted, any questions or comments about the lessons (e.g., what they found interesting or not, what they liked, what made an impression on them, things they really wanted to ask, what they would have liked to learn more about, etc.). A quantitative analysis of their journal entries can be seen in tables 1 and 2 where the difference between the groups is very evident (Hadzigeorgiou 2012). Even though the qualitative analysis of the content of the journals gave valuable information about the role of wonder in the learning process, the quantitative data do provide support for the power of wonder in engaging students. This evidence is also supported by Gilbert's (2013; Gilbert and Byers 2017) studies with preservice primary school teachers.

Table 8.1 Quantitative data from students' optional journals (Control group)

	Number of students (N=30)	Males (N1=14)	Females (N2=16)
Number of students who made entries	11	6	5
Total number of entries	34	20	14
Total number of questions asked	109	67	42
Total number of comments	48	30	18

Table 8.2 Quantitative data from students' optional journals (Wonder group)

	Number of students (N=27)	Males (N1=15)	Females (N2=12)
Number of students who made entries	19	10	9
Total number of entries	75	35	40
Total number of questions asked	321	165	156
Total number of comments	235	120	115

The second study involved 19 private school teachers who taught two treatment groups (i.e. quasi-experimental design) consisting of ninth-grade students the mandated curriculum (current electricity – DC & AC) and attempted to encourage the development of 'Romantic Understanding' in one of them (by using a story based on actual historical events in the life of Nikola Tesla). As in the first study, the students of both treatment groups kept an optional journal (until the end of the school year), in which they too were free to write any kinds of comments and questions about what they had learned in class whenever they liked (i.e. what they found interesting or not interesting about AC electricity, what they liked, what made an impression on them, things they really wanted to ask, what they would have liked to learn more about, etc.). The students also took a test (consisting of 10 items) at the end of the school year (Hadzigeorgiou, Klassen, and Froese-Klassen 2012).

While a comparison of the two treatment groups in terms of involvement provided evidence for the higher number of students from the 'Romantic' group, who made journal entries, asked questions and made comments (just

like in the first study), a qualitative analysis of the students' journals also provided another important piece of information. The most prevalent characteristic of romantic understanding was the experience of wonder, as tables 3 and 4 show (Hadzigeorgiou et al. 2012).

Table 8.3 Romantic characteristics identified in students' journals and their frequency of appearance in students' journal entries

Romantic characteristics	Number of students	Frequency of appearance
Humanisation of meaning	43 (26M, 17F)	106 (55M, 51F)
Heroic elements	94 (53M, 41F)	221 (157M, 164F)
Wonder	*94 (54M, 40F)*	*258 (131M, 127F)*
Extremes of reality	50 (32M, 18F)	72 (52M, 20F)
Contesting of ideas	26 (17M, 9F)	55 (36M, 19F)

Table 8.4 Romantic characteristics explicitly associated with science content knowledge and their frequency of appearance in students' journal entries

Romantic characteristics	Number of students	Frequency of appearance
Humanisation of meaning	28 (19M, 9F)	77 (44M, 33F)
Heroic elements	66 (31M, 35F)	105 (70M, 35F)
Wonder	*68 (37M, 31F)*	*113 (62M, 51F)*
Extremes of reality	34 (24M, 20F)	54 (29M, 25F)
Contesting of ideas	10 (6M, 4F)	19 (13M, 6F)

It is true that the results of the aforementioned two studies refer to what happened in a single classroom, and in a variety of schools, respectively. No doubt the novelty of the interventions used in both studies helped in motivating the students to learn. However, at the same time, the quantitative analysis, when considered in the light of the qualitative analysis of students' journal entries, does provide evidence for the role of wonder in fostering engagement with content knowledge. Even though one may very well be sceptical about the evidence and its potential to inform educational policy (due to the limitations inherent in such kind of studies), the fact that wonder increases the possibilities for engagement with subject matter knowledge cannot be disputed.

5. Wonder creates anticipation

Anticipation, the expectation that something will happen in the near future, is central to Dewey's notion of 'aesthetic experience'. This kind of experience is different from an ordinary experience, in the sense that it involves unity, flow and fulfilment. Such an experience is transformative (Dewey 1934; Pugh, Bergstrom, and Spencer 2017). In a study with both second- and eighth-grade students of various primary and secondary schools, the teacher created anticipation in students by simply announcing what activity they would participate in the coming week: the second graders would lift a stack of books using just their breath, and the eighth graders would make a density tower by stacking different layers of liquid on top of one another. An overwhelming majority of students, regardless of school, age or educational level, felt anticipation at the prospect of the activities. And the activities that created anticipation were all activities that evoked a sense of wonder in the students (Hadzigeorgiou 2010). It should be noted that when the teacher announced next month's experiment – make-your-own plastic with only milk and vinegar – students of both age groups were so excited that even after a month's wait, most of them remembered exactly what their teacher had promised and couldn't wait to get started. Even the students who couldn't contain their curiosity and had gone online to find out how to turn milk and vinegar into plastic were eager to participate in the classroom activities (Hadzigeorgiou 2010).

6. Wonder captures the imagination and fosters possibility thinking

Wonder taps the imagination. This is a fact. Whether one wonders at or about an unknown, novel or unfamiliar object or event, or about something familiar, the act of wondering stirs the imagination and causes us to see the object or event in a new light. This is because the mind inevitably becomes involved in divergent thinking (since the object of wonder cannot be understood in terms of past knowledge and experiences). A tree, as an object of wonder, can fire the imagination and can be seen as a silent guard, as can a tree leaf which can be seen as a valley with a network of streams that keep it fertile and alive (Hadzigeorgiou 2010). Of course, the opposite is also true: wonder feeds the imagination (i.e. wonder fosters imaginative thinking). And this is why 'imaginative education', as an education of and for the imagination, places primacy upon the role of wonder in the learning process (Egan et al. 2014).

Seeing the world through the lens of wonder can make schools more exciting and creative places (Egan et al. 2014). And in this sense, imagination can foster what is specifically called 'possibility thinking' (i.e. a kind of divergent, creative thinking). The empirical evidence below is a case in point (Hadzigeorgiou 2012):

> *If matter is 99% empty space, and if light is invisible, scientists may be able to create an invisible human being who can pass through walls, buildings, etc.* (ninth-grade student)

> *The idea of wireless transmission of electrical energy made me think of the possibility of transmitting energy to distant places on earth and perhaps, in the future, to a colony in space before it is developed and becomes self-sufficient in terms of power production.* (ninth-grade student)

7. Wonder has an aesthetic dimension

The relationship between aesthetics and wonder is well known. Whether one perceives beauty in nature (e.g., a sunset, a rainbow, a stellar explosion, a water crystal) or beauty in human creations (e.g., the Parthenon, a medieval castle, a statue), one's sense of wonder is always present in the form of admiration. In other words, the aesthetic perception of the whole is expressed as 'admiratio', that is, wonder (Taylor 1998, 169). One could, if fact, form a hypothesis: might the 'fact' that beauty is everywhere around us (as Thomas Aquinas said) be the reason that everything can be a source or object of wonder?

With regard to the beauty in nature, the aesthetic dimension of wonder can be linked to what Richards (2001) calls our 'deeper ecological self', who reacts at the sight of natural forms (e.g., mountains, clouds, trees, forests, waterfalls), leading to 'a deeper holistic awareness'. Natural beauty, as Richards argued, has an adaptive value since it may advance a greater connection with the natural world. Although this could be contested, there is a pressing and legitimate question: why do we respond so quickly and intensely to certain images of the natural world? Why do natural forms around us capture our attention, evoke appreciation, evoke wonder and inspire even awe? Fractal forms, in particular, found in these natural forms, can be associated with transcendent experiences of beauty, even with the sublime (see Santayana 1955). It makes sense, therefore, to talk about "a transcendent reaction of our deeply aware ecological self" (Richards 2001, 63). Richard's notion of 'deeper holistic awareness' concurs with Whitehead's view that beauty and awareness are linked in a complex net-

work of relationships between the various components of reality. As he argued: "Beauty concerns the inter-relations of the various components of reality, the inter-relations of the various components of Appearance, and also the relations of Appearance to Reality. (Whitehead 1933, 341).

Such a notion of beauty makes sense if one considers that for Whitehead beauty lies in experiencing contrasts. His notion of beauty stems from his view of harmony as the interconnection of differences: "Contrast elicits depth, and only shallow experience is possible when there is a lack of patterned contrast" (Whitehead 1933, 268). The notion of 'patterned contrast', in and of itself, could very well be the source of wonder, without any reference to the notion of beauty per se (even though such notions as 'pattern' and 'wholes' do have an aesthetic dimension, and, as such, evoke a sense of wonder). Indeed, because wonder has to be evoked, one needs to take the various parts of one's experience (which can be considered the 'background' of one's experience) and then put them in relationship, in order to interconnect the various parts and thus perceive a 'patterned contrast' (which can be considered the 'foreground' of one's experience and possibly one's object of wonder). However, for Whitehead it is the contrast among the various parts, the various components of reality, which constitutes beauty. He is quite explicit about the role of 'contrast' in bringing the various components of reality into focus and hence in forming 'wholes': "The whole heightens the feelings for the parts, and the parts heighten the feelings for the whole, and for each other" (Whitehead 1933, 296).

The relationship, however, between aesthetics and wonder can be also seen in the context of education. It is possible that students become involved in an exploration, in order to understand a situation for the purpose of creating an artifact. The students' creation can be a connection between wonder and aesthetics. For example, young children in the first grades of primary school realized that, while a ball from modelling clay sinks in the water, appropriately shaped – that is, like a boat – it can float. And this boat can even hold a few other smaller balls without sinking. The students' initial wonder (i.e. wonder at the fact that it is not only the weight of an object that determines whether the object will sink or float, but also its shape) was complemented with aesthetic judgments. Indeed, for them the boat they made from modelling clay was 'cool', 'fantastic' and 'awesome'. Such judgements, while they do not explicitly refer to the notion of beauty, are aesthetic in the wider sense of the term, which incorporates a sense of wonder (Hadzigeorgiou 2016). However, more importantly, the aesthetic dimension of wonder, in general, has the potential to humanise curriculum and instruction, especially in the case of technology and the physical sciences, and engineering for that matter (Hadzigeorgiou 2005a). Indeed, the aesthetic dimension of wonder has the potential to 'infuse'

both curriculum and teaching with emotions, even intense emotions (i.e. passion). And it becomes quite 'visible' in art and science connections, in teaching science through poetry, in designing something by considering both the principles of science and aesthetic considerations, or even in designing or creating anything (e.g., an experiment, a bridge) that may be considered 'wonder-full' by those who designed it and/or perceive it.

8. Wonder remains – it 'lingers' – even after one's curiosity has been satisfied

Whether intellectual curiosity is seen as a guise of wonder or as something that is different from wonder, its value is indisputable. The role of intellectual curiosity in the learning process, as a drive to explore and to search for answers to questions and solutions to problems, is of paramount importance. However, at some point, when exploration comes to an end because answers to the questions have been found, curiosity comes to an end, too. Certainly, there may very well be new questions and hence new explorations etc., and therefore we should rather talk about an on-going exploration, as is the case with scientific research. But in the context of education, (and in daily life too), where students become involved in an exploratory activity (e.g., in order to understand a specific historical event, a puzzling physical or chemical phenomenon, in order to create something that sounds strange or even impossible), the timeframe of the instructional activity more or less coincides with the end of students' exploration and investigation, and hence with the satisfaction of their intellectual curiosity. Does the same thing happen with students' sense of wonder?

There is empirical evidence that students who were wondering at the possibility of stacking a number of liquids in a jar, and became intellectually curious about how to create such a multi-layered liquid, understood during their investigations that it is the concept of density that makes that possibility a reality. Once they understood this and were successful at creating a jar with various liquids with different densities, their initial curiosity was satisfied. However, their sense of wonder at the idea or possibility of having many liquids on top of one another remained. The comments in their journals provided evidence of this. By the same token, even though students' intellectual curiosity was satisfied with regard to how it is possible for divers to perform a twisting somersault (i.e. at first glance it appears that there is a violation of the principle of conservation of angular momentum), for basketball players to literally 'hang in the air' even for a split second (thus violating the law of gravity), and also

with regard to the mystery of 'fairy circles' (i.e. perfectly circular patches of barren ground) in some African regions, their sense of wonder remained even after these phenomena were explained and it was clear that no violation of any physical laws had occurred. And this sense of wonder also helped take science out of the school classroom, as an analysis of students' journal entries revealed (Hadzigeorgiou 2010).

9. Wonder helps one make sense of a situation, an event, through a silent dialogue with oneself

When I read Callum Roberts' *Ocean of Life* (2013), I experienced a sense of wonder (as astonishment mingled with bewildered curiosity) when I learned that a fishing boat in the Pacific Ocean, in the process of legally catching 211 mahi-mahi, caught and tossed back dead into the water: 488 turtles, 455 stingrays, 460 sharks, 68 sailfish, 32 tuna, 11 wahoo, 8 swordfish and 4 giant sunfish. Even though I did not know the names of some of those fish, my first reaction was a sense of wonder at and about such an activity. My sense of wonder could be reduced to the 'Why' question, but I also began to 'ask myself' specific questions about what I had just read and tried to find answers to these questions. In other words, I was involved in a silent dialogue with my own self.

In the context of a research project with secondary school students, a teacher used an excerpt from Callum Roberts' book that described the fishermen's activity and the numbers of fish they caught and tossed back into the ocean. Here are the questions an eighth-grade female student asked herself and tried to answer before sharing her thoughts with her classmates:

- Why do people exhibit such irrational behaviour toward wildlife?
- Is there something deeper in the human soul that could justify such behaviour?
- Does making a living justify the killing of so many fish?
- Is it reasonable to catch so many fish that you do not want (collateral damage) in order to feed 211 people with mahi-mahi?
- How could we fish more sustainably?

Of course, a silent dialogue with one's self is always an attempt to understand a situation, a problem, an issue or an idea. And, as such, the relationship between wonder and thinking should be recognised and acknowledged. The feeling of surprise, or even astonishment, one may experience upon reading about Callum Roberts' experiences, mingled with intellectual curiosity (i.e. a sense of

wonder), can become a motive for critical thinking, which is a prerequisite for some kind of socio-political action that may prevent such irresponsible fishing activities worldwide in the future.

10. Wonder can be experienced both at the beginning of inquiry and at the end of it

Indeed, a sense of wonder can be experienced (as Socratic aporia, that is, puzzlement and perplexity and awareness that one's knowledge is incomplete or mistaken) when one wonders about a problem or a situation in order to understand, and this can take place in the beginning of a teaching event. However, according to Richard Feynman (1969; 1989), wonder can be experienced even after one explores and inquires, that is, after one acquires knowledge about an entity or a phenomenon. It is in this sense that the wonder and the beauty of ideas comes as a reward of learning. Using as an example the liquid stacking experiment described earlier, the students were initially baffled and puzzled by the possibility of stacking liquids on top of one another and then became intellectually curious about how to do it. Once they understood that the experiment required liquids of various densities, and that the challenge was about a simple concept, namely, density, they were still able to wonder at their creation. The beauty of science was something that students sensed at the end of their investigation. And this beauty could be associated with both aesthetic perception (different layers of liquids with different colours) and the beauty of a scientific idea, namely the concept of density (even though here one needs to distinguish, in a Deweyan sense, between the concept of density and the idea of density, as a possibility, that is, how to use the idea of density to interact with the world). Whether or not some students experienced the first or the second kind of beauty, or both of them, is a matter that needs to be researched, but the point is that beauty and wonder, in the form of admiration, (i.e. admiration toward an artistic creation or science idea) can be experienced as the result or product of an investigation, and thus as the product of learning.

11. Knowledge about the object of wonder can enlarge the initial sense of wonder (or knowledge can add more wonder to one's sense of wonder)

Nobel Prize winner Richard Feynman has argued that knowledge of science can add to the beauty of a natural entity, like a flower. In associating the beauty in nature with the wonder evoked from the scientific ideas that explain its phenomena (i.e. natural and chemical processes) as well as from what is going on 'underneath the surface' of those phenomena, Feynman made a case for the role of knowledge in enlarging one's initial sense of wonder. His argument, in the case of a flower, is that a scientist can 'see more' than an artist, simply because: "There are all kinds of interesting questions that come from a knowledge of science, which only adds to the excitement and mystery and awe of a flower. It only adds." (Feynman 1989, 11). Of course, there are students who may not find beauty at all in the processes taking place at a molecular level. But there are also some who may.

However, many ordinary people who see the Colosseum in Rome for the first time will most likely feel a sense of wonder at the sight of its massive and sturdy structure. And they may also wonder at the fact that it has survived earthquakes, fires and looting in the course of history. This sense of wonder has nothing to do with the Colosseum's artistic beauty, though it may also be understood by people like engineers and architects who are hard-wired to appreciate architectural and compositional features, such as the proportions and symmetry of the arches, arcades and columns. But when an ordinary person looks closely at the details of the columns, and becomes aware that all three ancient Greek architectural orders (i.e., Doric, Ionic, Corinthian) have been included, his or her sense of wonder deepens. This is something I personally felt when I visited the Colosseum for the second time. And, of course, my sense of wonder at and about it was much deeper compared to the first time I visited it. Both the example of the liquid stacking experiment and the empirical evidence with students of various ages seem to support the claim that knowledge (of details) adds to one's initial sense of wonder (e.g. Hadzigeorgiou 2010; Hadzigeorgiou and Garganourakis 2010).

12. Wonder involves a 'felt awareness'

The British philosopher and mathematician Alfred North Whitehead (1985) proposed that the educational process can be conceived as a process consisting of three separate stages: the stage of romance, the

stage of precision and the stage of generalisation. This can be interpreted in a number of ways as regards its implications for the learning process. However, what is clear from what Whitehead said is that students, before they study something with precision and before they are ready to make generalisations, have to develop a romantic relationship with their object of study. At the stage of romance there is a feeling of "excitement consequent on the transition from the bare facts to the first realization of the import of their unexplored relationship", and also a realisation of "unexplored connexions with possibilities half-disclosed by glimpses and half-concealed by the wealth of material" (Whitehead 1985, 17-18).

Whitehead's notion of the stage of romance can be illustrated by Carl Sagan himself. Sagan, as a young child living in New York, experienced a sense of wonder which was associated first with the awareness that stars were that aspect of his environment that was different from all the rest – something that also made him wonder about their nature – and second with the awareness that they (stars) were suns, just like ours, and very far away. His comments on that kind of awareness are quite instructive and worth quoting:

> It was in there. It was stunning. The answer was that the Sun was a star, except very far away. The stars were suns; if you were close to them, they would look just like our sun. I tried to imagine how far away from the Sun you'd have to be for it to be as dim as a star. Of course I didn't know the inverse square law of light propagation; I hadn't a ghost of a chance of figuring it out. But it was clear to me that you'd have to be very far away. Farther away, probably, than New Jersey. The dazzling idea of a universe vast beyond imagining swept over me. It has stayed with me ever since (...) I sensed awe. And later on (it took me several years to find this), I realized that we were on a planet – a little, non-self-luminous world going around our star. And so all those other stars might have planets going around them. If planets, then life, intelligence, other Brooklyns – who knew? The diversity of those possible worlds struck me. They didn't have to be exactly like ours, I was sure of it. (Sagan 1995, 25)

However, empirical evidence has shown that students themselves can sense and express their awareness of what they are learning (Hadzigeorgiou 2012):

> *That all the subatomic particles contained in the bodies of all people on earth, if we could remove all empty space from their bodies, could pack easily into a ping-pong ball is astonishing. In reality we are all empty space!!*

Although I knew that gravity was the weakest of all forces and I could see that in the numbers on that table about the relative strength of all forces in nature, it was after that simple and very easy-to-do experiment that I understood it better.

I knew that molecules are very-very small. But it was after calculating the number of molecules contained in a glass of water that I really understood how tiny they really are (...). Now I can say that I understand all about Avogadro's number.

The empirical evidence, as regards the experience of wonder, shows that not only Socratic 'aporia' (i.e. awareness of one's lack of knowledge, or of mistaken ideas) but also various kinds of awareness can be experienced by students: awareness that some phenomena exist at all, awareness that there is a connection between seemingly unconnected phenomena and ideas, awareness of mystery, awareness of beauty. However, what deserves to be pointed out is that wonder makes one aware of the significance of things. If wonder can make the ordinary and familiar look extraordinary, it can make the insignificant look significant (just like the heroic journey of something insignificant, like a broken Styrofoam cup, can make it look significant). And here one needs to recognise the power of wonder in the context of educational theory, which poses two fundamental questions: What is meaningful? What is significant? (Hadzigeorgiou 2005b).

13. Wonder fosters a change of outlook

The view that significant learning is always linked to a change of outlook has been defended by both philosophers and educators (e.g., Hirst 1998; Peters 1973; Jardine et al. 2003; Schank 2004). But what is 'significant learning'? Many would agree that it is learning that persists beyond the time at which the acquisition of knowledge and skills is certified (i.e. by taking a test), and learning that is valued and is used in out-of-school contexts. In short, learning that is transformative (e.g., Hadzigeorgiou 2016; Pugh 2004; Pugh, Bergstrom, and Spencer, 2017). This kind of learning is not merely a hoped-for goal, but, as empirical evidence suggests, an actual possibility. However, the empirical evidence, specifically with regard to the role of wonder in making students see things differently, is quite interesting (Hadzigeorgiou 2010; 2012; Hadzigeorgiou et al. 2011):

The fact that there can be straight line motion at extremely high speeds in the absence of a net force makes you see motion as mysterious a phenomenon as electricity and magnetism.

Ever since I learned about matter being 99% empty space I see solids and liquids as empty space with some protons and electrons in it. If I think about it, every time I drink water, I think I drink nothing, except for a few protons and electrons.

Matter, what a strange concept!! Everything around me looks different if I really think about it. For we all touch, see, eat and drink vacuum.

Trees can do useful things for us without cutting them (...) this is important because after some time there will be no trees. So we must see trees as we see people, not like pieces of wood that we cut in order to use.

Now that I learned how important trees are for protecting people from many things I will try to protect trees as much as I can. I cannot think that a tree is like any kind of object. It is a special object. It is like a human being that understands things, as if it has a brain, so they can understand, they know, that people need help, and when there is a need for help it will help us.

If trees can save people like me from floods and can also protect people from very strong winds, then trees are like silent guards (and they do not cost anything).

The evidence cited above shows that wonder, once it is evoked – and regardless of the guise it takes on (e.g., aporia, bewilderment, surprise, astonishment, perplexity, admiration) – results in a change of perception. The awareness that accompanies wonder makes one see more and thus see differently. When a young girl experienced a sense of wonder about trees (see quotation above), after she learned some surprising and unexpected facts about them, she thought that trees are like human beings with a brain. Such a change in her perception of trees was the result of her experience of wonder, which had its source in her awareness that trees can indeed protect us and save us from many things (e.g., flood, wind, hot weather).

14. Wonder has important implications for instructional practices

The implications of the notion of wonder, although not characteristics of wonder, are part and parcel of it in the sense that they blend with, and simultaneously emerge from, what has been discussed thus far. Thus, I choose to discuss them briefly along with all the characteristics of wonder. Even though the most important implication of the notion of wonder for instruction is to turn to phenomenological and aesthetic perspectives (i.e. the very notion of wonder necessitates alternative approaches to the teaching/learning process), there are some specific implications worth considering:

- Starting with the 'richness' of an object or phenomenon (e.g., a tree leaf, a waterfall, a rainbow, a flash of lightning) through attentive observation (i.e. involving all senses) and 'letting them speak to us' (i.e. moving away from cognitivism);
- Providing opportunities for 'aesthetic experiences' (i.e. experiences characterised by flow, unity, fulfilment) as well as for the inclusion and infusion of the arts in all curricular subjects;
- Making students sense 'aporias' (i.e., knowledge gaps);
- Considering A.N. Whitehead's notion of a 'stage of romance';
- Considering Kieran Egan's notion of 'romantic understanding';
- Considering the importance not only of understanding ideas but also of being inspired by them;
- Reclaiming the value of questions and questioning in the classroom.

Final Comments

The power of wonder, at least for those who have experienced it, is indisputable. It is a motive for exploration, an awareness of the significance of things, an intellectual satisfaction, a reward for what one has learned and knows. Two decades ago I had argued that, in the context of science education, the experiences of mystery and wonder, perhaps more than any other kind of experience (e.g. conceptual change) can provide sources of intellectual curiosity and engagement for most students (Hadzigeorgiou 1999), which is, of course, a prerequisite for learning any school subject. One could very well say that this is just wishful thinking. And it is true that the evidence from the few empirical studies that have been cited here are not enough to inform educational policy. But, at the same time, who could argue against the power of wonder to engage the minds and the hearts of the students? Who could deny the fact that most,

if not all, students wonder and become curious and engaged in order to understand how it is possible for them to relive their birthday in the same year (i.e. to celebrate it twice)? How can this really be possible in the first place? And who could argue against the fact that their initial sense of wonder does not diminish at all, even when they discover that they can celebrate their birthday twice by just crossing the International Date Line somewhere in the Pacific?

Making schools places of wonder may seem a far-fetched idea, but it is time we gave it some serious thought. The educational benefits of wonder, according to what was discussed here, are many, even though wonder cannot – and should not – be seen as a panacea. But the role of wonder – especially if it has its source in the deep mysteries of life and the universe, in making us aware of the limits of our own understanding (Schinkel 2017) is something that needs to be more seriously considered in the context of contemporary education. For it can help cultivate a mindset of intellectual humility, which provides the basis for a willingness to listen to all the voices involved in a dialogue and to consider the possibility that one's own beliefs (e.g. religious, moral, political) might be mistaken. Thus, the role of wonder in promoting the notion of 'democratic dialogue' needs to be recognised. Moreover, and perhaps most importantly, the role of wonder as a source of meaning in life (Schinkel 2019) also needs to be considered. It would be a terrible mistake on the part of educationalists to consider the design and the implementation of activities for engaging the students' minds in the absence of meaning. What Nobel Laureate in physics Richard Feynman wrote in an attempt to make sense of his situation and his place as a human being in this universe should be a reminder of the value of wonder in education and in life in general (see Feynman 2015 for the whole poem):

> I stand at the seashore alone and start to think.
> There are rushing waves, mountains of molecules,
> Each stupidly minding its own business.
> Trillions apart, yet forming white surf in unison.
>
> Ages on ages before any eyes could see
> Year after year, thunderously pounding the shore as now.
> For whom for what?
> On a dead planet with no life to entertain.
>
> Out of the cradle onto dry land, here it is standing,
> Atoms with consciousness, matter with curiosity,
> Stands at the sea, wonders at wondering,
> I, a universe of atoms, an atom in the universe.

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9 Pathways to Wonder-Infused Practice: Investigating the Transition from Pre-Service to In-Service Teacher

Andrew Gilbert

> *It seems to me that some of us value information over wonder, and noise over silence. And I feel that we need a lot more wonder and a lot more silence in our lives.* (Rogers *1994*)

Introduction

Fred Rogers, who spread kindness and understanding through his remarkable vision regarding the wisdom and goodness of children, reminds us that the child's world is inundated with information through the stunning pace of modern life. In the years since he spoke these words, it seems that life is simply accelerating with little sign of slowing down. Schools invariably get caught in this trap of modern times with standards documents, neoliberal visions of schooling, success measured only by test scores, and other means of commodification of learning (Au and Ferrare 2015, 6). The pace and demands of modern life, "[do] not allow us to fully exist and the power of slowing down provides opportunities for our human connection to the natural world and to one another" (Cant 2014, 169). The question facing educators is: how do we shelter our pedagogical practices from allowing these demands of the modern world to negatively impact the children in our classrooms?

It is important to remember that educators can find ways to practise agency within their classroom practices. The key is not more of the mind-numbing pedagogy that has dulled children's desire to learn, but reconnecting them to the things that drive their learning (Gilbert and Gray 2019, 112). The goal is beyond memorisation and lower-level thinking toward our proclivity as

humans to better understand the natural and cultural world and our place within it. There exists a power that lies within the individual for creating their own meanings and connections to the world because there exists a 'genetically motivated process of learning' (Cobb 1977, 18) that impacts people in a far more meaningful fashion than memorising someone else's interpretation of that world.

This chapter hypothesises that the utilisation of wonder and wonder-based pedagogical approaches is one means to connect learners to content by engaging their emotions and desires to learn. The power of these connections to the emotive is that it links actions to an aesthetic experience where "education is not where everything is fully predictable or, on the other extreme, left for students to decide and discover on their own, but where transactions progressively occur that bring growth to students' efforts (...)" (Wickman 2006, 149). These aesthetic connections to content can trigger an intrinsic desire to engage with school content. This process is transactional, as it moves beyond simply trying to pour facts into children or conversely an approach that expects children to build completely on their own, but rather one where the teacher designs experiences connected to beauty and emotion. Ultimately, this chapter will address the question raised by Di Paolantonio (2018, 1), who asked, "Can wonder – as that sense which throws us and spurs us towards sensing and thinking without closure – help us to overcome the thoughtlessness that dulls our attention to what we do to each other through education?" (See also Di Paolantonio 2019, 213-214.)

This chapter explicates the journey taken by two beginning teachers from their graduate teacher education programme across student teaching experience and into their first year in the classroom. The goal of this instrumental case study is to articulate how engaging with wonder and wonder-infused pedagogy might impact those developing teachers' notions of what is possible in their classroom practice and how those conceptions were shaped, if at all, by their experiences with wonder. The following chapter will lay out several key theoretical positionings and related research regarding wonder in school contexts, including value to education and classrooms, wonder across key content areas, and the practical and philosophical connections to teacher education. This is followed by a contextualisation for the study using multiple data artifacts from two beginning teachers that span across their graduate teacher preparation programme into their first year of practice. Based on this foundation for wonder in classroom contexts, this study set out to better understand what happens as teachers make the leap from a programme steeped in wonder-infused approaches (Gilbert and Byers 2020) into their professional practice. Often this boundary is under-studied in terms of what future teachers both

retain and enact as they enter professional classrooms. The main research questions included: 1) How do these teachers describe their experiences with wonder, and what elements of wonder-infused pedagogy were reflected in their teaching? 2) What were the barriers and supports beginning teachers envisioned as they considered enacting these classroom approaches?

REVIEW OF LITERATURE

The value of wonder

> ... by awakening the mind's attention from the lethargy of custom, and directing it to the loveliness and the wonders of the world before us; an inexhaustible treasure, but for which, in consequence of the film of familiarity and selfish solicitude we have eyes, yet see not, ears that hear not, and hearts that neither feel nor understand. (Coleridge 1817, 208)

Over 100 years after Coleridge wrote these words, we can still apply them directly to the scene in the average public-school classroom where experiences often fall into the 'lethargy of custom' and are not typically directed toward the 'loveliness and wonders of the world'. Egan (2014, 191) argues that educators should help students engage with their surroundings – even in the ordinary everyday phenomena that are rarely contemplated. There exists a need to develop frameworks that facilitate pre-service teachers to engage with their own wonders and consider how to develop pedagogy steeped in wonder for their future classrooms. Wonder is often viewed as solely the domain of the child, but engaging with wonders and wondrous thinking with older students and adults is of supreme importance (Takaya 2014, 99) because they have been dulled by the 'lethargy of custom'. We must rekindle those wondrous moments in the adults if we ever hope for them to bring wondrous moments into classroom contexts.

I am reminded of the words of environmentalist Rachel Carson, who depicted the urgency and importance of wonder in the lives of children and most importantly the adults' role within helping children make sense of their wonderings:

> If a child is to keep alive their inborn sense of wonder... he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement and mystery of the world we live in. (Carson 1965, 55)

Interestingly, Carson contends that wonder and wondering are not simple individual or internal conditions; rather they are to be shared, a communal engagement. Wonder is a powerful 're-connecter in our lives' (Haralambous and Nielsen 2014, 234), which seeks to open experiences and reflections that facilitate discoveries, not through some fanciful or supernatural way, but through a disciplined pathway of inquiry inspired by our human way of interacting with the world. Munns (2007, 304) argued for the restorative power that wonder can bring to underserved school populations by building classroom communities and student engagement through the rewiring of classroom discursive structures. Despite these possibilities that wonder brings to education, wonder itself is 'virtually non-existent in curricular documents across the world' (Cant 2014, 163). This brings us to how wonder might be operationalised in classroom contexts, and considering particular possibilities across the curriculum. As such, the following sections highlight aspects of wonder related to science, social studies and teacher education in an effort to ground the experiences and actions of the participants as they transitioned from pre-service to in-service teacher.

Wonder in the classroom

Science: a special connection to wonder and wondering

Scientists, throughout time, have referred to the affective links between science and wonder as a means of inspiration toward discovery and also directly linked to the process and essence of science itself. The concept of *wonder* and the *unknown* is an integral element of scientific thinking and being – a powerful driving force leading them deeper into this exploration of the unknown (Cox 2011, 5). Cox describes the joy involved in the learning of science where the mystery drives the thinking, knowing and learning as they move toward the unanswered and vexing questions. Often teachers (and future teachers) have slowly had this joy of learning and teaching eroded by mind-numbing numbers of standardised assessments and packaged curricula that further deprofessionalise their approach. These practices can also be policed in ways that drive teachers to fear of engaging in practices that might seem outside of the expected, packaged, and/or scripted curricular approaches. It should be noted that these types of curricular approaches and the prevalence of memorisation of disconnected facts tends to dominate many public-school science classrooms across the world. Teachers' pedagogical work can often be impacted by their hopes and fears, but fear is a constant driver for teacher decision-making (Shoyer and Leshem 2016, 3; Palmer 1998, 57). This is reiterated in others

working to bring critical and engaging approaches into classrooms where institutions are working to exert control on teachers through neoliberal structures that wish to turn schools and children into commodities (Gilbert 2013, 6). This can have serious implications for the types of pedagogy that teachers engage in and consequently limit pedagogical risk-taking. This type of pedagogy tends to push teachers away from complex, critical-thinking, inquiry-based approaches, which limits opportunities for children and teachers. This ultimately drives students and teachers further away from how advances are made in areas such as science or social studies and further away from what drives us as humans.

Kerns (2015, 99) reminds us for the power of viewing our everyday existence through a lens of wonder: "As subjects of wonder, we could allow that there is always more to be surprised by, admire, feel, know, doubt, puzzle". This research worked to engage future teachers as 'subjects of wonder' and to study if that wondrous engagement might drive them to enact processes related to wonder in the classroom. There have been recent improvements in building interest with future educators by connecting them to the affective aspects of learning in science. These approaches include: the role of emotion in science learning (Jaber and Hammer 2016, 190); wonder as a means to inspire student content learning and teacher self-reflection (Sezen-Barrie, Miller-Rushing and Hufnagel, 2019, 3); wonder as central to science pedagogy (Takaya 2014, 100); the role of curiosity in the process of science (Lindholm 2018, 987; Luce and Hsi 2015, 93); wonder as a means to evoke emotive connections to content (Hadzigeorgiou 2016, 132) and aesthetic experiences as a driver for learning (Milne 2018, 49). It is important to clarify here that wonder is not confined solely to science contexts as it also provides some promising possibilities in other areas of the curriculum.

Pedagogical possibilities for social studies

One of the areas where wonder and emotional engagement with content is beginning to make impacts is associated with social studies education. These emotive connections include a range of approaches including notions of play, empathy, perspective taking and wondering itself. It is important to note that social studies in elementary contexts is facing similar challenges that are also faced in the sciences. Most notably, social studies often lose out on instructional time as compared to literacy and math instruction.

> As time and space for social studies content in elementary classrooms continues to be pushed to the side and reduced to arbitrary tidbits of information, elementary preparation programs face the urgent challenge of

> sharing strategies with preservice teachers that will strengthen social studies content knowledge, so they may gain the confidence needed to integrate social studies in meaningful ways each day in their classrooms. (Alarcon, Holmes, and Bybee 2015, 186)

The authors further argued that the role of social studies in the elementary grades should be designed to get children thinking like historians where children work to build and share narratives as a means to challenge myths and investigate historical topics (ibid., 186). Others have suggested that we can bring life into the social studies curriculum through play that allows children to connect with and take on new identities (Chappell 2010, 1), which can facilitate students seeing the complexity of the world and the people acting in it. This has direct parallels with the goals for science to get children to engage in the processes of science itself. Similar to elementary science, social studies contexts also suffer from pedagogical approaches that work to have children memorise disconnected facts. This works to take the life out of history and politics that could be full of connections to emotion, including joy and sorrow. Helmsing contemplated the possibilities regarding a 'reanimated social studies' that creates "curricular engagement with perceiving the world rather than merely viewing it, memorizing it, in a passive state of spectatorship" (2016, 137). Helmsing continues: "Social studies education, and much of what takes place in the name of schooling and formal education, diminishes the purchase of wonder through modes of disenchantment, ignoring and discouraging" direct connections to the world around us (2016, 142). He consequently advocated for educators to endeavour to "rediscover a sense of wonder in everyday life" (ibid., 142) as a means to rewire how children and teachers are able to make sense of history, politics and the social studies that are embodied in the present day.

Wonder in teacher education: Potential and possibilities

There has been a growing awareness and effort to understand how engagement with wonder can impact burgeoning teacher practices. In one of the few studies directed at pre-service teachers and wonder, Gilbert and Byers (2017, 911) argued that *wonder-infused pedagogy* impacted future elementary teachers' vision of both science content and science teaching by directly connecting science content to aesthetics and emotion. They argued that ultimately engagement with wonder positively altered future teachers' conceptions of science, which created more openness to science content and desire to teach it in their future practice (ibid., 924). This is a direct impetus for this current project, namely to look closely at how beginning teachers develop interest in wonder-infused approaches. Furthermore, how do those future teachers construct and enact

wonder-related inquiry? And lastly, do those approaches translate into classroom teaching practice when they enter the professional classroom setting?

The framing of wonder-infused pedagogy was heavily influenced by philosophers wrestling with conceptions of wonder. Wonder is not simply confined to a single well-defined entity, but rather should be considered as a 'family of experiences' (Schinkel 2017, 541). Schinkel also argued for two types of wonder that are important in educational contexts: *active* and *deep* wonder. Active wonder involves a "drive to explore and a desire to know (...) something that causes amazement or puzzlement" (Schinkel 2017, 543). Deep wonder, in contrast, is a contemplative act where, "we sense the utter mysteriousness of whatever we are contemplating; it is an experience that leaves us lost for words (...) opening up to the mystery one senses" (ibid., 544). Schinkel's distinction provides a vision for how I approached the utilisation of wonder in this work. Active wonder was an entry point for inquiry with pre-service teachers and offered a means of entry into science content thinking. Deep wonder, however, was more closely aligned with the descriptions of inspiration and connection to the natural world espoused by many successful scientists. However, deep wonder has not been considered particularly important in most school contexts because of the difficulty to quantify wondrous notions that are involved in moments of appreciation or feelings of inspiration, beauty or awe (Schinkel 2017, 540).

This is similar to Vasalou's contention that wonder was "valuable as its capacity to stimulate inquiry and lead us to an understanding of things we had previously not held in our grasp" (2015, 6), while simultaneously warning against framing wonder solely in its value toward devising explanations for phenomena. In the case of this research project, one of the goals was merely to get participants to engage with their thoughts as a means to bring their wonders out in the open regardless of whether those wonders led directly to answers. For instance, scientists remain interested in the questions they cannot answer, not solely in the questions they have solved. It is this spirit that I have tried to incorporate in my practice and instil in my future teachers, wonder is not about finding answers or truth, but rather comes from the realisation of not knowing. "It is frequently forgotten that wonder arises not from ignorance but from consciousness of ignorance" (Quinn 2002, 19). Wonder in this study worked to help future teachers see not only what they did not understand, but to facilitate them in finding interest to think about those vexations. The goal was to "elevate the position of wonder, of the imagination, not as an experience, sentiment, or feeling that needs to cease or be replaced with knowledge, but as a valid part of our knowledge experiences" (Kearns 2015, 117).

Enacting an instrumental case study

This study closely followed two pre-service teachers from their coursework, internships in schools, student teaching and into their first year in the public-school primary classroom. This longitudinal qualitative study is best described as an instrumental case study (Stake 2000, 5). Instrumental case study differs from the traditional notion of case study research because the questions of the researcher are paramount as opposed to the case itself. Consequently, this research method was chosen because of the condition where, "we have a research question, a puzzlement, a need for general understanding, and feel that we may get insight into the question by studying a particular case" (Stake 1995, 3). The project was designed to best understand how wonder pedagogy is developed and enacted by new teachers, and necessitated framing the questions and approach up front as opposed to seeing what would emerge from random cases where the design was, "defined by an analytic focus on an individual event, activity, episode, or other specific phenomena, not necessarily by the methods used for investigation" (Schram 2006, 106). The main value of utilising this approach was to study the complex situations that impacted the participants' thinking toward engagement with wonder and illuminate what could be learned from these two individual cases (Flyvbjerg 2006, 221). Case study research allows for the methodological freedom (Stake 1995, 445) to utilise ethnographic data collection and analysis that were most appropriate for the questions that were investigated within this project.

Context and participants

These case studies took place across eighteen months, which included the students' final year in the programme and six months after graduation. The programme itself is a post-graduate masters' programme housed in a large mid-Atlantic university in the United States. The programme also boasts a strong school university partnership structure that affords future teachers with multiple opportunities to teach in public schools during their time in the programme. This includes coursework embedded in schools from the first semester onwards, teaching practicum placements and a student teaching internship experience (that ranges from one semester to a year depending on programme cohort). This provides all pre-service teachers with multiple opportunities to engage with teaching in public school contexts throughout the programme.

The two pre-service teachers were purposefully chosen because they had demonstrated an interest in wonder frameworks during their graduate programme and more specifically designed capstone action research projects that endeavoured to bring wonder into their student teaching experience. In addition, they were familiar with research into wonder frameworks as part of building the conceptual frameworks for their action research approach. The researcher assumption here was that if any future teachers were going to attempt bringing wonder into their future professional classrooms, it would be ones that were compelled enough to utilise it in their coursework and study it during student teaching. This would provide an excellent lens to view potential issues and/or successes concerning future teachers' designed approaches steeped in wonder.

This study investigated the two cases of Otis and Anne (pseudonyms) and documents their journeys as they take the leap from programme to practice in terms of developing wonder approaches. *Otis* is a white, male student in his early twenties that has an infectious energy and is well-liked across the programme for his open and kind demeanour. Children in classrooms also react well to even tempered kindness. *Anne* is a white female student also in her early twenties. She carries a similar energy of enthusiasm and positivity that endear her to students in her class and her colleagues in the programme. They completed the programme, received their initial licensure for primary classrooms and are now employed in a local school district.

Data gathering

In order to best understand Anne and Otis' teacher experiences, key data artifacts were collected that gave insights into their thinking and actions surrounding wonder and wonder-infused pedagogical approaches. The programme structure itself allowed for developing insight into pre-service teachers' work in the classroom over the course of the programme before they moved to student teaching and graduation. These included reflecting on video analysis of their classroom teaching, individual interviews (during student teaching and first year in the classroom), wonder journals, action-research wonder projects and email communications. The reasoning for focusing on these particular tasks was because they were best suited to demonstrate insights directly into how these teachers were conceptualising inquiry-based approaches and how those were influenced or hindered through the use of wonder.

Data analysis

Once the interviews were completed, they were listened to in totality before being transcribed by the researcher. This was an effort for the investigator to become familiar with the data. The transcript data were coded using online

qualitative analysis tool Dedoose© to organise and analyse all aspects of the data set. In an effort to build credibility, data sets were subjected to a thorough coding process where preliminary emergent themes were identified and, using iterative complete readings of data, were combined to build more robust themes (Miles and Huberman 1994) and those were member checked with participants to add credibility (Merriam and Tisdell 2016, 240). This process continued as the researcher worked through a constant comparative approach where, "as an incident is noted, it should be compared against other incidents for similarities and differences" (Corbin and Strauss 1998, 9). These efforts were predicated on Holliday's 'principle of emergence' (2007, 93), where the entire data set is viewed thematically and changed and evolved as part of the emergent process. As an example for this process, consider the following example from the data analysis process from Otis describing his current social studies practice.

> It's made a difference so far in their interest of things. Like this ancient Egypt unit took place right after ancient China. They seemed to care about this a lot more than they did about China. I had either two or three kids check out books about ancient Egypt from the library when we went last week, which I didn't see them do for China. They were just interested in finding out more.

This excerpt was originally placed in a global category titled 'Wonder in practice'; however, this category remained too broad and needed greater specificity and was therefore broken into three separate themes that better matched the elements arising from the analysis. These new areas were titled: 1) Reasons for incorporating wonder; 2) Implementation and reflection on practice; and 3) Reflection on student impacts. These new categories were member checked with participants either in person or through email communication throughout the project analysis. This particular excerpt was ultimately placed within the last category of 'Reflection on student impacts'. Consequently, the original theme of 'Wonder in practice' was subsumed into these more refined categories. All themes were open for interpretation and each represented a consensus of opinion, between the participants and myself, which was based upon evidence within the data set.

FINDINGS AND DISCUSSION

These findings represent how two beginning teachers navigated the terrain of engaging with their wonder experiences during their teacher preparation programme and how those experiences impacted the nature of their developing classroom practices, particularly to better understand the successes and challenges of enacting wonder in their teaching. The findings are organised around the main research questions: 1) How do these teachers describe their experiences with wonder, and what elements of wonder-infused pedagogy were reflected in their teaching? 2) What were the barriers and supports beginning teachers envisioned as they considered enacting these classroom approaches?

RQ 1: How do these teachers describe their experiences with wonder, and what elements of wonder-infused pedagogy were reflected in their teaching?

Experiences with wonder

The pre-service teachers enrolled in the programme had many opportunities to engage with wonder and wonder-infused pedagogy throughout their time in the programme. This is mainly from their work in science methods that is steeped in these approaches (see Gilbert and Byers 2020 for a detailed description of programme pedagogy). In the following excerpt from an initial interview with Anne, she describes how the process and engagement with wondering did not come easily but resonated quickly with her.

> I think I was confused at first about how I was supposed to do this and implement it with science. Then as you shared more examples and stuff about it, I was like, oh, this is actually really cool. Getting away from using our phones and technology constantly, and just being outdoors and sitting there, and just hearing what you hear, seeing what you see, smelling what you smell. All of that, and just using your senses, I thought would be just very calming.

She describes the slowing down in order to understand the world around her and how that ultimately was calming during what can be an extremely challenging graduate programme. In a follow-up interview during her first-year teaching Anne articulates that these ideas and wonder experiences are still part of her thinking from time to time.

> I do wonder a lot of things. Sometimes I feel stupid for thinking some of the stuff that I think, but then it's really not. It's not stupid to think those things, so why is the sky really blue? Things that as kids we were told, "That's a stupid question. Why would you ask that? It just is." It's, no, what's the actual science behind why the sky's blue?

What is essential here is that she articulates that her thoughts do have value. Far too often children's ideas are not taken seriously. And in the case of adults, particularly primary teachers, they can devalue their own thoughts in areas that they do not feel confident (Gilbert 2013, 18). This valuing of thoughts and wonder experiences is an essential notion if we wish for teachers to make emotional connections to content.

Otis' experience with science echoes the typical approach that has worked to sap students' interest and curiosities regarding science content as students endure behaviourist approaches that are focused on memorisation. This is described in his initial interview during his student teaching semester.

> I remembered science being taught to me in elementary school as very by the book. Every once in a while you get some hands-on experiment and whatever, but it wasn't really anything that caused me to think too critically or deeply... So, over the summer when I kind of got to thinking that I love doing my wonder journals, I would think about whatever questions I had, and I had a lot of fun just making them kind of creative and colourful, and really just thinking about all these questions that I have and I just realised they didn't have answers to, and kind of practising those inquiry skills.

Otis described that he 'loved doing wonder journals' during his summer science methods course and this emotive connection to content paved the way for considering the pedagogical possibilities he envisioned in his practice. The positive emotions and connections to their engagement allowed for both Anne and Otis to venture into scientific thinking in a low-stakes environment and remind them they had interests related to science content. This helped them begin conceptualising how they might implement wonder-infused approaches in their teaching contexts.

Reasons for incorporating wonder

The experiences with wonder and conceptualising wonder in practice were not solely the exclusive terrain of the science methods course; rather there existed multiple opportunities for future teachers to think about wonder in the classroom context. For instance, in one of the required Literacy courses pre-service

teachers read and enact ideas from the text titled: *A place for wonder: Reading and writing nonfiction in the primary grades* (Heard and McDonough 2008). This text highlights multiple approaches that wonder can be utilised within the teaching of non-fiction. Anne highlights the impact of the text on her thinking for incorporating wonder in her student teaching placement.

> I read about the wonder wall in Dr. Ripley's class. It was really cool how this teacher was explaining how she implemented wonder into the class. She did various things, but one of the things was a wonder wall. I was like, that is really cool.

She was impacted by this approach enough to try it in her capstone Action Research (AR) course. In the written report of her project she stated her reasoning for tackling wonder: "I became really motivated to try to implement this in my own classroom, but rather than waiting for my future classroom, I found that now was the perfect time to test this concept out in a classroom setting." So rather than wait until she exited the programme, Anne set out to work toward bringing wonder into her practicum placement and her student teaching assignment.

Otis also carried out a wonder-related project in his AR course and he describes how this drove his desire to incorporate wonder into his classroom practice during an interview in his first year as a professional teacher.

> I knew that from my action research project I wanted to help them get more interested in science and social studies. Social studies especially, because I noticed that they just didn't really seem to care. I did an interest survey with them about how they felt about those subjects, and it was like rate it on a scale of one to five, and the vast majority of the responses for social studies were three or below, meaning they were either meh or just not interested at all.

The interesting aspect here is that his own joyful experiences with wonder served as the catalyst for him to envision wonder-infused approaches as a viable means to build interest in content for the children in his classroom. This harkens back to how many professional scientists (Cox, Carson, etc.) articulated the joy of wondering about the issues that vex us.

Implementation and reflection on practice

When pre-service teachers are placed in schools for practicum experiences and/or student teaching, it is often a time when they are more concerned simply with

not making waves or following the lead of the classroom teacher as opposed to taking pedagogical risks. Interestingly, though, Otis began incorporating wonder soon after it was introduced to him during his practicum placement in a fourth-grade classroom. Both he and Anne incorporated wonder approaches during their student teaching as part of their capstone research experience.

Anne constructed her approach mainly as a means to engage her children in research projects to find definitive answers. She described using a 'wonder wall' and 'wonder of the week' to stimulate question gathering from her students. She provided some detail for her approach during a follow up interview.

> They could get a sticky note and put it on the wonder wall. There was some really cool stuff that they came up with and questions. Some of them were silly, or some of them were unanswerable... The first week, me and my mentor teacher went through them and we picked out five or six wonders for the groups to choose from... I already had assigned groups so that way there was a balance of students in those groups.

The goal for her through this wonder project was to engage students in literacy standards related to carrying out research including library and Internet searches. She does this by tightly bounding the possibilities for students to limit the complexity that students might face with many of the wonders posted by their classmates. After she and her mentor teacher chose the questions, the groups then decided what question they wished to pursue for researching and presentation of findings. Interestingly, Anne makes mention of some of the student disenchantment when it came to giving the formal presentation in her written action research report: "I was surprised with how much they enjoyed the wonder wall project. While doing it, some of them did not seem to enjoy making the presentations." This reaction is not surprising given that it is often the feral nature of thought that wonder engenders that students enjoy (Gilbert and Gray 2019, 110) and once the structure of schooling and the notion that value is only attributed to finding the answer are associated with curricular standards then student interest can wane (Milne 2018, 49). This might provide some insight for Anne's subdued description for the student reactions regarding the presentations.

Otis also utilised wonder approaches for his AR course project. Prior to that, he also developed and taught an inquiry unit, steeped in wonder, as part of his integrated mathematics and science methods course that was embedded in a local primary school. He, along with his teaching partner, devised a three-lesson experience that was designed to provide experiences that might evoke

wonders in terms of static electricity with grade four students. In his opening lesson, Otis described the initial activities:

> The students got to see and wonder about how a piece of wool made Rice Krispies cereal jump around in the air. They got to try to make a can of soda move by only using a balloon and a piece of wool, without touching the can. Then, they were tasked with making an invention that uses static electricity properties. What ensued was three days of learning, observing, wondering and sparking curiosity.

In the images below you can see that the engagement level is high as children observe the phenomena of static electricity and make observations for the proportion of Rice Krispies that were picked up by the charged balloon.

Fig. 9.1 Otis working to evoke wonder in children through engagement with static electricity

This approach works to evoke wonder using a surprising event that is also directly connected to the content of both science and mathematics (Hadzigeorgiou 2012, 987).

After the conclusion of the initial testing the students' observations were compiled using a See, Think, Wonder chart that provided the teachers with some real-time formative assessment of student thinking. These insights helped to frame how the teachers proceeded to the next portion of the lesson. Otis and his teaching partner were most interested in getting their children to think deeply regarding what they were seeing.

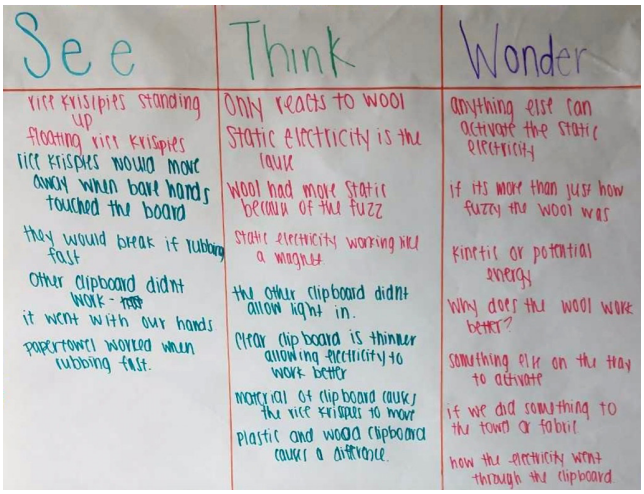

Fig. 9.2 Student responses on *See, Think, Wonder* chart depicts depth of thinking and engagement with topic

As part of a written reflection, crafted from video analysis of this unit, Otis remarked:

> The more students thought outside of the box, the more encouraged we became: *They were thinking*. This was all a part of our process. Students getting to jump to different conclusions and then explain their reasoning allowed us to redirect their energy towards our objective...

The enthusiasm is clear in his remarks, as he observes the excitement during the video. The wondering becomes the currency to help him scaffold student understanding toward static electricity. Wonder is not a silver bullet, but Otis saw it as a motivator for children and a pedagogical device to continually redirect children's thinking toward the curricular goals. This practicum experience was the platform for which Otis set out to construct wonder as a tool in his student teaching placement.

Reflections on student impacts

The data included in this section comes from action research projects during the participants' student teaching experience. Anne's project focused on research using a wonder wall, where children placed their written wonder/questions on a classroom wall that ultimately became the basis for class research topics. Otis' project tackled the utilisation of wonder journaling strategies where children did free writing in their journals regarding their wonderings on ancient

Egypt based on photo prompts provided to children. Anne's project was based in literacy standards regarding research and Otis' project was focused directly on social studies.

Anne described the impact of her approach and despite her efforts to keep children focused on answerable questions they persisted to push boundaries and consider questions and wonders without clear-cut answers.

> I think it is coming from different things that they did wonder about and didn't get answered. A lot of them did come up with though during history when we were doing the Revolutionary War, I think is what we were talking about, some of the questions they came up with on the wonder wall were what if our country didn't have this? What if we were still under British rule? Stuff like that.

This harkens back to Vasalou's (2015, 6) question that asks: is wonder solely a means to explain or is it something for us to enjoy? It seems that children were less concerned with finding the answers to their wonders, rather it was the wondering itself that was the joy for them. This also provides support for Schinkel's (2017) claim that the notion of 'deep wonder' has profound possibilities for educational contexts. Another interesting aspect of this approach is how seamlessly the students in her class saw opportunities to wonder regarding social studies content. Otis also articulated how children naturally seemed to be impacted by actively pursuing wonders in relation to content regarding history and geography.

> It's made a difference so far in their interest of things. Like this ancient Egypt unit took place right after ancient China. They seemed to care about this a lot more than they did about China. I had either two or three kids check out books about ancient Egypt from the library when we went last week, which I didn't see them do for China. They were just interested in finding out more.

Otis articulated at the outset his goal for this project was to increase student interest in social studies, since his initial class survey found students demonstrated the lowest level of interest in studying social studies content. Once he introduced the wonder journals to the unit regarding ancient Egypt, he felt a qualitative difference; they seemed to build their interest toward learning more. In addition, the affinity that children displayed toward wondering within the social studies content provides support for Helmsing's contention that wonder should have a more prominent position within social studies edu-

cation "through endeavoring to rediscover a sense of wonder in everyday life" (2016, 142).

RQ 2: What were some of the barriers and supports beginning teachers envisioned as they enacted these classroom approaches?

Struggles

The introduction of wonder-infused pedagogy into public school contexts certainly comes with challenges, particularly for beginning teachers. Typically, those struggles were related to assessment as both Otis and Anne negotiated how to 'count' the work that the children undertook when engaged with their wonders. Otis described this difficulty in an interview during his first year of professional teaching, "Yeah, it just really got them thinking. Like some of the journal entries I would make (...) I still need to kind of design like a point system on how I'm going to assess these." What is interesting is that he incorporated wonder journaling in his first-year teaching without a clear assessment plan for how he would count the work carried out in the journals. What is more important though is how he described engaging with student wonders and knowing 'when to push their thinking' and ask 'clarifying questions'. So rather than attaching a score to the journals he used it as an opportunity to create a written and running dialogue with students. This may ultimately prove to be a more effective tool than simply placing a letter grade on the journal entries. Otis also depicted that as a first-year teacher there is a continual worry about bringing too much attention to your classroom practices.

> I'm just doing the dance that the teacher here is supposed to do, but I want to add a little bit my own thing to it, but especially as a first-year teacher I'll try to comply with whatever it is I'm told to do.

This is not uncommon as many beginning teachers feel a strong pressure to meet an unspoken rule that your practice should fall in line with the teachers around you and most certainly should always follow any directives from school administration.

These pressures to fit in are a constant worry for beginning teachers and often work to erode their joy and most certainly curtail most willingness to take pedagogical risks or design approaches that fall outside of typical expectations, i.e. utilising wonder. In addition, there are so many responsibilities heaped on teachers that it takes time for them to adjust to workload and build

a classroom approach that works for their vision of the classroom. This became apparent during an interview in Anne's first semester as a professional teacher, when I asked "how are things going?" Anne replied:

> It's going. I am just taking it day by day. I love my class... It's just very overwhelming. I think it also takes you back from the stress of we have to meet this, this, this standard. Let's meet all them right now. We need to go quickly through all of this... I am not what I expected myself to be... I have had to give so much structure. At least starting out, I think freedom will come once we start knowing the routines.

Anne's sentiment is common as teachers navigate the pressures of standards-based education and the relentless workload as first-year teachers work to develop their classroom approaches for lots of areas outside of academics. These pressures work to keep teachers from slowing down and engaging children in meaningful content in order to just keep pace with the expectations laid up on them in the classroom (Cant 2014, 169). It is important to consider, however, that Anne also addresses a hopeful message that in time the freedom will come, as she continues to navigate the terrain of teaching.

Courage

Despite the pressures that Anne continues to experience in her classroom, Anne articulated still wanting to bring less stressful approaches into her class, which requires finding the courage to take the leap. During her final interview, she described her most recent attempts to bring wonder across her curriculum through having children compiling wonder lists.

> I didn't limit what I wanted them to wonder about. I liked that they were able to wonder about science as well as social studies, and wonder about math, and wonder about literacy, and the books that they're reading in class. I really like how open ended I kept it.

Despite the pressures she articulated, Anne is still finding ways to engage children across the curriculum, which ultimately is an act of courage for a first-year teacher. This could be due to the continual presence of university support even during her first year as well as several graduates from our programme also working in her school context, which provides some level of support by colleagues who may better understand the potential and intention behind her approaches.

In the case of Otis, he was also supported by his social studies faculty member Dr. Holdo, who was supportive of his approach for incorporating wonder journals into his practice despite the dearth of research supporting this approach in that content area.

> But then I started thinking: how could I increase their interest in social studies, and Dr. Holdo actually gave me the idea to do a Wonder Journal for social studies. She was like, "Maybe it hasn't been done, but you could still try it." So then I started thinking about all the different things that they could ask questions about, and that led me to like, we were doing our ancient Egypt unit at the time that I took over for independent teaching... So as our morning work, what we started doing was they would come in, there's a picture on the board, they wonder about it. They ask different questions, and we did kind of a model of that one day, and then we did that for two weeks.

Dr. Holdo (social studies educator) both demonstrated and supported a courageous approach when Otis recounted her words of encouragement: "Maybe it hasn't been done, but you could still try it." It is exactly these types of interactions that facilitate future teachers to take on acts of pedagogical courage. We cannot expect beginning teachers to take risks without first scaffolding them for those challenges, such as, in this case, to take on pedagogical innovation in their own practice. The support of this social studies educator provided Otis the courage to take on this approach and led directly into 'creative exploration' of his classroom approach (Milne and Cremins 2016, 87). Otis continued to describe the community from which he draws this courage from:

> The people I work with, my different people in my cohort, people I've had classes with, my professors, are all pretty ambitious in terms of things that they try, and I think I've kind of adopted that sort of ... What's the word for that? I don't know. There's just a certain attitude where trying new things is okay, and there's like openness to new things, and to just try it out and see if it works. And if it doesn't, how can you change it?

The importance of this support cannot be understated, as he has developed his pedagogical willingness to take risks as part of a community as opposed to a lone beginning teacher on his own in the classroom. Research has shown that wonder-infused approaches can positively impact classroom community (Gilbert and Byers 2020) and it may also be that wonder becomes a positive

mechanism for building communities of teachers as it creates 'an openness to try new things'.

Conclusion

The key to working with wonder in the classroom is that it is an invitation. An invitation to remind children and their teachers that there is so much to enjoy in the pursuit of learning. Learning itself is not a pursuit of pre-ordained standards that were decided by a committee of experts, but rather starts from thinking about the questions that drive us. This is the essence of what it means to learn. Can we reconsider the usual process that teachers enact where they begin with standards and try to find some spaces that may resonate with students? Imagine instead that we begin with wonder and as teachers we try and facilitate how those wonders might link with important content areas within the curriculum? If we evoke emotion, we may find that it triggers students' desire to know.

Di Paolantonio (2018, 1) asks the provocative question "Can wonder – as that sense which throws us and spurs us towards sensing and thinking without closure – help us to overcome the thoughtlessness that dulls our attention to what we do to each other through education?" My sense is yes, that it does move us beyond the simplistic notion that thinking exists merely to finish a bounded task, a discrete package of knowledge and then move onto the next task to memorise. Wonder lends itself directly to creative exploration, one not bounded by the structure of schooling. Anne and Otis remind us of the powerful homogenising structures that are at play for new teachers and if we are serious about bringing wonder into the public-school context there are particular considerations that must be addressed. In many ways, education has become about routines and structures and less about critical thinking and the messiness of learning. This seems to stem from fear on many fronts including following the expectations of colleagues and administration, managing heavy workloads, worries about content deficiencies, pressures of standards-based expectations and testing, and time.

We see in both cases of Anne and Otis that the education communities they are surrounded by offer important avenues of support. In many ways, wonder itself can offer respite from feelings of isolation and pressures of time as wonder drives community building and provides an opportunity for slowing down and thinking about the issues that vex us. Wonder in this sense helps teachers "build a sense of community (social capital) in a world where many people feel increasingly isolated" (Washington 2019, 166). This is an essential promise of

wonder in teacher education, one that builds community and lessens fear. "Distinct from wonder is fear; when the imagination is overcome by fear/ terror, wonder disappears." (Kearns 2015, 100). Reducing fear must be a top priority for those wishing to engage both in-service and pre-service teachers in the use of wonder-infused pedagogy. In this sense, we can offer exemplars for future teachers to engage with wonder, since those prior experiences with wondering have proven to be a catalyst for beginning teachers to take on these wondrous approaches in their classrooms.

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10 Using Oral Traditions in Provoking Pupils to Wonder and Grow in Moral and Intellectual Values

Valentine Banfegha Ngalim and Fomutar Stanislaus

Introduction

The debates about the status of African philosophy have become redundant. Today, popular discussions on African philosophy concentrate on colonial deconstruction, problem-solving and the need to affirm the African identity and personality in the world. Julius Nyerere's concept of *Ujamaa* emphasised the need to develop educational values in Africa on the basis of people's needs and experiences (Nyerere 1973; Ngalim 2018b; Ngalim 2018c). Kwame Nkrumah's *Consciencism* (1970) promoted problem-solving philosophy within the African context. For him, the practice of philosophy in Africa only has meaning when it leads to resolving the daily practical problems of the people in the continent.

The thoughts of both thinkers above advocate a post-independent philosophy of education founded on the wisdom, teachings and traditions of the continent's experiences. This approach set out to portray the limitation of building today's African educational values only on colonial heritage (Nyerere 1973; Ngalim 2018b Ngalim 2018c). In an attempt to place the child at the centre of African traditional pedagogy, Nyerere argues that the organisation of the school curricula in Africa has to take into consideration the mother tongue, the needs, interests and experiences of the Africans (Nyerere 1973). It is within this framework of thought that this paper sets out to situate African traditional pedagogy capable of enhancing wonder and curiosity in children within the African milieu, precisely in Cameroon.

Owing to the foregoing perspectives, this paper will investigate how African traditional forms of philosophising can be reappropriated to enhance creative and critical thinking skills of pupils (Morrison 2008). In other words, can proverbs, riddles, traditional narratives like myths, folktales and folklores enhance

moral, social and cognitive skills in pupils? The main thrust of the paper is the claim that if we want to produce a society of creative and critical adults to solve daily problems, then we have to render children reflective individuals. Considering the fact that the objective of education is to teach young children to think by *provoking* their sense of wonder, one wonders why one has to promote educational values and systems producing so many unthinking individuals. Wonder is the starting point of philosophy. Children have great dispositions to wonder, but unfortunately some present systems *de-wonder* them thus destroying their creative and critical thinking skills. To propose African traditional forms of philosophising sets the pace for a crusade of reinstituting wonder, curiosity and critical thinking skills in schools through oral traditional techniques (Fisher 1998).

With the advancement of technological and sophisticated means of communication and media, the demand for critical thinking skills in school is becoming more prominent. Unfortunately, this demand has been largely ignored. Said differently, most school values are insensitive to the moral and intellectual demands of the changing world. It is therefore imperative for African philosophers of education to diagnose and prescribe appropriate means through which schools in Africa could be linked to their cultures (Grant and Asimeng- Boahene 2006; Tyron and Terry 2011). This fact has been attested by research in the context of Indian culture and education. The separation of school experiences from home experiences in pedagogic content and method constitutes one of the difficulties Indian students encounter in schools. Most "educators have traditionally attempted to insert culture into education instead of inserting education into culture" (Ladson-Billings 1995, 323-329). This has prompted the problem of discontinuity between what students experience at home and what they experience in school. These differences could be discerned between teachers and pupils in the speech, language of interactions, methods of teaching and the contents taught. Most studies in this domain have retained the hypothesis that if the home experiences of pupils are incorporated into their classroom experiences, pupils are more likely to experience academic success (Dewey [1916] 1966; Ladson-Billings 1995).

Definition of key concepts

The principal ideas in this paper include using oral traditions to provoke pupils' wonder, and to promote moral and intellectual values. Oral traditions in African pedagogy include the use of proverbs, riddles, myths, and traditional narratives like folklores and folktales. These are values

transmitted from one generation to the next by way of mouth. They constitute informal pedagogic techniques employed to promote moral and intellectual values in the different communities (Takov 2016; Ngalim 2016a; Ngalim 2019). Wonder has been indicated as a primary disposition of a child (Stephens 2007). It has to be provoked in order to enhance the growth of creative and critical thinking skills in children. What are the various techniques by which oral traditions may be used to provoke wonder and critical thinking in pupils? With this traditional pedagogy, pupils experience four main approaches, namely 'hooks', 'bias towards action', 'start small' and 'failing forward' (Maxwell 2007, in Karin et al. 2017). These teaching techniques are explained in the subsequent paragraphs.

Hooking lessons with anecdotes, proverbs, riddles and narratives like folklores, myths, folktales and music, especially at the initial stage, captures the interests of pupils to follow and participate in learning. What are hooks in a lesson? What are the strategies of hooking pupils' attention or curiosity in a lesson? The use of proverbs, riddles and narratives like myths, folklores and folktales which could either be sung or danced serve as hooks to lessons. Essential questions are said to be stimulating and thought provoking, and to spark more questions. They are questions that give opportunities to explore and deepen understanding. These are possible questions that the teacher leads pupils to ask in the dialectic and interaction with proverbs, riddles and narratives (Maxwell 2007, in Karin et al. 2017).

Bias towards action refers to the pedagogic approach of letting pupils think independently and letting them provide answers to puzzles even if they make mistakes. Failing forward requires that pupils should take the risk to answer questions in the classroom dialectic process. Failures should not be seen as disappointments but as opportunities for pupils to learn more intelligently. Challenge yourself on selected proverbs, riddles or narratives and get started without having all the questions answered. Empower the pupils to plan, and with wonder and curiosity unconstrained by adults' problems they will think and develop more critical and creative skills.

To start small, when we are committed to take a minor chance, we are less afraid of failure. This strategy advises us to use 'Quick win' cards (each having one small strategy related to deeper learning principles that could easily be implemented). With these cards we are expected to ask more questions to pupils in class than lecture, and ask pupils to formulate their own questions about the proverbs, riddles and narratives provided. It is also interesting to conduct a live poll in which you ask pupils for feedback on narratives treated. Starting small supports bias to action because once the first step is incremental,

we are motivated to go forward until we realise our aspirations (Maxwell 2007 in Karin et al. 2017).

Moral and intellectual virtues refer to commendable values which reflect the rightness of choices and actions and those that enhance our growth in knowledge and science. The baggage of moral lessons obtained from proverbs, riddles, folklores, folktales and myths could be traced in the goodness they promote and the evil they condemn. These traditional pedagogies are not limited to the teaching of morality, but they also provide a great deal of knowledge relevant to the practice of arts, science and technology.

African traditional forms of critical pedagogy

This paper discusses pedagogical techniques that provoke critical thinking skills in pupils' processes and procedures of learning in African traditional pedagogy. To attain this objective, we have referred to the place of philosophical sagacity in enhancing the imaginative powers of pupils to think and flourish in educational values. This approach intends to use proverbs, riddles, and narratives like myths, folklores and folktales to provoke critical and creative thinking skills in early childhood education. The use of proverbs, riddles and tales enhances provocative, persuasive, rhetorical and intriguing learning experiences through expressions and statements that lead the listener from a natural experience (i.e. an experience with the natural world) to a human one (i.e. an experience with the human world) (Takov 2016, 152). These observations about life employ the suspension of judgment involved in ceremonial utterances (Takov 2016, 152) and "they serve as important pedagogic devices because they provide experiential case material on which pedagogic reflection is possible" (Takov 2016, 154; cf. Boateng 1983; Asante 1991). As learners break into the proverbs, riddles and stories they are able to reflect on the meanings and implications embedded in the experiences. These teaching devices are colourful and full of imagery thus enabling listeners to visualise their messages and create a life-lasting impact on their minds (Adeyemi and Salawudeen 2014). For instance, proverbs are very short but enhance quick applications to situations or contexts. First, we shall discuss the use of proverbs in provoking growth in moral and intellectual values. Second, we shall explain the use of riddles, and lastly, traditional narratives like myths, folklores and folktales.

Proverbs as pedagogic hooks to wonder and grow in virtue

Proverbs are 'popular epigrams or maxims' highly employed in African traditional thought patterns. These maxims are conceived as means for the embellishments of speech and symbols of communication (Ukoma, Egwu, and Ogechukwu 2016). For the Igbo, a 'proverb is the palm oil with which words are eaten' (ibid., 326). Here, palm oil serves as an ingredient/catalyst that increases the quality of food to be consumed. If proverbs are perceived as such, it means they serve the role of provoking critical thinking. This mode of communication possesses different levels of meaning. These include: the contextual, literal, sensory and symbolic meanings. These thought-provoking statements and observations about life portray the entire worldview of a people. They are perceived as catalysts of knowledge, wisdom, philosophy, ethics and morals. They call for a deeper reflection and further thinking and consideration of issues. For the Yoruba, "A proverb is the horse which carries a subject under discussion along; if a subject under discussion goes astray, we use a proverb to tract it." (Akporobaro and Emovon 1994, 1). Within this background of thought, anyone who understands their indigenous language possesses the wisdom of proverbs (Hallen 2008). Mbuy (2012) observes that the language of proverbs has a rich vocabulary of words, phrases, combination of words, symbols, pictures, illusions, association and comparison.

Like Mbuy (2012) and Makinde (1985), most African thinkers maintain that proverbs capture every part of society. For them, they enhance an understanding of science, metaphysics, logic, religion and other human endeavours. Some scholars may argue that "proverbs mean different things to different people", but it has to be retained that these are "symbols of communication packed in short sentences or even anecdotes and stories, sometimes carved on wood, stone or other materials, or even sung and danced" (Adeyemi and Salawudeen 2014, 186, who refer to Mbiti 1995 here). Talking about proverbs in the Cameroon context for instance, Mbuy (2012, 120) states that:

> Whoever uses a proverb wants to teach something very profound to the listener. The proverb carries across the message in such a way that the hearer is forced to reflect on what he is being told. So one who listens to a proverb does not remain content with basic outward meaning.

Highlighting the above, proverbs tend to challenge listeners to wonder beyond spoken words. They always have an obscure and versatile nature. Their blurred and vague meaning at face value, provokes critical analyses and brainstorming to make a step by step progress to their hidden meanings and essences (Asimeng-Boahene 2010). Proverbs never seize to spur learners to awe and wonder.

They continue to fuel the curiosity of young learners. For example, an educator may choose to use this proverb as a didactic tool to spur a young learner and to caution him or her of the excesses of selfishness: *"Wir li e kitam, wu reeme wir, wu sho nyam, wu kfer wun mo'on"* ("When a man falls into a trap, he raises an alarm for help, but when an animal falls into it, he eats it alone").[1] The first thing that strikes the consciousness of a young listener to the above proverb is the rich imagery in it, that not only renders the whole expression aesthetically appealing, but also conspicuously intriguing. A lot of meaning is hidden in the word 'trap' as used in this proverb. As the word lingers around the learner's imagination, he or she is obliged to question and decode the meaning of the word. What does a trap stand for? What is the relationship between a trap and an animal? What explains the double standards of humans as per the difference between falling into a 'trap' and raising an alarm for help, as opposed to getting a 'big catch' in a 'trap' and eating alone?

The basic thing that comes to the mind of the learner when the word 'trap' is mentioned is surely 'pain' to the victim, and triumph to the trap-setter. This simply balances the equation. The learner by this proverb is being led to discern the holistic nature of a trap. If the learner succeeds to perceive selfishness/greed as a trap that does not only have benefits, but also repercussions, then the message must have gone through. Note should be taken here, that only one word from the entire proverb has so far been identified and analysed. In fact, because proverbs are oblique and veiled, the depth of interpretation depends on the depth of one's imagination and insight. Here again, we confront the merit of proverbs as didactic tools. A direct question requires a straightforward and rigid answer, more often reproduced than thought out. This limits the extent to which a child may wonder imaginatively, and therefore stands on the way of a child's creativity. However, because of the beclouded nature of African proverbs, they provoke learners to think beyond bounds. They expose learners to wonder and think critically to enhance their creativity and capacity to make open-minded interpretations. Precise questions require precise answers and define in advance not only what a learner has to learn, but also the extent to which the learner must learn it. With proverbs this is not the case.

Another proverb that sends the same message of warning or caution as the above, but through a different imagery and a different symbolism is as follows: *"La wir yo a la vilu, e kfen a ban yuv"* ("Those who like honey should not hate bees"). This proverb betrays a high degree of pretence for those who do not cater for nature as it provides for their needs. The interpretation goes

1 This is my approximate English translation from the original Lamnso; the same goes for the proverbs that follow.

beyond simple words of wisdom and addresses ecological issues in the light of a sustainable consumption of nature. If an elder has advised the young persistently to no avail, he or she may say the following in resignation: *"Nyam lon yoyii yu Kisharang"* ("An ill-fated animal never senses danger"). This testifies that the strength of moral caution goes along with the wisdom embedded in proverbs. The structure of the sentence (syntax) has an influence on semantics thus influencing the decoding of information by the audience addressed or the recipients. *"A wani loo du ndev bve'h kitem a loa sheri?"* ("If children destroy the buckets on their way to fetch water, should we be celebrating?") This proverb simply calls for discipline by castigating the mediocre mentality of feasting on one's failure. *"Vikuu vi yur moo ngwasang dzen ngwa."* ("The coco-yams are itchy because we have enough corn in the barn.") This particular proverb also emphasises discipline in children. It draws inspiration from their eating habits and choices. The moral lesson here arises from the fact that a child who has several choices of foodstuff could go ahead and choose what to eat. On the contrary, he or she who has not got such luxury is condemned to eat what is available. *"A kum Chum kum Kimakar."* ("You are playing the smaller drum and the bigger one at the same time.") This is a ceremonial utterance to deter people from greed. The message underlines greed and serves as a polite and subtle means to caution the audience concerned against the evil habit in question.

As already indicated above, these proverbs may serve as warnings and caution against greed and other ills in areas of human activities. They simply disclose how to relate or treat other people thus enhancing the growth of moral values. One great feature of proverbs is that they can be used variously in different circumstances. Proverbs do not have a fixed or 'dead' meaning. They live. Proverbs are dynamic and a learner's capacity to manipulate and display them in different situations can be an efficient means to evaluate that learner's achievement. The sense in which a proverb is applied may criticise, praise, advise (like in the cases above), teach and caution. These are seen to be rich sources of African wisdom and philosophy.

Furthermore, proverbs by their capacity to cause learners to wonder do not only help in their moral growth. They also expose them to wonder about divine qualities, theological virtues and how man has to embrace them. Van Manen (1990) contends that proverbs throw more light on the concrete reality of lived experiences. In this context, they serve as pedagogic devices producing essential case material on which pedagogic action is possible. As children or learners analyse proverbs, they are able to reflect on the meanings and implications embedded in the experiences. Consider this proverb; *"Ngoo kisham yo yi ko kitchi."* ("The termite of the frog does not climb on the tree.") This emphasises divine providence. God caters for every creature according to its needs. The

philosophical value here lies in the thesis of rational theology, which traces the origin of all creatures to God. He is the creator of the Universe and at the same time the governor of the Universe. Some other proverbs express the cause-effect relation also discussed in metaphysics (Leonard 1966). There are proverbs which hold that nothing happens without a cause or reason *"quidquid movetur ab alio movetur"*. ("The toad does not run in the daytime in vain, either something is pursuing it or it is pursuing something." Hebga 1998).

Moreover, to understand the wisdom communicated by proverbs and how they can be used to express or address life problems or crises, one has to consider that these proverbs carry profound meanings more than the simple human can comprehend or easily interpret. Take the example of indigenous proverbs which are seen to possess socialising and enduring values of interdependence, sharing, living together in the spirit of Ubuntu and peaceful coexistence. For example, the proverb *"Veshweni wa tom ateng"* ("Those with two legs should lend help to the crippled") indicates the duty to give assistance to those in need (Enslin and Horsthemke 2004; Okoth and Anyango 2014). A custodian of ancestral wisdom may utter the aforementioned proverbs to the young to uphold the theological virtues of kindness in them. Here kindness is portrayed from two perspectives: divine and human.

Besides, proverbs also serve as veritable tools of education in values, culture and social attitudes especially in the traditional or indigenous educational practices. The heritage of proverbs is indicative of values taught to children to enhance the virtues of living together peacefully. There is a famous proverb in Nso: *"Wir dze wir bii wirii."* (This approximately says that one is a person because of others.) In Swahili, the very idea is transmitted as *"Mtu ni watu"*, meaning one can only define oneself in the context of others (Enslin and Horsthemke 2004; Venter 2004; Yosso 2005). In the same context other proverbs hold that "A person cannot pull and set a ship alone" and "One hand does not tie a package". These reveal the importance of individual contributions towards the success of collective goals. However, to emphasise the values of hard work one finds proverbs like "A person who wants what is under the bed must bend". This is indicative of the invaluable role of one's efforts in the success of any endeavour. In spite of the fact that one receives assistance from others in times of need, one is expected to make an effort to be successful.

For proverbs that stress the importance of education and its primary objective one finds examples like: "An educated person without good deeds is like a beehive without honey" and "Knowledge is light that spreads in the dark". These reiterate what one can refer to as real-time learning (Maxwell 2007; Funteh 2015). All the knowledge acquired in the course of learning has to have a great impact on the lives of the people in one's community. For those that

stress the procedures of early childhood education, there are Nso proverbs like *"Bven kitchi a ki dzee kibor"*, which translates literally into something like "bend the tree when it is still young". The Swahilians express the same idea in the proverb *"Undongo Ukande Ungali Maji"* (Ngalim 2016, 37), meaning a tree must be straightened while still young. This is testified in the popular English phrases "Clay must be modelled while still wet" and "Strike the iron when it is still hot". These thought-provoking statements provide perspectives for early childhood education (Akinsola, in Nsamenang and Tchombe 2011). The emphasis here lies in the rigorous moral foundation in early childhood. The virtues have to be instilled in children early in life.

Considering the pragmatic value of education, a proverb like *"Elimu ni maisha si vitabu"* (Abubakar, in Nsamenang and Tchombe 2011), literally meaning "Education is life and not books", highlights the outcome of learning, which has to impact on the socio-economic and political integration of learners into their communities. As advocacy for exemplary values in life, one finds a Nso proverb like *"Wan ngev i yen foo kiyii ki"*, literally meaning "The chick got it from the hen", and proverbs like "Children straddled on the back observe their mothers' backs", and "The leaf that the she-goat has eaten will be eaten by her kids" (Abubakar, in Nsamenang and Tchombe 2014). The inherent moral lesson is that the older generation has the responsibility to socialise the younger ones in the life of the community. Moral values are not for export as these proverbs provide the hallmark for parenting practices. Elders are role models, where children observe them and take after their examples. Parents are expected to teach what they believe and practise what they teach.

In addition, some proverbs provide critical thinking values like the law of identity. *"Ezinkpolo nada ezinkpolo"* means "From good seed falls good seed". Mbih J. Tosam (2016, 18) corroborates this view with the example: "A partridge only begets a partridge." This expresses the principle of identity and emphasizes the biblical wisdom that from their fruits we shall know them.

Apart from the above pedagogic value of proverbs, it is interesting to note that they provide perspectives for peace and good citizenship (Enslin and Horsthemke 2004). Take the example of the proverb *"Albassa ba ta balli n rua"*, meaning "The nature of onion and water are different though one grows by the help of the other" (Akinmade 2012, 12). This proverb bridges the gap of differences by highlighting the important of interdependence in harmonious living. Tolerance and understanding of other people are of capital importance in a multicultural context like that of Cameroon (Ngalim 2018a). There are approximately 380 ethnic groups in Cameroon, further complicated by a bicultural colonial heritage of Britain and France. Apart from the individual differences and ethnic diversity understood in this proverb, one also learns of

the symbiotic and interdependent relation among ethno-linguistic divides and political differences. This is a commendable perspective for unity in diversity as advocated by the present politics of national integration. There is no superior culture within the context; tolerance of other cultures is of capital importance to harmonious living (Ngalim 2014a; Ngalim 2014b; Ngalim 2014c). This is a perspective that could be exploited to deconstruct tribalism and the *Anglophobia-francophobia* malaise in Cameroon (Ngalim 2016b; Ngalim 2018a).

To advocate for moderation and caution against foolhardiness, consider the proverb which states that "When a strong man is constantly praised, he fights empty-handed and is carried away in a worn-out basket" (Akinmade 2012, 12) and the Nso proverb which says *"Mburi ngev yi kfen kife"*, meaning after lavishing praises on someone they miss the track. This refers to a person who is full of himself and does not listen to advice. They think they know it all after the flattering praises lavished on them. Owing to the vices of pride and self-confidence, they take decisions that bring horror and disaster to themselves and to the people of their community. Central themes discernible in some proverbs include a life of moderation, hard work, respect for the truth, solidarity, willingness to work and suffer for oneself and the community, respect for hierarchy and authority, a sense of honesty, modesty, tolerance, sense of goodness and kindness, love of one's neighbours, respect for life and concern for the other.

Other proverbs simply spur learners to wonder, and it seems that is their intended purpose. In some circles in Africa, proverbs have become so interwoven with living speech that they can be heard at any time and occasion. In Nso for example, proverbs serve as a means of achieving clarity and conciseness in discourse. They are vehicles used in driving home a point. In this case, children can be aptly introduced to proverbs in their vernacular deliberations on issues of interests that portray concepts and values in a culture. For example, *"Bong ke ngaa yuv"* ("Privileged are the dead") or *"Vishwim viyo ko way ngvev"* ("Cockroaches do not sell in the same market with fowls"). The latter proverb informs us that not all mixtures operate harmoniously. There are some that lead to conflicts and disasters and therefore must be separated. The persistent conflicts discernible in the legal and educational system as a result of the two colonial cultures in Cameroon testify to this wisdom (Ngalim 2014b). What could be learned here is that while there are some values that can be harmonised, there are some that must be kept asunder to preserve the specificities of each culture. Therefore, a multicultural perspective of unity in difference has to be the appropriate approach to the philosophy of harmonisation in Cameroon (Ngalim 2014a; Ngalim 2014b; Ngalim 2014c). It remains evident that proverbs expose learners to critical thinking and challenge them to make unlimited interpretations. The various forms used to weave proverbs harbour

hidden messages. Proverbs are usually signboards leading to deeper realities. Beyond what is said orally, a lot remains inherent and unspoken. It is this inner treasure of proverbs that keeps learners in awe, wonder and relentless quest. They constitute a warehouse of knowledge that can only be tapped with critical analysis and hard work.

Riddles as provocative utterances of moral and intellectual values

Riddles are basic forms of symbols which challenge the listener to explore, reflect and think in order to discover further meaning. It is a didactic game that sharpens one's powers of observation and comparison. They constitute a formidable intellectual exercise because they enhance the development of a child's reasoning powers and skills for decision-making. They introduce children into the material and non-material cultures, namely: agricultural tools, household utensils, arts, crafts, effigies and symbols, their mother tongue, belief systems, music, drama, geography, history, cuisine, social ordering and the socio-political structure of a people. These exercises are used to pose problems for the audience to find solutions, though not always in question form.

Concerning riddles, one may say that they are of the same family as proverbs. Riddles have a provocative aura in such a way that, unless one finds an answer to them, one never finds rest. They keep straying around one's mind like a notorious fly. One's mind can travel the whole world round just to find an answer to a riddle. Riddles, like proverbs, keep the mind working and aiming high. Let us consider the following riddle, still from the Nso cultural background: *"Li mo yi mosho"* ("Take me and eat me with it"). Once this riddle is put out to a child of Nso cultural background, wondering and guessing begins. Since this riddle suggests the possibility of a food item that can be taken and eaten with this same item, the child begins judging from a myriad of options; is it possible to eat beans with beans? "Impossible!", the child will say after careful examination. The learner will proceed to ask again; is it possible that corn can be eaten with corn? In which forms can this be possible? "No, impossible!", the learner will say again after critical analysis of various corn products. The search will not end here. The learner continues considering various food items and will proceed to ask: "Can cocoyams be eaten with cocoyams?" *"Mbar!"* he or she will exclaim. *"Viku'uu!"* he or she will yell. "Yes! *Mbar* [leaves of cocoyams] can be eaten with cocoyams!" "Bravo!" he or she will say to him or herself. In the process of conjectures and refutations, the child discovers the answer to the puzzle. The joy a learner experiences when, through a fine spun and delicate search, he or she arrives at the right answer cannot be concealed. Riddles have this quality of provoking an eagerness to obtain the answer which often buries the learner in restlessness until the right answer is arrived at. Like proverbs,

riddles are pedagogic hacks that should not be neglected in child formation and development. Other examples abound: *"Taa-ta lav ki-ghev dze!"* ("A Grandfather who sits in the house and his beards are seen outside. What is it?") *"Tim fen tim nyam bar!"* ("I stand and shoot an animal at a very long distance! What is that?") These are approximated translations of some riddles from the Nso tribe in Cameroon. These testify to how one could exploit them to subject pupils to fact-finding exercises and incessant self-questioning and wonder.

Searching for values and meaning in African traditional narratives

Most African oral narratives for an audience of children appear as forms of entertainment, but in reality they carry a baggage of moral lessons and provoke critical thinking skills. These narratives include myths, folklores and folktales. They have objectives such as instruction, character education and preparing children to assume responsibility in society (Nkata 2001). Myths could be explained as stories tailored to make explicit in human terms what is beyond human understanding. They treat events that took place a long time ago, which include the adventures of the gods, giants, villains and etiological themes (Takov, in Tosam and Takov 2016).

African folklore is a term used to designate numerous varieties of traditional narratives. Telling stories is a universal experience common to both primitive and complex societies. These folklores are similar from culture to culture. The discernible messages in these narratives reflect the values of the society in which the children are socialised. Among the most cherished of these values are honesty, hard work, perseverance, courage, respect for elders, obedience and being considerate of others. Some narratives are meant to serve as deterrents to vices like greed, gluttony and laziness.

Folktales are employed to sharpen the creative sense of visualisation and imagination of children. They stir the mind of the young to think independently on a given topic and arrive at judicious conclusions on perplexing or confrontational matters (Takov 2016). These pedagogical approaches are opposed to learning by rote or memorisation, therefore being sympathetic to teaching as dialogue. Numerous exchanges and interactions between the educator and pupils lead the pupils to self-discovery of truth. Oral tradition is at the centre of African traditional pedagogy. These approaches are most often overlooked due to the insistence on writing, memorisation and recitation exercises in early childhood education. Folktales have (at least) seven objectives:

1. *The enhancement of the fear of God and the deities, and to respect tradition, to respect the elders.*
2. *To instil fear in the minds of the young not to take laws into their hands.*
3. *To oppose injustice.*

4. *To teach elementary principles of natural and supernatural laws.*
5. *To sharpen the creative sense of vision and imagination in young ones.*
6. *To direct the minds of the young to think independently on a given topic.*
7. *To arrive at judicious conclusions on perplexing or confrontational matters.*

The relevance of folktales in the development of moral and intellectual virtues lies in that they present a moral order representing a set of normative requirements. These requirements are often directed to the consciousness of individuals through the use of oral traditions such as satire. When folktales are told to children an elder asks them: "What does the story teach us to do and not to do?", and the children will give their answers following their understanding of the story. These were stories used to keep the evenings alive in the different communities after a day's hard work. They were psychological tools for elders to sharpen the imagination of children and instil in them enormous fear for wrongdoing. In Nso folktales, one finds something to laugh, think and to set one's imaginary flight in a jungle where animals rule like human beings. Some examples include "*Choumptu* the Orgist", "The adventures of *Baa* and *Wanyeeto*" and "The adventures of *Kpuntir*" (Lantum 1980).

Challenges to the use of African traditional pedagogies in schools

As seen in this paper, African traditional pedagogies involve the oral traditions that have been identified as important sources of knowledge acquisition. These traditions serve as media of cultural continuity in poems, proverbs, riddles, narratives and wise sayings in local communities (Shiza 2005; Shiza 2006). These practices were used in indigenous education to teach moral values and appropriate behaviour. They were the primary ways in which a great deal of African philosophy, knowledge and wisdom has been taught (Shiza 2006). With these oral traditions, there are no written records of the ancient past and all that has been preserved of their knowledge, myths, philosophies, liturgies, songs and sayings has been handed down by word of mouth from generation to generation. The absence of written records has been the point of focus for most critics of this system. They emphasised the difficulty of preserving these thoughts from one generation to another, the values thus being susceptible to extinction. This is probably an expression of Western imperialism, where only written records have been identified as having great scientific value (Hegel 1945; Hegel 1954). Socrates' philosophy was never written but preserved in the memory of his pupil Plato, who only docu-

mented it afterwards. Therefore, the values of a culture cannot be deprived of its scientific value for the simple reason that they have not been documented. Cases where a people's ideas and contributions to human thought have been dismissed or doubted for the reason that they were unwritten must be given a second thought (Makumba 2007).

Another challenge raised by the critics of this system is that African values communicated orally like myths, proverbs, wise sayings, narratives, riddles and legends lack a universal or universalisable interpretation. The argument goes that proverbs, riddles and folktales may mean different things in different cultures and traditions in Africa. For that reason, they are not worthy of being classified as a source of science (Hegel 1945; 1954; see Funteh 2015). This point is probably acceptable to the extent that one can agree that these oral traditions differ according to cultures and local traditions. However, the hermeneutics of these forms of oral communication lies in one's ability to exploit them and use them in the context of one's classroom realities. The interpretations may differ, but they carry the same immutable truths of justice, peace, rightness of character, religion, fear of God, science and technology, morality, and love for nature and humankind. What has to be retained is that there is a cultural contribution of every people to the universal themes in philosophy and science. Every culture brings from its house a baggage of values bequeathed to the universal spirit to keep it relevant to the reality of life (Makumba 2007).

In line with our response to the above challenges, we contend that there is a need to recover the values embedded in these traditional pedagogies to enhance the creative ingenuity and critical (moral) thinking skills of pupils in schools today. We are not in any way attempting to say that all these values are relevant to the needs and experiences of pupils in all contexts. Critical pedagogy requires that educators exploit these values as they present themselves as relevant to the values they intend to project in the curricula to ensure the growth of pupils in moral and intellectual virtues. The crisis of education today is discernible in the untested values in social media to which children are exposed. Let us limit ourselves to the experiences of social media and television series that have taken over the oral narratives that characterised the evening sessions of children and the elders of the community. This is a crisis of education and at the same time a crisis of socialisation. Chinua Achebe has advised African writers for children to draw from the infinite treasury of African oral traditions (Chakava 1998). This is to serve as an antidote to the story books provided to children, which fail to reflect the realities of their social cultural values.

Conclusion

This paper set out to demonstrate the invaluable role of African traditional pedagogy in provoking the growth of moral and intellectual virtues in pupils. In traditional African pedagogy, schooling and education, or learning skills, societal values and norms have hardly been separated from other spheres of life. Eurocentrists have therefore had 'doubts about the authenticity of traditional African education' (Funteh 2015, 139). The debate has been that prior to the colonial period, Africa lacked 'the prerequisites to genuine educational acquisition' (idem). We dare to corroborate the view that this is 'a blinded cultural paradigmatic estimation by Europeans' (idem). From the foregoing explanations and examples, it goes without saying that African traditional thought and pedagogy promotes critical thinking and creative ingenuity in both moral and intellectual matters. The organisation of the school curricula today needs to integrate these pedagogies into the content and processes of education right from early childhood education on. Bodunrin (1991) contends that there is no reason to exclude proverbs, myths of gods and angels and the social practices from philosophical inquiry. An example of the creative recovery of these narrative forms in schools today is the introduction of Sankofan education, which is a bulwark to uncritical and often ignorant negative images about Africa (Tedla 1995; 1996). Bringing the informal (oral philosophy) into the formal (schools) permit schools *to re-wonder* the pupils that they *de-wonder* with pedagogic contents and practices that separate them for their daily home experiences.

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11 Education and the Arts: Inspiring Wonder

Laura D'Olimpio

Introduction

Anders Schinkel (2017; 2018) defends the role of deep wonder as an antidote to the instrumentalising effects of a neoliberal approach to education. Educationally, children should be encouraged to enter into wonder-full[1] states, yet how to educate for wonder? In this chapter, I will further build on Schinkel's ideas and defend the arts as an important vehicle for prompting the experience of wonder. The arts are likely to give rise to a sense of wonder due to the way in which they present concepts, images and ideas in new and creative ways. Such artistic depiction encourages those engaging with artworks to adopt a certain way of seeing; a mode of perception that is open and receptive and thus likely to result in feelings of wonder. I claim that creating space for the arts on the school curriculum will provide opportunities for wonder in educational settings.

Wonder often seems elusive. It seems as though some people (especially young children) *often* experience moments of wonder whereas others do not... and wonder is the type of experience that is unlikely to become manifest the more it is chased. As such, experiences of wonder may surprise us, arising anywhere at any time. As teachers, how may we teach students to experience wonder? We may create the conditions conducive to wonder, yet we cannot guarantee the perceiver will experience wonder. The experience of wonder involves subjective and contextual factors; factors which may be difficult to

1 As per the use of the term by Kieran Egan and others. See Egan, Cant, and Judson (2014).

ensure in a classroom, although the appropriate attitude receptive to experiencing wonder may be encouraged and role modelled.[2]

I claim that the arts are likely to give rise to a sense of wonder because artworks invite those engaging with them to view things (including objects, ideas, concepts and images) in ways that would not usually occur to us as we go about our daily lives in a pragmatic fashion. This may be the case because we are usually time poor and/or goal oriented as we go about our daily tasks. Artists often convey, transcribe, render and transform ideas they express in creative ways that present the familiar (and unfamiliar) to viewers in new forms. In this way, artworks invite and encourage viewers to adopt a certain mode of perception – a way of seeing that is open and receptive, which is likely to result in the experience of wonder.[3]

Art teachers are in the position to be able to educate students as to how to adopt this particular mode of perception in relation to artworks. This may occur in relation to students' own work and art making, as well as to that of others, including artworks that form the canon. Art teachers may do this by role-modelling this open and receptive mode of perception and describing and explaining what they perceive in artworks, as well as by teaching students to look for and appreciate the features by which artworks are judged.[4]

In this paper, I will commence with defining wonder as 'deep wonder' (following Schinkel 2017, 2018). I will argue that wonder is associated with a certain mode of perception that is open and receptive to what is there to be perceived. I shall then make a similar argument about art; namely, that artworks invite contemplation[5], which involves adopting a particular, open and receptive mode of perception. This mode of perception is conducive to the experience of wonder and, as such, the arts have a role to play in stimulating experiences of wonder. There may certainly be other ways to encourage the experience of wonder, along with facilitating an open and receptive mode of attention, and I am sure

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2 Note that I am not ruling out the possibility of teachers learning how to be more receptive to experiencing wonder from the attitude adopted by their students!

3 Such a mode of perception may also result in feelings or experiences of awe, the sublime, anger, disgust, fear, compassion, humility etcetera. It does not adversely affect my argument to claim that other feelings and experiences may arise as a result of engaging with artworks or adopting the mode of perception to which I refer. For the sake of the claim I seek to defend, I merely need to establish that some artworks invite this mode of perception which is conducive to the perceiver experiencing wonder.

4 These will likely include formal features such as form, expression, unity, composition, line, colour, shape, tone, texture, pattern. Appreciation may involve valuing and valuing may involve aesthetic and/or ethical value. For the sake of this paper, I shall set aside this debate as I lack the space to do it justice here. For more on aesthetics and ethics, see Jerrold Levinson, (Ed). (2001).

5 Whether or not such contemplation is 'aesthetic contemplation' or simply contemplation applied to art objects is another debate I shall set aside for the purposes of this paper. However, for more on this, see the debate between George Dickie (1964), Jerome Stolnitz (1960), and Gary Kemp (1999).

that environmental education and religious education are other good candidates for a similar argument to be made. However, my argument need not be damaged by the fact that one may equally advocate for environmental education and/or religious education as conducive to students experiencing wonder. In fact, the appropriate response may well be 'the more the merrier' when it comes to wonder-full educational moments. In this chapter, I will focus on how the arts may prompt experiences of wonder and, correspondingly, I will defend arts education as a good way to introduce young people to a manner of engaging with artworks that supports such wonder-full experiences.

Defining wonder

As a starting point, defining what is meant by 'wonder' is no small task. Genevieve Lloyd (2018) helpfully traces the history of the word in the ideas of philosophers throughout the Western tradition and notes some important features of the term, distinguishing it from and yet still noting its connection to the sublime. It is clear that the word 'wonder' has not always been used in the same way throughout history or by various philosophers (Lloyd 2018, 4). In the 18th century, the notion of the sublime emerges and transforms the way 'wonder' was considered; with one version being more akin to curiosity and the other similar to awe and dread (ibid., 5). Without dismissing the aesthetic notion of the sublime, which took on some of the original features of wonder, Lloyd defends reclaiming the Socratic understanding of wonder where wonder is connected with intellectual inquiry and reality, as well as with fictions and artworks (ibid., 120-121).

Although our contemporary common use of the word seems synonymous with question asking, Schinkel (2017) notes the differences between wonder and curiosity, stating that curiosity seems to seek answers and thus may be limited in its scope as to what may be discoverable. Curiosity also applies to the novel, to the new, to the not-yet discovered or understood; whereas wonder need not only apply to novelty. Wonder may also apply (perhaps continually) to the familiar which is, nonetheless, still wonderful. Lloyd concurs, noting,

> The mental unrest induced by the not-yet-known is not always the mere passing pangs of unsatisfied curiosity. Not all wonder is allayed by explanation. Wonder that things are as they are can persist – even when inquiry into what they are, and how they came to be that way, has come to its natural end. (Lloyd 2018, 9)

I follow Schinkel (2017) in making a useful distinction between two different kinds of wonder: *active wonder or wondering* which is prompted by curiosity and encourages exploration and understanding, and *deep or contemplative wonder*, which is not inherently inquisitive and may be silenced when faced with the mysterious or the sublime.

In this paper, I will focus on what Schinkel has termed 'deep wonder', which he defines as follows:

> 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. It is an experience with a particular temporality: time slows down, comes to a momentary standstill, we pause to contemplate what arrested our attention, we stop to wonder – or we have made a habit of doing so. (Schinkel 2017, 552).

Deep wonder is a 'rich' or 'thick' experience rather than a 'thin' experience (for a distinction between the two see Sharpe 2000, 329-330), meaning that it resists a reductionist empirical account of the phenomenology of the experience. This 'mode of consciousness' involves paying attention to something or valuing it 'for its own sake', and the form of attention paid is 'open' and 'receptive' (Schinkel 2019). One significant aspect of Schinkel's definition of deep wonder is that this state may be stimulated when one is appreciating something (an object, thing, animal or person[6]) for its own sake; that is to say, intrinsically rather than instrumentally.

Deep wonder involves a 'slowing down' rather than a speeding up; the phenomenology of the experience is such that the feeling state comes upon us and we 'stop to wonder' (Schinkel 2017, 552) even though we may remain in an active (rather than passive) state. The seeming contradictions encapsulated by wonder are illustrated by Lloyd as follows:

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6 For the sake of ease I shall refer to these as 'objects' henceforth. Note I am not committed to saying all objects may stimulate the experience of wonder, although nor is this ruled out.

> Flaubert shows that wonder and stupidity belong together; that they coexist and interact. There are some striking commonalities here with older philosophical ideas of wonder: the imagery of motion and rest; the intermingling of intellect and emotion. His theoretical reflections explore the possibility of a state which hovers between not-knowing and knowing – a condition not unlike that in old accounts of wonder (Lloyd 2018, 8).

On this account of deep wonder, there is a particular mode of perception that is a way of seeing or engaging with what is present before us that is being depicted. On this account, we attend to the object for its own sake, seeking to know but also aware that we do not know (or cannot know) the object in its entirety. The phenomenological state of wonder involves the activation of our emotions as well as our intellect.

The mode of perception that is required for wonder to result involves being open and receptive to what is there to be perceived. Such a mode of perception may be difficult to adopt, given much of the time we see and use things instrumentally in a pragmatic fashion as we go about our daily lives. Yet, the mode of perception that enables us to be receptive to the experience of wonder is different, conceptually as well as phenomenologically, from this pragmatic attitude. This may in part account for why the experience of wonder is elusive, transient and defies command. I do not experience wonder simply because I *will* it. If I chase the experience for the sake of the feeling evoked, I may be less successful in evoking deep wonder. However, if I attend to the object in an open and receptive manner, valuing the experience for its own sake, taking my time instead of rushing, wonder is more likely to arise because it is supported by this particular mode of perception I have adopted.

Art and wonder

Thus far I have supported the claims made by Schinkel (2017, 2018) that 'deep wonder' is associated with adopting an open and receptive mode of perception. I wish to make a similar argument about art; namely, that artworks invite and encourage contemplation, which involves the receiver of the artwork adopting a particular open and receptive mode of perception in relation to the artwork or object. Given the mode of perception encouraged by artworks, those engaging in this way with artworks are also well disposed to experiencing a sense of wonder in response to the work in question, or in relation to the ideas and feelings evoked by the artwork. It must be noted that I am not claiming that *all* artworks will be able to prompt this experience (or only

this experience), yet neither am I ruling this out. For now, I shall set aside the question as to *which* artworks are able to do so. Provided my argument applies to *some* artworks it suffices for my purposes here, and will enable me to conclude that the arts have a role to play in stimulating experiences of wonder due to the fact that aesthetic contemplation involves adopting an open, receptive mode of perception when engaging with an art object.

Firstly, it is unsurprising that many of the examples provided by theorists illustrating the experience of wonder are drawn from art and literature. Despite the connections to notions of the sublime, art (especially religious art) and nature are the examples that spring to mind when we consider the last time we felt a sense of deep wonder. Words such as awe and beauty often accompany such descriptions, and it is for this reason that I wish to point out that not all art is awesome, beautiful or sublime. Yet, even so, there are artworks that will inspire a sense of deep wonder.

Artworks invite those engaging with them to be willing to really look to see what is there to be seen. I use the word 'see' here in a wide sense, as many artworks rely on various forms of perception, not solely that of sight. Each and every one of us has experienced a work of art that has completely captivated and engaged us, such that time seems to stand still and we are fully absorbed in what we are perceiving. Consider, for example, a particularly engaging film, novel, opera, dance or music performance, a painting or a sculpture that, after captivating one's attention, *stays with us* in a sense. This particular mode of perception apprehends and carefully attends to what is there to be seen or perceived. It may not be unique to artworks, yet some artworks invite and encourage this mode of perception to be adopted due to the way in which they seek to draw in and affect the receiver of the artwork.

The creativity of the artist's depiction stimulates the imagination of the receiver of the artwork. The imagination is required as the perceiver is offered a perspective (or perspectives) on that which is made manifest through the art form. This occurs in various ways depending on which art form is being used. Even in a still life painting, painted as realistically as possible, the way the fruit and flowers appear rendered in the paint invites the viewer to look again at fruit or flowers they may have seen and smelt and eaten a hundred times in their daily lives. Even if the perceiver of the painting does not apply such focused attention to any actual fruit or flowers they encounter, they are certainly invited to specifically attend to the depicted fruit and flowers in the painting. As such, they are invited into the world of the painting, however broad or narrow such a world may be. If the audience is a contemporary one and the painting is from a hundred years ago, the imagination is also activated

in transporting the viewer back to the time in which the painting was painted, which may seem at once old-fashioned as well as timeless.

It is through the use of our imagination and a particular attentive mode of perception that artworks invite us to adopt various perspectives on objects, scenarios and concepts. This particularly imaginative mode of perception is often associated with art, even if it may not be exclusive to aesthetic contemplation. Maxine Greene defends the inclusion of the arts and aesthetic education on the curriculum precisely because it, among other things, encourages this particular way of seeing. Greene often refers to 'noticing what is there to be noticed' and ties this vision to an attentive, imaginative engagement with that which is presented to us (Greene, 2001: 32).

For Greene, this argument forms a vital defence of aesthetic education and the inclusion of the arts in the curriculum. The honing of students' perception is reliant on the use of the imagination, and the arts offer such imaginative, aesthetic experiences and meaning-making to students:

> 'Aesthetic Education,' then, is an intentional undertaking designed to nurture appreciative, reflective, cultural, participatory engagements with the arts by enabling learners to notice what is there to be noticed, and to lend various works of art their lives in such a way that they can achieve them as variously meaningful. When this happens, new connections are made in experience: new patterns are formed, new vistas are opened. Persons *see* differently. (Greene 2001, 6)

The connection between the imagination and an attentive form of perception is also made by Hepburn, who, in turn, connects this idea – what Nussbaum (1990) would call 'sympathetic imagination' – to wonder. "Wonder is 'broken knowledge'", Hepburn (1980, 6) notes, quoting Francis Bacon, because it fills the gaps of what we do not know. It is the imagination that allows us to encounter the 'as-if'; possibilities that may be real or fictional. Artworks present us with perspectives and sensations that may stimulate the experience of deep wonder.

The connection between aesthetic experience and wonder for Hepburn is akin to the tie we have already identified between art and perception. Hepburn (1980, 16) argues that in wonder as well as in aesthetic activity, the main aim is 'expansion of cognition' and 'intensity of perception'. He quotes Hagen who argued that wonder is 'the exercise of intentionality for its own sake'; 'intensified awareness' (Hepburn, 1980, 16; quoting Hagen 1972). It is a specific kind of seeing that the arts, and wonder, encourage. The vision adopted is one that

truly *looks* and *sees*, sympathetically[7], with an open respect for that which it is receiving.

When we attend to an artwork using our sympathetic imagination, we may experience deep wonder. The object of such deep wonder may be the art object itself, or the artist, or the way one's subjective vision has been altered as a result of encountering the work in question. The perceiver may experience wonder at the beauty or technique of the work, or at the expression (of the concept or feeling) embodied in the artwork and/or the artist or artists who are able to render it thusly. Nussbaum has suggested that in wonder we are "maximally aware of the value of the object, and only minimally aware, if at all, of its relationships to our own plans. That is why it is likely to issue in contemplation rather than in any sort of action towards the object" (2001, 54–55), which sounds akin to Schinkel's deep wonder, rather than active wonder.

In this way, artworks invite and encourage perception that is open, receptive, and thus, arguably sympathetic. This kind of perception makes use of the imagination, the cognition as well as one's feelings. By attending to artworks using an imaginative, receptive mode of attention, one is open to what is there to be seen and is likely to experience what is there to be experienced. Such experiences depend contextually on the artwork and the way in which it is displayed or presented as well as on the individual and the subjective features of their own experiences and perceptive faculties. While these multiple factors cannot be predetermined or quantified, it is the case that artworks prompt experiences of deep wonder in those who receive them. Not all artworks and not all perceivers will manage this, but where it occurs, wonder is experienced as an impactful component of aesthetic engagement.

Hepburn (1980, 16) notes that wonder has an aesthetic aspect, saying: "In acknowledging its appreciative and contemplative aspects, we have already identified an aesthetic aspect of wonder." He writes: "The boldest suggestion would be that the fields of aesthetic experience and of wonder are coextensive", yet rejects this strong claim, stating that "the fields of aesthetic experience and wonder do indeed overlap; but I would resist any stronger claim. Not all wonder belongs to aesthetic experience." Further, he goes on to say that not all aesthetic experience is 'wondering' (note the use of the verb here seems to shift the meaning from deep wonder to active wonder) (Hepburn 1980, 17). So there may be wonder without an aesthetic experience, and there may be an aesthetic experience without wonder.

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7 Note that Dickie (1964) and Kemp (1999: 393) deny or ignore that the form of attention in question be 'sympathetic'.

I agree with Hepburn, particularly because, despite the claim that wonder and aesthetic experience are not coextensive, he goes on to say that "where wonder is not itself the central aesthetic effect, it may be an element in the total experience of a work of art, a higher-order element" (Hepburn 1980, 17):

> It is wonder at the achievement of what (*independently* of wonder) is of high aesthetic value, perhaps at the complex formal integration of a symphonic movement, or at its vivifying initially unpromising materials. Thus wonder cannot be identified with aesthetic experience as such.

While Hepburn doesn't limit wonder to aesthetic experience, or vice versa, this is not to deny that aesthetic experience goes hand in hand with wonder. As is evident in his quote above, it seems precisely that wonder may emerge or result from aesthetic experience, even if it is not coextensive with aesthetic experience. In this way, at least, the aesthetic experience may include a feeling of wonder and, importantly for our purposes here in this chapter, aesthetic engagement may produce a feeling of wonder in the perceiver of artworks.

Indirectly teaching for wonder

If we wish to create moments and experiences of wonder in the classroom, or if we wish to cultivate a steady attitude of wonder in students, why should we ensure that we teach the arts? It is the arts that invite us to adopt an open, receptive mode of perception to the ideas, scenarios and characters therein depicted. Artworks offer receivers of the work a safe fictional space in which to imaginatively encounter these ideas, scenes and characters and thus provide us with a space to practise this open, receptive form of perception. It is this open, receptive mode of perception that allows the receiver of the artwork to also be receptive to an aesthetic experience and experiences of wonder. It is the arts that provide us with ready access into the hearts and minds of others, whether fictional or real, allowing us to perceive what is there to be noticed, honing our perception in a way that is then open to the experience of wonder.

Such experiences of wonder may be directed at the art object itself, the ideas and characters creatively expressed therein, or to corresponding ideas, scenarios or people in real life. Art teachers can assist students to *see* in a particular way – attending to form and specific details and 'reading' the artworks in ways that are required and invited by specific media and texts in order to glean the

meaning and experience the affect that is there to be experienced.[8] This 'aesthetic literacy' is a skill set that art teachers can teach their students, enabling them to make meaning from artworks that connects to and draws upon formal, aesthetic, historical and technical knowledge and understanding of artworks, art forms and various media. Art teachers must therefore have specialist knowledge and training themselves in order to be able to support their students to learn about, for instance, art history, aesthetic theory, as well as the technical skills involved in art making. When students create their own artworks, art teachers can guide them to hone their perception in relation to their own work as well as learn and practise the skills and techniques required in order to manifest the form they have in mind. This is to say that teachers can role-model, and assist students in learning to adopt, the open, receptive mode of perception towards artworks that is conducive to perceiving the artwork aesthetically as well as to experiencing a feeling of wonder in relation to the art object. While such a mode of perception and the experience of wonder may well come naturally and even frequently to some, this is not to say that there is not also an important role for teachers in supporting such aesthetic literacy. Aesthetic literacy involves practising an open and receptive mode of perception, it includes engaging imaginatively with artworks and objects. Such aesthetic literacy as I describe here is, I suggest, conducive to wonder-full experiences.

Wonder-full educational experiences are, for example, classes or lessons that are more than simply 'fun', or 'interesting', or 'enjoyable', even if they may be some or all of these things as well. When wonder is a pedagogical tool, Yannis Hadzigeorgiou (2014, 50) claims it results in the following kinds of awareness:

- Awareness that one's knowledge is incomplete or mistaken.
- Awareness that there is more to be learned.
- Awareness that some phenomena exist at all.
- Awareness of unexpected connections between phenomena and ideas.
- Awareness of the beauty of natural phenomena.

It is these moments of awareness that give the experience the 'wow factor' (ibid., 50) that indicates that the experience is one of wonder rather than simply something else (being fun, interesting or engaging). It is these modes of awareness (or perception) that indicate whether the student experiencing the

8 This is not to deny that receivers of artworks will also respond subjectively to artworks and sometimes feel what is not intended by the artist or necessarily depicted in the formal features of the work. I shall set aside the debate about 'ideal' readings of artworks and the 'intentional fallacy' (Wimsatt and Beardsley 1946) for now.

wonder-full educative moment is not simply feeling curious; they are also feeling surprised by a sense of wonder.

The benefit of practising such a mode of perception (or awareness) in relation to artworks is twofold. Firstly, the arts are fictional and such imaginative engagement may be less threatening than when one is receiving information and meeting real life others in the real (i.e. non-imaginary or non-fictional) world. Secondly, such artworks deliberately invite us to adopt various points of view or they present perspectives that we wouldn't usually encounter in our daily lives or when thinking about things and perceiving the world in our habitual manner.

Here we see why art goes hand in hand with wonder and how the art teacher can position everyday objects in such a way as to be perceived *differently* by students. It is art that renders objects in new and distinct ways, inviting perceivers to *look again*, to pay attention to things that we perhaps see every day or perhaps are surprising and novel, unique or even shocking. Egan and Gajdamaschko (2003, 89) note that the teacher can present almost any object as 'an object of wonder'. They see the teacher as able to position or present the object for consideration in such a way that it brings out 'the strange and wonderful in what seems routine or taken for granted' (Egan 1997, 219; quoted in Zazkis and Zazkis 2014, 68). The art teacher is very well positioned to do this through the artistic mediums that engage various senses; of touch, sight, sound and movement. In this way, engaging with art often involves broadening our perception in so far as we make use of various senses and focus them on particular art objects in order to attend to them, to receive the aesthetic experience they may have to offer us, and, possibly, hopefully, be open to the experience of wonder that may also result from this encounter.

Egan (2014, 157) wants to extend such wonder-full educational experiences so that every subject is enhanced by them. He wants to see wonder-full educational moments across the entire curriculum. He writes:

> It would seem that a curriculum chosen to bring out the sense of wonder will likely incline us to select content that exemplifies the extremes of human achievement and natural phenomena. But it can also direct us to bring out the wonder of the everyday world around students. Much of the world is so taken for granted that it is hardly noticed.

Yet, he argues, by making the familiar strange, students may experience the wonder of, for example, nails and screws. Now, it may be that Egan is being optimistic here; however, through art, I can see a clear way that artist's use and depiction of, say, nails and screws, *can* invite students to *look again* – to perceive

such everyday objects differently and open them to the feeling of wonder and surprise that results from this encounter. In this way art teachers may play a positive role in creating wonder-full educational moments of the kind Egan and others describe, and to which Schinkel claims education should aspire.

Movements such as 'everyday aesthetics' (Saito 2019) that have emerged from Dewey's (1934) pragmatic conception of the arts sees aesthetic experience as an extension of ordinary experience. On such views, the connection between natural (human) perception and experience and aesthetic appreciation or experiences is highlighted. Such theories provide support for the inclusion of the arts in the curriculum as something *everyone* can enjoy and engage in, even if not everyone is likely to consider themselves as an artist. Laura-Lee Kearns (2015, 99) also sees the connection between attentive perception, wonder and the arts. She writes: "[B]y (re)awakening our attention to wonder, I hope to begin to elucidate the benefits of fostering a deliberate effort to wonder in our everyday experiences" and further connects the education of the artistic imagination with moral purpose:

> Any pedagogy that chooses to recognize the whole person would have to include the arts as integral to the curriculum. One's active participation in the arts, whether it be making, viewing, analyzing, discussing, or wondering, brings us closer to living harmoniously with ourselves and others. (Kearns 2015, 115)

Drawing upon Rousseau's conception of childhood, Nussbaum also provides a naturalistic connection between children, the natural world and their sense of wonder. She gives the example of a child learning the song 'twinkle, twinkle, little star, how I wonder what you are' and claims: "In learning such a song, the child develops further her already present sense of wonder – a sense of mystery that mingles curiosity with awe." (Nussbaum 2001, 427). Even when fictional, the receiver of the artwork must draw upon their own experiences in order to make meaning, and, in so doing, artworks connect to reality, and to the everyday (Greene, 2001, 81-82). Thus, the perception honed by attending to art may be applied to that which is *generally* there to be perceived. This receptivity creates space for the experience of wonder. In this way, the arts are able to offer educational experiences well suited to the experience of deep wonder that prompts a sympathetic way of perceiving others and the world.[9]

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9 Elsewhere, I have argued teachers should use artworks, particularly narrative artworks, to stimulate and provoke philosophical dialogues with students, that engage them in critical and compassionate ways. See D'Olimpio (2018) and D'Olimpio and Peterson (2018).

If this connection between the arts and an open, receptive mode of attention is accurate, and if such a mode of attention also primes us to be more receptive to the experience of wonder, then the arts are a good vehicle through which to prompt wonder-full experiences. If we wish for children and young people to cultivate this mode of perception that supports wonder-full experiences, then the arts are conducive to this purpose and may be used in this way in an educational manner. If the arts are included in the school curriculum and students spend time on art making, creative play, aesthetic education (which includes aesthetic theory as well as art history), and art interpretation, then more opportunities arise for them to experience wonder and to be receptive to wonder. This, in turn, may invite and encourage an open, receptive mode of perception that includes the practice of one's sympathetic imagination.

Conclusion

Education that fosters wonder-full experiences and encourages students to be open to experiences of wonder in their lives is valuable. Even if we cannot directly *teach* students *how* to wonder, we may create the conditions conducive to wonder, and we may encourage students to adopt an open, receptive mode of perception that is amenable to experiencing such wonder-full moments. In this chapter, I have defended the arts as an important vehicle for prompting the experience of deep wonder due to the ways in which they present concepts, images and ideas in new and creative ways. Such artistic depiction encourages those engaging with artworks to adopt a certain way of seeing; a mode of perception that is open and receptive and thus likely to result in feelings of wonder. Art teachers may support students in learning how to see what is there to be seen in artworks and they may role-model the open, receptive mode of perception required to *see* in this manner; a manner which is conducive to experiencing wonder in relation to the artworks encountered. As such, by creating space for the arts on the school curriculum, we also provide opportunities for wonder in educational settings.

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12 Cultivating a Mindset of Wonder: A Narrative Analysis on the Mechanisms of Seeing the Extraordinary within the Ordinary[83]

Jacky van de Goor, Anneke M. Sools and Gerben J. Westerhof

Introduction

In this article we dive into the mindset of wonder as a means to experience meaning in life. Meaning in life is a basic human need and crucial to well-being (e.g., Frankl 1969; Mascaro and Rosen 2005; Reker, Peacock, and Wong 1987; Ryff and Singer 1998), yet is increasingly under pressure. It is suggested that, in a world of acceleration, reason and rationality, one may easily become alienated or indifferent and lose a sense of existential wonder and meaning in ordinary life (Heschel 1976; Jenkins 2000; Rosa 2013). While education traditionally focuses on cognitive wonder (Hakkarainen and Ferholt 2013; Miyazaki 2013), it is through existential wonder that education may contribute to a sense of meaning and moral development (L'Ecuyer 2014; Musaio 2012; Schinkel 2018). Existential wonder is an emotion that may befall us, but is also a *mindset*: an intention to see the special and meaningful in the ordinary and everyday (Bennett 2001; Vasalou 2015). Though theorists have emphasised the importance of this mindset in education, empirical studies on the mindset of wonder and the way it may be cultivated remain scarce. In this article, we investigate the way this mindset works, by analysing the construction of meaning in memories of familiar routines.

Our investigation into the mindset of wonder focuses on familiar routines for two reasons. First of all, familiar routines are relevant because of their paradoxical relation to meaning and wonder. On the one hand, familiar routines have the potential to enhance meaning in life, giving ordinary life a sense of

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purpose and coherence; as such being "a mechanism by which we can fulfil one of our deepest, most fundamental motivations –to feel as if our lives matter" (Machell, Kashdan, Short, and Nezlek 2015, 295). On the other hand, the recurring nature of familiar routines may just as well cause us to take them for granted, thereby contributing to feelings of indifference and a loss of meaning and wonder. It is precisely this paradox that this article primarily explores: by studying the mechanisms of meaning construction –the way familiar routines become meaningful instead of meaningless –we aim to gain insight in the mindset of wonder.

Second, we note that familiar routines are not only of value to study the mindset of wonder but are also inherently part of our educational systems. Insights on meaning construction in familiar routines may therefore also directly be of value to re-enchant educational routines that have lost their vitality.

This paper builds on to a previous study on meaning construction in memories of familiar routines (Van de Goor, Sools, and Westerhof 2018) – a study focused on meaning in life and meaningful routines in general, not specifically in the context of educational institutions. The method and results presented here are from this previous study; in the discussion the insights from this generic study are translated to the domain of education and schooling, and to the cultivation of a mindset of wonder within this domain. In this introduction, we first describe the familiar routines that are the focus of this study. After this, we elaborate on both sides of the meaning paradox of familiar routines: on their potential to elicit meaning as well as to become meaningless. Finally, we introduce the narrative approach we adopted to investigate this paradox, focusing on the way meaning is constructed in the memories of familiar routines.

Familiar routines: a description

While the meaning potential of daily activities has been recognised in various studies, (e.g., Machell et al. 2015; Steger, Kashdan, and Oishi 2008; White and Dolan 2009), here we specifically focus on familiar routines. Familiar routines are moments that are *familiar* because they are known and ordinary, i.e. "to be expected in the normal order of events" (Merriam Webster n.d.), and *routine* because of their repetitive nature, recurring more or less frequently over time. Drawing on narrative psychology, familiar routines can be classified as *generic* moments, which are distinguished from *specific* moments that are single-event and unique in their occurrence (Singer and Blagov 2000). Generic moments "are composed of equivalent events that repeatedly occur over time intervals that are not themselves part of the memory. The events blend or fuse together, and they contain the same characters, settings, happenings, and emotions"

(ibid., 12). With regard to the scope of our study, we finally focus specifically on familiar routines in a regular, "life as usual" setting, that is not directly negative, threatening or precarious. In summary then, the familiar routines that are the object of this study are known and ordinary, to be expected in the normal order of events; they have a repetitive nature, occurring over time intervals that are not themselves part of the memory; and they take place in a setting that is not directly precarious.

The meaning paradox of familiar routines

In this paragraph, we address both sides of the meaning paradox of familiar routines: how they may be experienced to be meaningful and how they may lose meaning. First, we integrate literature from the fields of psychology, religion and spirituality in two distinct viewpoints on familiar routines as a source of meaning. After this, we switch to the other side of the paradox, giving a short overview of the way familiar routines may just as well become mechanical and meaningless.

After Frankl's call for the recognition of meaning as our basic striving (Frankl 1969), many studies on meaning have followed, leading to a variety of models and definitions. Two aspects of meaning life seem particularly relevant in relation to familiar routines, i.e. the experience of *purpose* and *coherence* (King, Hicks, Krull, and Del Gaiso 2006; Martela and Steger 2016; Reker and Wong 1988; Ryff and Singer 1998; Steger 2012). Where purpose refers to values and long-term aspirations in life that motivate action, coherence refers to the comprehensibility of life, to an implicit order that transcends chaos.

Reflecting on the meaning of routines in relation to *purpose*, it is relevant to distinguish the ritual and instrumental function of routines. Where instrumental routines are utilitarian by nature, ritual routines are aimed at a higher purpose, e.g. the expression or experience of individual or group identity, culture, religion, spirituality or values (Heinze 2000; Hobsbawm and Ranger 2012; Spagnola and Fiese 2007). In their study on family routines, Spagnola and Fiese (2007) clarify this difference by the effect of their disruption: while disrupted instrumental family routines may cause a hassle, disrupted rituals threaten family cohesion. They note how the instrumental and symbolical, ritual function may be found together in one routine. Ganzevoort and Roeland (2014) exemplify this by showing how the routine of gardening, apart from its instrumental function, may become a devotional activity, setting the stage "to receive life as a gift" (ibid., 92). In education, routines as rituals are found in the form of celebrations, ceremonies and rites of passage, recognised as 'reinforcing behaviours' that are of value to communicate and strengthen school identity and the connection to shared values (Hobby 2004). The instrumental aspect of routines

clearly relates to the educational practice of repetition, which is taken to be the secret to mastery and perfection of skills (Montessori [1909] 1986).

Next, we shift our attention from routine as a purposeful practice to routine as an experience of *coherence*. Meaning may simply be experienced when life and the world makes sense (Heintzelman and King 2014a; 2014b). Coherence refers to this sense of order, of an underlying pattern beyond the factual and visible. It is a sense of rightness (King 2012), an experience of confidence when what happens is predictable and explicable (Antonovsky 1987). Coherence may be considered cognitively as well as spiritually: as the self-transcendent awareness of the way we are part of patterns and cycles at a higher, holistic level (e.g. Frankl 1966; Maslow 1971; Reed 2008; Van de Goor et al. 2020).

The routines we create often follow natural cycles of life, relating to rhythms of the day, season, year or human life phases. As they pattern our life by means of expected repetitions, they provide ways to comprehend and connect to life and existence (Romanoff 1998). Creating coherence is also found to be an important function of routines in the educational context: routines are mentioned to give children a sense of security and order, 'as the children can anticipate what comes next' (l'Ecuyer 2014, 4). Within therapy, coherence is also an orienting principle, aimed at providing structure and order in the context of chaos, trauma or loss (e.g. Gillies and Neimeyer 2006; Neimeyer, Herrero, and Botella 2006). Familiar routines may help to accept and appreciate the cycles of life, stimulate agency, give hope and facilitate healing (Ganzevoort and Roeland 2014; Imber-Black 1991; la Cour et al. 2009; Mattingly 1998). They connect us to traditions as well as to the transcendent meaning of our existence, to "something beyond the self" (Address 2005, 224).

In sum, a routine may be a rich source of meaning, an experience of purpose or coherence. On the other hand, a familiar routine may just as well become mechanical and mindless, and it may be a challenge to see the wonder in the familiar (Schinkel 2018).

Because of its ordinariness, its repetitive nature, a familiar routine may become a *habit*, i.e. an automatic response to a specific contextual cue (e.g. Verplanken and Orbell 2003; Wood, Quinn, and Kashy 2002). Though habits are intentional and purposeful in their origins, they lose this intentionality in their execution, and are performed with less awareness or consciousness, and less thought and emotions (Bargh 1994; Verplanken and Orbell 2003; Wood et al. 2002). This is more likely to happen to routines that recur frequently, for example on a daily basis; though we may just as well become indifferent to less frequently recurring routines, such as an annual family dinner. Heschel warns for this anaesthetising effect of our over-familiarisation with life and reality,

pointing out how routine may become spiritual poison, as "life is routine, and routine is resistance to wonder" (Heschel 1976, 49).

In education, this deadening effect of routines has also been recognised; l'Ecuyer (2014) even mentions how routines can be problematic to children's development. When there is no wonder involved in the routine, she states, when children perceive the routine as a mere repetition of acts without meaning, it becomes alienating, and learning becomes a mechanical process. In her article, she quotes Thomas Moore (1997), who said that "education is not the piling on of learning, information, data, facts, skills, or abilities— that's training or instruction – but is rather making visible what is hidden as a seed."

So what prevents us from becoming indifferent to familiar routines, but instead causes us to value them as meaningful moments? Within the body of literature, several studies mention meaning construction to be a mindset, a deliberate focus and awareness, a passion of inquiry directed to the familiar, the taken-for-granted, in such a way that the extraordinary becomes visible within the ordinary (Bennett 2001; Vasalou 2015). This meaning-constructing mindset is also referred to as the mindset of wonder (Van de Goor et al. 2020; Vasalou 2015) or awe-based consciousness (Schneider 2004). Machell et al. (2015) suggest that this mindset may be stronger in the context of depression or negative events in life, as people in these circumstances might be more sensitive to daily events that boost meaning. The study of la Cour et al. (2009) supports this idea, showing how the awareness of the end of life may lead to the construction of new meanings in familiar, instrumental routines like cooking. On the other hand, Emmons (2000) refers to this mindset as an intelligence, a character trait, an ability "to invest everyday activities, events, and relationships with a sense of the sacred" (ibid., 30). While these studies show how the meaning construction mindset may be related to specific contexts or personal qualities, we assume it to be natural to all human beings, as part of ordinary life. But how then does this mindset work –how does the enchantment set in? Therefore, we shift our attention to how meaning is constructed in memories of familiar routines. In the next paragraph, we introduce the narrative approach we have taken to answer this question.

A narrative approach to meaning construction in ordinary life

To study the meaning construction in familiar routines, we take a narrative approach, focusing on memories of familiar routines that are shared with others. It has been proposed that narrative is the mode par excellence by which humans construct meaning (e.g., Bamberg 2012; Brockmeier and Carbaugh 2001; Bruner 1991). Narrative psychology accepts that we live in a storied world and that we make sense of events and give meaning to life through the sto-

ries we exchange (Gergen 1994; Murray and Sools 2014). However, within the larger field of narrative inquiry, there are different approaches and conceptualisations of narrative. Over the last decades, the usefulness of narratological and structuralist approaches to narrative for understanding storytelling in everyday life has been critically reviewed. For the purpose of understanding the way meaning is constructed in memories of familiar routines, we find the dimensional approach to living narrative, such as the so-called big and small story approach, particularly relevant (Bamberg 2006; Georgakopoulou 2006; Ochs and Capps 2001; Sools 2012). This dimensional approach can be taken to depict text sorts, to sites of locating narrative, and may be applied as an analytical lens for investigating stories. As a text sort, small stories are literally short in contrast to whole life stories. As sites of engagement, small stories draw attention to under-represented narrative activities such as tellings of ongoing events, future or hypothetical events, seemingly uninteresting small incidents and taken-for-granted truths (Bamberg and Georgakopoulou 2008). This small story approach is aimed at understanding those other stories "that are still in the fringes of narrative research" (Georgakopoulou 2007, 36), changing the focus from narrative as product to narration as a process (Sools 2013). Importantly, a small story approach stretches the definition of narrative, and diverges from the dominant focus on sequence and emplotment as key features of narrative. The dimensions of this approach, on which stories may vary from big to small (Ochs and Capps 2001; Sools 2012) are:

- tellership: personal experience of one narrator versus shared experience by multiple narrators.
- tellability: the degree to which a story or incident is worth telling as judged by the narrator.
- linearity/temporality: the time focus and manner of ordering in the story, varying from a past oriented, closed, causal path to other ways of ordering, including thematic and spatial orderings, and a focus on hypothetical, future or ongoing events.
- embeddedness: the extent to which the narrative stands on its own or is part of local discourse contexts.
- moral stance: the way the moral meaning of events is pieced together, varying from constant to uncertain, fluid and dynamic.

Regarding these dimensions, memories of familiar routines typically have both big and small characteristics. They may be small in the sense of being brief accounts of short incidents, rather than lengthy elaborations. They are typically big stories in the sense that they are retrospective accounts of past experiences. In the way these memories are ordered, they may take the shape

of a linear account of how events evolve over time from beginning to middle to end (big story) or may be ordered differently (small).

When it comes to the meaning paradox of familiar routines the dimension of *tellability* is of particular interest. Events become tellable when they are significant, surprising or unusual, and worth reporting – which is typical for big stories. A story with low tellability will have events that are expected or taken for granted, they are 'no big deal' (Ochs and Capps 2001). In the above-mentioned literature on familiar routines, we find support for both high as well as low tellability. Familiar routines may be highly tellable because they are experiences of coherence or have been created to be valuable intentional actions. At the low end of tellability, they are ordinary, not unique or surprising; as familiar routines may be instrumental, become habitual and thereby not worthy of telling. Thus, the dimension of tellability seems particularly apt to address the meaning construction paradox of familiar routines and to gain insight in the mindset of wonder. In this study, we therefore use tellability as a lens to discover how memories of familiar routines are constructed to be meaningful.

Method

As mentioned, this paper makes use of data that has been collected and analysed in a previous, generic study on meaning construction in memories of familiar routines (Van de Goor, Sools and Westerhof 2018) in a wider context than merely educational institutions. A qualitative, exploratory method was used to elicit memories of meaningful familiar routines, and a narrative analysis was performed to investigate how these memories become tellable.

Data collection

The memories of meaningful familiar routines in this study have been collected by means of the Wonderful Life question: *What if there is an afterlife? There, all your memories will be erased, except for one. Which memory do you choose to take with you to eternity?* This question, derived from Hirokazu Koreeda's movie *After Life*, has proven to be a powerful way to elicit meaningful moments that stick out in the evaluation of a whole life, without directing to specific types of experiences (Van de Goor et al. 2020). It elicits a great variety of memories of meaningful moments, both intentional and unintentional, special and ordinary, and in positive as well as negative settings. Memories describe major life events like marriage, death, depression, severe illness and childbirth, as well as encounters in nature, trips and travels and more common, everyday-like moments like

meetings with family or friends. Familiar routines have been distinguished as a specific category of meaningful moments elicited by this question (Van de Goor et al. 2020). These memories, that fit the description of familiar routines as given in the introduction, differ from other categories as they do not form a contrast with the known and familiar (as is the case with memories of unexpected, unusual and unique moments), nor do they stick out in a negative, precarious setting.

The Wonderful Life question was put to people in workshops aimed at personal development. The workshops were held with a diversity of people from different worlds, varying from professionals in leadership training, students, homeless people, to women living in a women's shelter and festival-goers. In the workshops, participants were asked the Wonderful Life question, after which they were given some time alone to choose a memory. The memories were then shared in the group and recorded with a data recorder. People were asked to recount their memory like a film clip, giving as much detail as possible, but without explaining their choice or describing the wider context in which the 'film clip' took place. The other participants were asked to listen to the story without intervening; only the workshop facilitator asked occasional questions for the purpose of clarification or to 'zoom in' on an essential part within a longer 'film clip'. Thus, a 'poetical space' was created for participants to go back in their memory and derive meaning from it. In this way, we collected a total of 116 memories of meaningful moments in sixteen different workshops; all of which have been transcribed and for which consent has been obtained. From the total dataset we selected thirteen memories in the category familiar routines, adhering to the criteria of familiar routines as described in the introduction.

Narrative analysis

To analyse how the collected memories of meaningful routines become tellable, we use the heuristic devices of *evaluations* and *breach*. Evaluations focus on what is mentioned in the narrative about the way the event is subjectively experienced by the narrator, relating to personal beliefs, desires, values and emotions (Bruner 1991; Fludernik 2003; Labov 1972). Both the *nature* (i.e. the tone and character) of the evaluations and their *manner of appearance* in a narrative provide clues as to how an event is experienced (e.g.,. significant, unusual or surprising). Evaluations may be specifically and clearly stated, or they may be implied. The distinction between embedded and external evaluations (Labov 1972) is also of interest to our study. Where embedded evaluations are descriptions of feelings and values of a narrator within the narrative during the event,

external or extra-narrative evaluations are reflections by a narrator positioned outside the event who is commenting on the narrated situation.

Breach as a device focuses on the structural components of the narrative. It refers to a disturbance or fracture with the expected, the canonical or the taken-for-granted, that makes it worth telling (Bruner 1986; Bruner 1991; Murray and Sools 2014). The breach arises out of the imbalance between two structural components or storyline elements that make up the narrative: the setting/scene (where?), agent/character (who?), acts/events (what happens?), means (with what help or hindrance?), and purpose/goal (what for?). It is this imbalance that motivates the story and makes understandable how the storyline elements are connected into a meaningful whole (Burke 1969; Murray and Sools 2014).

As far as evaluations are concerned, we analysed the nature of the evaluations that appear in the memories and how they appear in the course of the moment. To this end, we first coded all explicit and implicit emotions, feelings, values, desires and beliefs within the narrated moment before clustering them into groups of similarly natured evaluations. Also, we coded the way the evaluations manifest themselves in the course of the moment, discerning embedded evaluations from external evaluations. To discover the breach within the memories of familiar routines, we performed a storyline analysis as developed by Murray and Sools (2014), focusing on the above-mentioned storyline elements: setting/scene, agent/character, acts/events, means, and purpose/goal. First, each storyline element was identified and characterised, and missing elements were detected. Next, we determined whether a breach could be found between two story elements, and if so, we summarised the breach in one sentence.

In both the analysis on evaluations and breach, we critically regarded the influence of the researcher in her role as workshop facilitator, i.e. the dimension of *tellership* of the small story approach. Tellership describes the involvement of conversational partners in the process of narration. Where the big story approach focuses only on the main narrator, an in-depth yet decontextualised analysis of personal experiences, the small story approach shifts attention to co-construction by multiple narrators. In the analysis of our data, it is important to recognise that the researcher may have influenced the course of the narrative by intervening in its flow or by asking the narrator to zoom in on specific events. Therefore, our analysis focuses on the small side of this dimension, and interventions by the researcher have been analysed separately.

The analysis was performed by the first author of this article and then discussed with the second and third author to establish intersubjective agreement.

Results

To give an impression of our data, we first present a general overview of the characteristics of the thirteen memories of meaningful familiar routines in our study. Next, we present our findings concerning the evaluations and breach, which culminated in two types of memories of familiar routines.

General overview

The familiar routines in our study are from nine female and four male adults, varying in age from mid-twenties to fifty. They all describe moments of family life involving close family members: parents and grandparents, partners and children. The narrator is never alone. Ten memories are set in or around the family home or the home of a family member, describing routines like family visits, Sunday morning hugs and frolics, coming home, and caring for children. Three memories are in a setting that is leisure related, describing a holiday or summer routine: a walk in the woods, boating and sailing. Six memories are childhood memories; the other seven describe routines in the narrator's adult life. The descriptions tend to be short, varying from a few sentences to several paragraphs. All of the memories consist of positive feelings and values like safety, calmness, feeling connected, freedom, love, warmth, energy, flow, aloneness, completeness and goodness.

Finally, we look at the attributes related to purpose and coherence: ritual vs instrumental in relation to purpose, and patternedness in relation to coherence. While all memories have been found to have ritual characteristics (e.g. celebrating), ten memories also feature an instrumental function (e.g. preparing food). The patternedness of the memories relates to both cultural and natural cycles. Their recurrence varies from frequent, (the routines being part of daily life) to infrequent: (recurring on a yearly basis, e.g. relating to seasons such as summer or the Christmas holidays).

Two types of memories of familiar routines

On the basis of the analysis of evaluations and breach, two types of familiar routines could be distinguished in the memories: routines of transition and routines of harmony. Where routines of transition describe a buildup of events or a transformation over time from one state of being to another, routines of harmony describe a stable situation with solely positive evaluations. In table 1 an overview of the frequency and characteristics of these two main memory types is presented, followed by an in-depth description of how these types differ with regard to the use of evaluations, the way the breach is narrated, and the

way these are co-constructed between narrator and researcher. These variations within and between the two types are illustrated by means of six memories. In order to facilitate referral, each memory has been given a number and a name.

Table 12.1 Two types of memories of familiar routines

	Memory no.	Characteristics
Routines of transition	5	• Transition in time, sequential buildup of events • Evaluations – express a polarity: two complementary or opposing evaluations – emerge in the form of a transformation from one pole to another, sometimes higher valued pole (e.g. aloneness → togetherness) • Breach – between instrumental act and higher purpose – temporal breach that sequentially unfolds; the instrumental act enables the transformation from one pole into another
Routines of harmony	8	• Stable situation without a buildup in events • Evaluations – solely positive embedded evaluations, emerging simultaneously, in two forms: – as a balanced polarity between two complementary or opposing evaluations or poles (e.g. safety ↔ freedom) – only one single positive evaluation – contrast may emerge between embedded evaluations and external evaluations • Breach – may be implied between instrumental act and higher purpose – non-temporal breach: the instrumental act enables (opposing) evaluations to emerge simultaneously

Routines of transition

Memories of this type describe the transformation from one state of being to another, often a more favourable state. These memories contain multiple actions or events in a clear sequence, resulting in a change or transformation. Looking at the nature of the evaluations and their manifestation in the course of the moment, we see how they appear as a polarity, i.e. two evaluations or poles that are complementary or opposite to each other. Examples of polarities that we have found are seriousness and playfulness, togetherness and autonomy, and reality and possibility. In memories of routines of transition, these poles appear sequentially, one evaluation transforming into another. In the memory below, 1 Coming home, we see how work/aloneness is transformed into togetherness/love.

1. Coming home (male respondent, middle aged)

The image or the film clip I see... It is a gentle day, a weekday. I am riding my bike home from the station... after work. My girlfriend has a cottage-like, little white house. I arrive home, put the bike in the shed, open the door, and... I'm just received with so much warmth... And yes, that is what I want to take with me. A, yes, just a harmonious and respectful relationship.

Facilitator: So you enter the house, can you describe that?

Yes, that's hugging, and just, a lot, talking through the things of the day. And then together, being together. And that.... Yes it just feels so full of love...

Facilitator: And what if we have to shorten the film?

The part where I come home. The memory I want to take with me is that lovingness.

Facilitator: How do we see that in your film?The moment I enter the house.

Identifying a breach always involves some degree of interpretation, but the relative brevity and sparsity of the memories made breach identification in this study particularly challenging. Sometimes storyline elements were missing or only described very briefly. However, despite these difficulties, we were able to identify a breach in all memories describing routines of transition, and more importantly the breach was consistently found between the acts and purpose.

In memory 1 (Coming home) for example, we have defined the breach as "finding love (purpose) by entering the house (act)". This breach was detected in the following way, taking into account the co-construction of the narrated memory by researcher and narrator. In this memory, "receiving the warmth" of "a harmonious and respectful relationship" is initially constructed as desired result or purpose, but it is not entirely clear what it contrasts with. Is it the situated possibility of *receiving* warmth, the lack of access to this specific relationship, or the unavailability of other potentially warm relationships? In the first part of the excerpt, the narrator sets up a series of seemingly mundane acts (riding his bike home, arriving home, putting the bike in the shed, opening the door), which at the same time suggest anticipation. Here, the seemingly ordinariness and instrumentality of the acts are in contrast with the meaning and value found in the result of this action: in the warm welcome, the love and harmony (purpose). The researcher then zooms in by asking the narrator to elaborate on the moment of entering the house, which is alluded to before but

not explicitly mentioned. The intervention is successful in that it elicits a more detailed account of the desired result, which gives further clues about what is so meaningful about that moment: "Yes, that's hugging, and just, a lot, talking through the things of the day. And then together, being together. And that.... Yes it just feels so full of love...". We learn in more detail about what constitutes "warmth" for him, e.g. "hugging", "talking through the things of the day", togetherness and a feeling "full of love". Next, the researcher requests to 'zoom in' by asking the narrator to shorten the film. The narrator then chooses "the part where I come home", thereby specifying the essential part of the memory: "that lovingness". In response, the facilitator asks, "how do we see that in your film?". In the narrator's reiteration of "the moment I enter the house" as the final act, we find extra support for the defined breach between act and purpose; the act transforming the situation to the desired state.

Although a completely different memory in terms of content, the breach in memory 2 (Raising the sail) is technically similar: a breach between act and purpose. We identified a breach between the utilitarian act of hoisting the sail, and the higher purpose experienced as a result of this: experiencing freedom and autonomy. In this memory, there is no co-construction between narrator and researcher that helps to define the breach, but we see how the narrator herself "zooms in" and highlights the essence of the moment by saying "raising the sail, yes, that moment". Similar to memory 1, Coming home, memory 2 features a simple act that serves as a transformative moment, leading to the higher purpose.

2. Raising the sail (female respondent, middle aged)

My moment, well, imagine, I... I have a boat. And I am on this boat, it's a sailboat, about 11 metres long. My family is on board, two daughters, my husband. And... we are going on holiday, and then we... usually, when the weather is good, we set onto the ocean, so it's clear blue weather, and there's a nice breeze. We navigate into the sluice here in IJmuiden, and after that the sluice opens, the sail is raised. You can hear the seagulls and feel the sun. And the... the moment the motor is turned off, that is the moment I would like to take with me. You know, just the sail, and me at the rudder, and the rest, well, yes they're on board, but that's of secondary importance. Raising the sail, yes, that moment.

Finally, as the examples above illustrate, we have found the breach in memories of routines of transition to emerge in a temporal way: the higher purpose emerges as a result of the instrumental act, after the instrumental act has finished. It is a breach that sequentially unfolds, the instrumental act enabling the transformation from one evaluation or pole into another.

Routines of harmony

Memories of this type describe a moment of harmony or wholeness: a stable situation that contains solely positive evaluations. Typical for these memories is that there is either only a single act/event, or multiple events that do not build up to a certain point. In the memory 3 below, In the meadows, this is the act of playing in the fields. With regard to the nature of the evaluations in routines of harmony, we found that the evaluations within one memory often express a polarity, as in routines of transition. In memory 3, we see a polarity between connectedness (safety, calmness, connection to each other and the land) and autonomy (playfulness, freedom from the rest of the world):

> *3. In the meadows (female respondent, mid-twenties)*
>
> *I choose the moment that I step out of the car with my two sisters and my father, at one of our meadows, cornfields, at the end of a beautiful summer day. It's twilight and still comfortably warm, the atmosphere is calm and safe. Going with my father to see how the grasslands and corn were doing at the end of the day became a weekly habit during the summer months. We would spend time playing calmly in nature, wearing a dress and boots, surrounded by the sounds of grazing cows, a summer breeze, humming insects, the car radio in the background. The feeling of connection to each other, to the soil that my parents worked, and freedom from the rest of the world. I think I was around eight years old.*

With regard to the manifestation of the evaluations in the course of the moment, we found the evaluations or poles to emerge *simultaneously* in the memories of this type. As there is no temporal buildup of events in the memory, there is also no temporal buildup in the evaluations. In memory 3 (In the meadows), we see how autonomy is experienced at the same time as the connectedness to each other and the land. However, it was not possible to find a polarity in every memory, as the descriptions were generally very short. In these cases, the evaluations seem to come together in one positive evaluation, e.g. happiness, as we see in memory 4 (Frolicking):

4. Frolicking (female respondent, mid-forties)

I have a very short memory. I am in bed with my family, with my husband and children. And they are frolicking delightfully. And... the, the love and happiness is overwhelming. And I am just enjoying that very much. Yes. That's the memory I want to take with me.

The results described above relate to the *embedded* evaluations within the memories: the evaluations in which the narrator takes position within the event. These were all found to be merely positive evaluations. However, in several memories that also contain *external* evaluations, a contrast emerges between the embedded and external evaluations, i.e. evaluations in which the narrator is positioned *outside* of the event, reflecting on the moment. While the embedded evaluations are all positive, the external evaluations have a different tone. This becomes clear in memory 5 (Together on the boat), in which the external evaluations are underscored. While the embedded evaluations are all positive, an experience of togetherness, they form a contrast with the external evaluations that emphasise how this togetherness is not to be taken for granted, and is absent in the here and now, in which the narrator is alone.

5. Together on the boat (female respondent, middle aged)

I just had a very happy childhood. And I was lucky to have that, because many children do not have happy childhood memories.

Facilitator: Can we cut to one scene in that childhood movie?

Well yes, that I am an only child, and I have... yes, a father and a mother. I lost them both at a very young age... And the part before that I want to keep with me very much. I don't know how clear I have to be about that, but yes, I just think that is very precious, that I just, experienced that so preciously.

Facilitator: You choose a whole period of your life. Can you choose a specific event within that period?

Well, that's difficult, everything was beautiful. Oh yes, that the three of us, my father, he was a carpenter, and he had made a boat, a rowing boat. And well, us three being on the water. [...] That's it actually, those were very beautiful moments, that boat with the three of us in it. And well, I would really like to keep that memory. The three of us being together.

Facilitator: And what happened there?

Yes, having fun, my father went fishing, I went swimming, I helped my father take the fish off the hooks and... throw them back into the water. And, and my mother she, yes, she was also with us, pleasantly, and she also went swimming with me,... and yes...

In this memory, the contrast between the embedded and external evaluations is clearly a result of the *co-construction* between narrator and researcher. We see how the researcher asked the narrator to 'zoom in' on a specific moment in her childhood: "Can we cut to one scene in that childhood movie?" and later: "Can you choose a specific event within that period?". From the answers to these questions, we learn what was so meaningful in the childhood of the narrator, i.e. being together with her parents: "us three being on the water", "those were very beautiful moments, that boat with the three of us in it", "The three of us being together." The probing question "And what happened there?" prompts the respondent to elaborate on the setting and acts that contribute to this togetherness: father, mother and daughter each doing their own thing, and also engaging in each other's activities: "my father went fishing, I went swimming, I helped my father take the fish off the hooks and... throw them back into the water. And, and my mother she, yes, she was also with us, pleasantly, and she also went swimming with me." While this "zooming in" by the researcher has elicited these embedded evaluations, the narrator herself "zoomed out", positioning herself outside the event and reflecting on her childhood, which led to the underscored external evaluations that emphasise the absence and unusualness of togetherness in the here and now. It is through this combination of zooming in and zooming out that a contrast emerges.

Finding a breach in memories of routines of harmony was even more challenging than in routines of transition; these moments generally being even more compact. However, in several memories of this type a breach between the same storyline elements as in routines of transition may be implied: between a simple, instrumental act and a higher purpose. In the following memory, 6 (Storytime), interpretation of the storyline elements in this way may lead to the

breach 'connecting the hearts (purpose) through reading a story (act)'. While the purpose is quite clearly mentioned by the narrator ("that moment of connection, with... with my heart and their hearts") and highlighted through the sentence "realising yes, this is what it is all about", the act is only briefly named ("I am reading to them") thereby possibly pointing to its smallness:

> *6. Storytime (female respondent, middle aged)*
>
> *I'm sitting in my youngest son's room, he is 18 months old, and... my other son is also sitting on his bed, he is three years old... It's after dinner, they both have taken a bath, they're in their pyjamas, and I am reading to them. And... that moment of connection, with... with my heart and their hearts, and realising yes, this is what it is all about. That's what I want to take with me.*

Other than in memories of routines of transition, we have found the breach in memories of routines of harmony to be solely structural and not temporal. In memories of routines of harmony, the instrumental act and higher purpose that constitute the breach emerge simultaneously – when the act stops, the higher purpose stops as well. In memory 6, Storytime, the heart of the mother and the children's hearts are connected in the *process* of reading.

Conclusions and discussion

How do we see the extraordinary within the ordinary? In this study we investigated the mechanisms of meaning construction in memories of familiar routines as a means to gain insight into the mindset of wonder. A distinction was found between routines of transition and routines of harmony. In memories of routines of transition, meaning construction is evidently related to the process of change: to the temporal transformation of evaluations within the memory, and to the contrast between the small, instrumental act and the higher purpose of the routine. In these routines, this breach sequentially unfolds; the co-construction between researcher and narrator helping to zoom in on this breach. Routines of harmony are stable, solely positive moments without a buildup in events. Our findings show how memories of these routines may be constructed to be meaningful through the simultaneous emergence of contrasting, complementary evaluations within the routine. As shown by the contrast between embedded and external evaluations in

the memories, memories of routines of harmony may also be constructed to be meaningful through the co-constructed combination of zooming in and zooming out, i.e. valuing the specific memory against a wider, contrasting context. Though less clear than in memories of routines of transition, in memories of routines of harmony a similar contrast may be implied between the small, utilitarian act and the higher purpose of the routine.

From these general insights on the mechanisms of meaning construction in memories of familiar routines, we now zoom out to the purpose of this study and ponder on how these mechanisms may be employed to cultivate a mindset of wonder in education. First of all, routines of transition show us the value of being aware of transformations, of changeovers between one state of being and another. Routines of transition in this way may be seen as miniature rites of passage within ordinary and everyday life. Looking at educational institutions, there are multiple examples of grand rites of passage, such as graduation or end-of-schoolyear ceremonies, and they are acknowledged for their value in reinforcing a culture for learning (Hobby 2004). But what about the cultivation of transitional routines to mark the smaller changes within the weekly or daily school cycle? What about rituals to mark the transition between courses, between activity and rest, between different forms of learning? A mindset of wonder may be cultivated by highlighting the different states of being and the different values that are inherent to the daily routines of the educational system.

Next, we look at routines of harmony. The narrative approach has shed light on the paradoxical, simultaneous appearance of opposing values and truths within familiar routines, thereby deepening insight in the way harmony or wholeness may be experienced. Though the fact that the analysis was performed on generally short memories raises questions about the validity of this finding, the awareness of this resolution of opposites – referred to in Maslow's later works as dichotomy-transcendence (Maslow 1971) – is a promising field for further study in relation the field of wonder and meaning. Where traditional education is typically focused on either-or thinking with single, right answers to questions, i.e. the 'known information question' (Hicks 1995), the cultivation of a synergetic and-and mode of thinking, stimulating the search for alternative possibilities and opening up to a multi-layered reality, is an opportunity to be explored. This idea aligns with Miyazaki's (2013) plea for teachers to 'give up being the adult who knows better' (ibid., 120) and cultivate the 'unknown question', which makes the familiar seem strange and stimulates exploration.

Alongside these insights, our study has pointed to the value of zooming in and out in the construction of meaning: between the routine and its wider context,

and between its instrumental and ritual function. Creating contrasts helps us see routines in a different, more meaningful light, with simple, instrumental acts of ordinary life as 'gateways to meaning'. Reflecting on this insight from the perspective of education, zooming out may be an important skill for teachers in creating a meaningful learning environment. For education, too, has the risk of disenchantment, and a focus on the instrumental aspect of learning may lead to a neglect of the higher purpose that it serves. It may offer a solution to the alienating effect of educational routines that l'Ecuyer (2014) warns against, as they may be perceived as mere repetitions of acts that seem to have no meaning. For what would happen if we strengthen the connection to the higher values that teaching serves? If teachers cultivate reading as a gateway to freedom, writing as a gateway to self-expression, and knowledge of history as a gateway to compassion? While in story 1 (Coming home) the door literally opens to warmth and love, education opens doors to development and growth. However, students will not see this wonder when teachers zoom in on the door, but only when they zoom out to the world behind it, to the world that this door leads to.

Awareness of everyday rites of passage, cultivating paradox, zooming out to the higher purpose of instrumental acts – our study shows how the mindset of wonder comprises at least these three elements. In this discussion we have given some examples of the way these insights may be put to use in educational institutions. But of course, education may also be referred to in a broader sense: as lifelong learning, personal development and 'Bildung'. How the results of this study may be translated to education in both of these senses constitutes a valuable field for further exploration.

Reflecting on our method, we align with the small story approach, agreeing that there is a great challenge to create a space for telling seemingly ordinary experiences (e.g., Sools 2012). As an intervention, the Wonderful Life question has proven to fulfil this need, highlighting not only the unique or extreme as meaningful, but also the small and ordinary. Additionally, its dual temporal focus is of interest, as it entails both an orientation to the past (a memory) as well as to the future (the afterlife). The Wonderful Life question as an intervention thereby relates to "the generation of a discourse of desire, that is, a discourse that creates images of a future that nurtures hope, excites and entices" (Gergen, 2006, 173). As such, the Wonderful Life question in itself is of value as an educational practice. While storytelling has been widely recognised as an important educational tool (e.g., Abrahamson 1998; Hobby 2004; Mello 2001), this study points to the specific value of storytelling in stimulating a mindset of wonder in the classroom. Educational rituals may be created in which students share

stories of meaningful moments by means of the Wonderful Life question – or a similar question.

Utilising this question as a means to gather data allowed us to collect familiar routines that are extremely meaningful: the Wonderful Life question sends us 'on holiday' (Freeman 2006) and activates a process of reflection. However, the lack of extra contextual and evaluative information in the data have restricted the scope of reflection on the construction of meaning. Additionally, we are uncertain whether our dataset contains sufficient memories for a saturated analysis, which leaves open the possibility that there are other ways of meaning construction in familiar routines than in the two types we have found.

Although our study on meaning construction in familiar routines raises new questions and is open ended, it provides deeper insight into the mechanisms of the mindset of wonder – insights that may be used to cultivate a mindset of wonder in education, and to re-enchant classroom routines that have lost their vitality. For, while routine may be spiritual poison that kills wonder, the opposite is true just as well: routine can be a spiritual potion that brings alive wonder and unveils the meaning of everyday life.

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13 Stimulating Children's Sense of Wonder via 'Communities of Dialogue': Case Studies from a Local Library[84]

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Introduction and context

Several studies show that processes of learning in both children and adults are enhanced when a form of inquiry-based learning is being used, which in general includes an element of 'wonder' (Pedaste et al 2015; Alfieri et al 2011). In a meta-analysis of 32 studies that describe inquiry-based learning, Pedaste and his collaborators note that wonder can be located in the 'investigation' phase of inquiry-based learning, among other processes the authors identify.[2] (Pedaste et al 2015, 52). In an attempt to operationalise 'wonder', Gilbert (2013) and Santi (2007) have described the following components: the ability to ask questions; to actively search for answers; to evade control and predictability; to find not 'the correct' answer, but answers for which one may find reasons; originality; creativity. In our empirical part of the article, we will use this list in order to illustrate children' appropriation of wonder.

The openness of children towards discovering the world through questioning can be explained in several ways. One of them is that the age of childhood is often considered as the age of big questions and great discoveries, both of them being associated with the perpetual stage of wonder and fascination, which the child experiences on a daily basis in her life journey. The wonder and fascination that manifests in the child in the face of daily problems is part of the

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2 The other processes mentioned by the authors are: "'resources', 'accessing data of their choice to address the question', 'sign system exploration', 'create', 'generate'" (Pedaste et al 2015, 52).

human way of being in the world. The attempt to decipher the immediate facts of life through clarifying the world's mysteries is an intrinsic part of the human condition. This attitude can suggestively be described by what Mircea Eliade calls the *orientatio* (orientation) phenomenon. Eliade assumed that there are two phenomena connected to the vertical situatedness of human beings. On the one hand, humans organise their entire existence around themselves, by placing themselves in the centre of a symbolism that provides consistency to the whole universe. On the other hand, during this process humans acquire the feeling that they are beings in a universe they perceive as infinite, and which they interpret with fascination and an attitude that we can consider as similar to wonder, as it is a fundamental attitude towards existence (Eliade 1978, 3). Eliade associated these feelings with the experience of the sacred, but we want to associate them with the wonder that humans have as an existential attitude, as an experience of thinking, as an initiation tool into the dynamics of life. Therefore, we situate this intrinsically human way of relating to the world in the very sphere of philosophical wonder.

Yet another fundamental landmark of the history of philosophy is that of Jeanne Hersch, who stated that "Wonder is an essential component of the human condition" (Hersch 1994, 6). We always try to get out of the box in terms of the convenience of thinking and place ourselves into a sphere where we ruminate about the most simple problems that torment, provoke and fascinate us, as beings situated in a world that conceals the mysteries to the same extent as it makes them known. This is an experience associated with knowledge, creativity and an authentic way of being in a world. We can therefore explain the fact that, through the lens of the history of ideas, we appreciate wonder as a fundamental human experience. This privileged status of wonder, as part of the creative attitude of humans, can be understood through Hersch' claim that "[e]ach of us possesses, strictly speaking, one's own philosophical experience: each time we are supposed to take an important decision we ask, often without realizing, philosophical questions. Five-year-olds ask philosophical questions; the same is valid for fifteen or sixteen-year-olds" (Hersch 1994, 6).

Stolberg (2008) describes three basic sources of wonder – physical, personal and metaphysical. The last one can be "prompted by any type of interaction, but the wonder evoked goes beyond a reflection on the original stimulus" (Stolberg 2008, 1960). Metaphysical wonder is mostly explored in the literature of 'philosophy for children' (P4C), a branch of applied philosophy that attempts to cultivate various competences in students at pre-university level. These competences range from logical and conceptual abilities pertinent to the development of critical thinking to building self-esteem, various degrees of personal development and the capacity for dialogue and to engage in relations

within a community (Lipman 2003; Worley 2011; 2012; Wartenberg 2013; 2014; Buckley 2011). *Our hypothesis is that, if we are to cultivate these competences, we should place a great deal of emphasis on stimulating students' wonder.*

Philosophical debates with children may follow multiple aspects:

1. The first one aims to cultivate a particular type of thinking "that is generated by a specific form of rational conceptualization developed on epistemological operationalization of wonder and doubt as research engine" (Santi 2007, 110). It associates wonder with critical thinking and its orientation towards participants' attitudes that are open towards dialogue.
2. Another aspect of philosophy for children is what Peter Worley calls its 'transformative power': the ability of philosophy (in general) and philosophy for children (in particular) to change the normal things and concepts surrounding us and see them from a different (and to some extent enhanced) perspective, without modifying them in a physical way. We believe P4C is also capable of transforming the participants to dialogue: both children and facilitators are enriched after the P4C sessions and their values and attitudes become more open, tolerant and critical. This special type of interaction has been revealed by Worley, when he states: "I like to think that philosophy has an alchemical power and, just as the alchemists of old believed that one could change base metals into gold, the philosopher has the power to change the banal into something sparkling with interest, revealing a wonder about things towards which wonder may have been lost, even for the teacher too." (Worley 2011, 50).
3. A third aspect that is fostered through the interactions in the sessions of the philosophy club is participants' (particularly children's) autonomy. Children are usually considered as not-entirely-autonomous participants to dialogue; nevertheless, they are undergoing a growth process that includes their autonomous faculties. By being themselves immersed in the dialogue with their peers and facilitators, children are able to reproduce and reflect on this dialogue in themselves (by developing their inner dialogue), which contributes to the development of their moral autonomy (Sprod 2001).

To better describe our own approach in P4C and to give a more accurate name for what we do in Cluj with the children participating in our workshops, we have coined the term 'community of dialogue' (*CoD*). However, there are several approaches that are traditionally used in P4C. The main concepts that are used to describe the approach of working with children include: 'Community of Inquiry' (*CoI* – Lipman 2003, Sharp and Reed 1992) and 'Philosophical Enquiry' (*PhiE* – Worley 2012). Each has their own merits, which have been well detailed in the literature and are visible in the communities of practitioners.

The *CoI* places together the facilitator and the children in an attempt to foster children's ability to formulate questions that are increasingly deep, considerate and philosophical, and to encourage them to find answers that are justified, reasoned and collaborative. *PhiE* gives the facilitator the prerogative of asking philosophical questions and guide children in finding connecting and coherent answers. However, both approaches have, in our view, some limitations: *CoI* may often end up in repetitiveness, and children's questions and answers may not always be as philosophical as intended by the facilitator (Shapiro 2012; Lewis 2011). While *PhiE* does a better job in enabling and directing a philosophical conversation (Frunză 2019), its content remains and its success is (mainly) evaluated according to the standards of analytical philosophy, leaving outside some values and standards that are closer to continental philosophy.

The *Community of Dialogue* (*CoD*) does justice to the type of conversation we engage in with children during our meetings, and establishes the standard we attempt to look towards, even if in practice it is only rarely fulfilled – not only in philosophical conversations with children, but among philosophers themselves: that of (Socratic) dialogue. By referring to and integrating the ideas of several authors that we particularly cherish (namely Martin Buber and Emmanuel Levinas), we also attempt to open our dialogues with children towards the values of continental philosophy that we aim to infuse in our contribution: those of tolerance, of openness, of seeing the world through the eyes of the Other(s)[3].

The *Community of Dialogue* (*CoD*) values both the mutual recognition that participants in a dialogue owe to each other and the face-to-face relation that makes this recognition simultaneously functional and transforming. On the one hand we claim, as does Buber (1970), that placing children inside the dialogic relation brings about a valorisation of the reflections that are found inside the questions each participant asks for themselves and for the others. The dialogical relation also brings with it recognition of the quality of the meanings in the answers searched for in common, as possible solutions to the problems discussed.

This integration of each participant in the unity between question and answer determines that each member of the philosophical community resignifies both the content and the meanings of the texts discussed through dialogue. We mean that the face-to-face dialogue, through the lens of a mutual

3 These values that we attribute to the tradition of continental philosophy are constantly emphasised during the P4C sessions through the attitude and behaviour of the facilitators: they must remain supportive of children, constantly encourage them to pay attention to what the others say, establish connections between children's interventions, ensure a climate of respect and mutual cooperation, etc.

recognition of each other's intrinsic value, contributes to the development of a reflective community capable of reaching sophisticated argumentation and useful conceptualisation for the philosophical endeavour. The presence of the other as a Face, in the way Levinas understood it (Levinas, 1969), opens the dialogue towards embracing an alterity that can be expanded from the authentic relation of a dialogue between an 'I' and a 'You' towards a community of dialogue. Dialogue places us in a face-to-face relation not only among ourselves, but also towards the problems we wonder about, and the problems we attempt to clarify and find answers to. We therefore reach a manner of entering the game of dialogue and of philosophical reflection.

Methods and data collection

We used as method what Stake describes as an 'instrumental case study' (2000). This is a qualitative approach that is oriented by the type of data we were able to collect. Our data includes, on the one hand, 19 reports of several monthly P4C sessions in which the researchers participated during 2018 and 2019, 16 of them taking part in one of the branches of the local library, three of them in a classroom. After each meeting, the facilitator recorded the most important details of the session using a template.

Each report recorded the number of children who attended each session, the materials used, the plan of the session, and any interesting answers given by the children that the facilitator remembered. Reports also included photos of the whiteboard (especially of concept maps, inquiry plans, results of voting, children's arguments) and a section for the children's feedback (if solicited and/or offered at the end).[4]

On the other hand, we add the qualitative analysis of a sample of sessions (4) conducted by the researchers during February 2019 and March 2019. This sample of sessions was audiotaped and transcribed, and subsequently analysed in order to study the wonder-related elements. All 23 (19 + 4) sessions were carried out at one of the five branches of the local library of our city, or at a high school from Cluj; they were attended by children (5 to 13 years old) who were either regular participants in the Philosophy Clubs for Children organised by the researchers at the library, or first-time participants of a demo workshop in P4C.

4 As a general unwritten rule, we always try to include a feedback slot at the end of a session; either via open discussions or through post-its; sometimes, due to external reasons (the room needed to be vacated and the children had to leave) there was no time to register their feedback, which is why it is missing in some cases.

The stimuli used in all 23 sessions (19 for which we analysed the reports and four that were audiotaped) were either literary stories that were recommended by P4C practitioners such as Thomas Wartenberg, or stories specially written by P4C practitioners who designed them to facilitate philosophical dialogue (for instance by Peter Worley, Jason Buckley or Tom Bigglestone), plus a non-verbal stimulus. All texts were translated to Romanian. As we asked the children to read them aloud and to take turns in reading them, we used Bigglestone's suggestion to use alternating bands of colour to facilitate taking turns reading the sections and ensure flow (Bigglestone, 2018).

The stimuli used in the audiotaped sessions were three stories invented by authors who also design P4C sessions: "What color are the feathers on my head?" (Jason Buckley 2011) "The Ceebie stories: Friends" and "The Ceebie stories: The Tony Test" (Peter Worley 2011).

The first story is one connected to knowledge. "What color are the feathers on my head?" is a story of a young penguin that has recently grown up and is unsure whether the feathers on the top of his head are black (like those of his peers) or grey (like when he was little). Not being able to reach a conclusion, he searches for different ways to find a valid answer: through observation, asking others' opinions, induction, deduction.

The second story is on friendship. "The Ceebie stories: Friends" analyses the relationship to objects and things and compares it with the relationship with human beings. "Friends" is a story of a boy, Jack, who doesn't have many friends. Jack considers books his friends, but this doesn't convince his father, who owns a robot company. Jack's father comes up with the idea to build a robot that can be Jack's friend, maybe along with the books. Jack likes the surprise his father made for him, as Ceebie can download anything from the Internet and he is also able to have any kind of discussion with Jack. So, they spend a lot of quality time. In the meantime, Jack has made a human friend at school, Tony, who makes him laugh all the time. Jack decides to show Ceebie to Tony, but Tony is jealous and says that Ceebie can't be a true friend because he is "made of plastic and metal and nuts and bolts".

The third story is on what defines personhood: "The Ceebie stories: The Tony Test" (a story inspired by the famous mathematician and computer scientist Alan Turing). Tony suggests to Jack that they perform a test to see if Ceebie is a true friend. Ceebie will be connected to a computer at Tony's house. Tony will also connect a person to the same computer, but Jack won't know who it is. Jack then has to have a conversation with both of them to guess who he thinks it is, a robot or a human being. Tony says that if Jack can't tell the difference, the test proves that Ceebie can think; and if Ceebie can think, he must be a real person. And if he is a real person, then he can be a true friend.

These three stories are examples of philosophical children's stories about important topics: how we can be sure of what we know, or what could be the relation between humans and robots? The stories encourage the children to wonder and have therefore been selected.

Results and discussions

Analysis of the 19 sessions

The 19 meetings took place between March 2018 and May 2019. They were facilitated by either the two authors (S1-S7, S9, S14, S16, S18-S19), other colleagues (S8) or students (S10-S13, S15, S17) enrolled in the Philosophy for Children university course, taught by one of the researchers. The main elements are found in the table below:

Table 13.1 The 19 sessions of P4C

Nr.	Date	Type of session	Number of children/age	Where	Stimulus	Other activities/ Feedback	Wonder-related displays (no. of children)
S1	03/27/2018	Demo	25 aged 8-9 years	Lucian Blaga High School	"What can you do with an idea?"	Yes (games)/ Yes	Few (1)
S2	04/17/2018	Regular meeting (no. 8/10)	11 aged 7-12 years	Mărăști Philosophy Club	"Tree of Wishes", part 2	No/ No	Many (6)
S3	05/15/2018	Regular meeting (no. 9/10)	11 aged 7-12 years	Mărăști Philosophy Club	"Tree of Wishes", part 3	Yes (games)/ No	Almost all children (9)
S4	06.07/2018	Demo	30 aged 8-9 years	Bălcescu High School	"Is it true or false?"	Yes (games)/ Yes	Few (1)
S5	06/12/2018	Regular meeting (no. 10/10)	12 aged 6-12 years	Mărăști Philosophy Club	"Tree of Wishes", part 4	Yes (games)/ Yes	Almost all children (9)
S6	06/26/2018	Demo	12	Alexandru Vaida Voevod music camp	2 pieces of music	NA	Few (2)
S7	10/17/2018	Regular meeting (No. 1/9)	16 aged 7-12 years	Mărăști Philosophy Club	"We are in a book!"	Yes (images, games)/ No	Many (10)

Nr.	Date	Type of session	Number of children/age	Where	Stimulus	Other activities/ Feedback	Wonder-related displays (no. of children)
S8	10/31/2018	Regular meeting (No. 1/9)	22 aged 6-12 years	Mănăștur Philosophy Club	"The Nightmare Before Christmas"	No/No	Many (13)
S9	11/14/2018	Regular meeting (No. 2/9)	12 aged 7-12 years	Mărăști Philosophy Club	"The Little Old Shop of Curiosities"	No/No	Many (8)
S10	12/11/2018	Regular meeting (No. 1/4)	28 aged 9-10 years	Kogălniceanu Philosophy Club	"The Little Old Shop of Curiosities"	No/ Yes	Few (5)
S11	12/12/2018	Regular meeting (No. 3/9)	9 aged 7-12 years	Mărăști Philosophy Club	"The Little Prince" chapter 2	Yes/ Yes	Many (6)
S12	12/18/2018	Regular meeting (No. 2/4)	27 aged 9-10 years	Kogălniceanu Philosophy Club	"Alone"	Yes (exercise, movie)/ Yes	Few (4)
S13	12/19/2018	Regular meeting (No. 3/9)	12 aged 6-12 years	Mănăștur Philosophy Club	"What is the meaning of an ant's life?"	Yes (images)/ Yes	Almost all (11)
S14	01/04/2019	Regular meeting (No. 4/9)	13 aged 5-13 years	Mărăști Philosophy Club	"The Prince and the Pig"	No/ Yes	Almost all (11)
S15	01/15/2019	Regular meeting (No. 3/4)	25 aged 9-10 years	Kogălniceanu Philosophy Club	"The Ring of Gyges"	Yes (prop)/ Yes	Many (13)
S16	01/17/2019	Regular meeting (No. 4/9)	6 kids, 6-12 years old	Grigorescu Philosophy Club	"The Princess and the Dragon"	Yes (games)/ No	Almost all children (5)
S17	01/22/2019	Regular meeting (No. 4/4)	28 aged 9-10 years	Kogălniceanu Philosophy Club	"The Prince and the Pig"	Yes/ Yes	Many (10)
S18	03/08/2019	Demo	28 aged 9-10 years	Mărăști Library, G. Coșbuc High School	"The Chair"	Yes (prop)/ Yes	Many (10)
S19	05/21/2019	Regular meeting (No. 8/9)	5 aged 7-13 years	Mărăști Philosophy Club	"Third Ceebie story"	Yes (prop)/ Yes	Many (4)

The number of children who participated in the 19 sessions varied between 5 and 30; their age ranged between 5 and 13 years (most of them being between 8 and 12 years). The stimuli used were either literary stories (S1-S3, S5, S7-S8, S11-S12, S16) or specially written philosophical stories (S4, S9-S10, S13-S15, S17-S19). One session included non-verbal stimuli, namely two pieces of music (Fantasy on a Fugue by J.S. Bach and the famous John Cage's 4'33"). Apart from the dialogues around the stories, some sessions included other activities (games, ice breakers, props, watching a short movie, etc.).

For the qualitative analysis of both the reports and the audiotaped transcripts we used several strategies of operationalisation of wonder, such as: the ability to ask questions, the ability to actively search for answers to the questions, the ability to evade control and predictability, the skills to find not 'the correct' answer, but answers for which the proponent may find reasons, and other features such as originality and creativity (Gilbert 2013, Santi 2007).

In the last column of the table, we recorded the frequency with which such elements of operationalised wonder were likely to be found during the dialogue with children. When less than half of the participants were able to show these elements of wonder, we termed this 'few' in the table, with their number in parenthesis; where more than half of the children displayed these elements, we entered 'many', also indicating their number; and finally, where above 80% of children displayed these elements, this was included in the table as well.

From the analysis of Table 1 – in particular cross-tabulating the last column and columns nos. 3 (type of session), 4 (number and age of children) and 6 (type of stimulus) we can note the following: when the children were used to P4C sessions and not first-time participants to demo sessions, their predisposition to display wonder-related elements increased. Also, during the regular meetings of the philosophical club, the age range of children varied more than in the case of school students who attended the demo sessions together with their classmates. This could also have a beneficial influence on the quality of philosophical dialogue, since a greater variety of ages implied a greater variety of experiences and consequently a greater diversity among the opinions they provided during the sessions. We have to emphasise that these characteristics are related, so it is not possible to distinguish the influence of each of these individually.

One last note is related to the type of stimulus used (literary vs specially written by P4C practitioners). While sessions that circled around specially written philosophical stories do seem to engage more children and stimulate their wonder (see in particular S13 and S14), some literary texts also seem to do a great job (see esp. S3, S5, and S17, where almost all the children participated and offered rich contributions to a high-quality philosophical dialogue). Although

a systematic study has yet to be conducted to validate this claim, our current experience seems to indicate that a greater variety of stimuli (using both literary stories and specially written philosophical ones) contributes to a greater extent to the development of wonder-related abilities in children.[5]

Audiotaped sessions

Table 13.2 The audiotaped sessions

Nr.	Date	Type of session	Number of children/age	Where	Stimulus	Other activities/ Feedback	Wonder-related displays (no. of children)
A1	02/01/2019	Demo	28 aged 8-9 years	Mărăști Library	What colors are the feathers on my head?	Yes (games)/ Yes	Few (2)
A2	03/14/2019	Regular meeting	14 aged 7-12 years	Grigorescu Philosophy Club	"The Ceebie Stories: Friends"	Yes (games)/ Yes	Many
A3	02/12/2019	Regular meeting	7 aged 7-12 years	Mărăști Philosophy Club	"The Ceebie Stories: Friends"	Yes (games)/ Yes	Almost all children
A4	04/18/2019	Regular meeting	9 aged 7-12 years	Grigorescu Philosophy Club	"The Tony Test"	Yes (games)/ No	Almost all children

Qualitative analysis of sessions, focusing on wonder-related elements

In this part, we provide and analyse some textual examples of verbatim quotes from the children that we took from all the sessions, and in particular from the audiotaped ones. The data was explored qualitatively; two researchers independently assessed the transcripts and identified the wonder-related elements,

5 We have used the same type of inference as that of Wartenberg (2013). He claimed that, the same way that adult students react differently and are stimulated differently by various philosophical subdisciplines – such as ontology, aesthetics, ethics, metaphysics, etc. – children are also likely to react differently to these topics: some are going to be more responsive to metaphysical dilemmas, and some to ethical ones. Wartenberg's advice was to include as many philosophical subdisciplines as possible in a P4C module. Although we have not properly tested this hypothesis in a controlled experiment, we have noted that different children react to different topics that are embedded in various philosophical subdisciplines, and in the long run, more children participated in a P4C module if more philosophical subdisciplines were included. The same seemed to be valid for philosophical vs literary stimuli: different children reacted to the topics and a greater part of children were involved during several sessions than if only one type of stimuli were used.

which were grouped according to the categories below. The quotes show the way in which children demonstrate all the elements that we pinpointed inside the general category of 'wonder', namely: the ability to ask questions, to actively search for answers for the sessions; to evade control and predictability; to find not 'the correct' answer, but answers for which one may find reasons and arguments; originality; creativity (Gilbert 2013, Santi 2007).

The ability to ask questions

Some P4C methods are especially designed to increase children's abilities to generate questions – for example, Lipman's (2013) followers include special intervals during the sessions when they ask children to ask questions, and in particular philosophical questions. Those questions are sorted using, most often, the question quadrant (Cam 2003) and the question with the most votes is discussed during the investigation. During several sessions the facilitators used this method (S2, S7, S11), and it is no coincidence that these were the sessions where the most children asked interesting questions.

Table 13.3 Examples of the ability to ask questions

Session	Ability to ask questions - examples	Comments
S2	"What does Something look like?"	One character of the story "Tree of wishes", when asked about his wish, does not want a specific thing, but "Something". He receives something that has no shape or form. The child asked about the properties of Something unspecified.
S2	"How has the leaf understood how many sweets are required to make someone sick?"	Another character from the same "Tree of wishes" wants to eat as many sweets as to become sick of it – a wish that is finally granted. The child inquired about the specificity of the wish – how come the magic object knew the exact quantity of sweets that would make someone sick?
S7	"How come the characters of the story do not hear us all the time?"	In the story "We are in a book!" the characters interact with the readers, as if they know how the readers will act. The child logically extended the inquiry to the possibility that the characters would hear readers all the time.
S11	"How many years does childhood take?"	When discussing "The Little Prince", the children wondered about what distinguishes a child from a grown-up person; and one of them asked this general question about childhood.
S16	"I don't understand: how can a dragon travel around the world in 10 seconds?"	During the session on "The Princess and the Dragon", one of the children considered the story is weird because of this fact. Although it is not formulated in the interrogative way, it is still a questionin progress.

The ability to evade control and predictability

One longer example from A2 in which children display this ability is when they easily brought into discussion the friendship with different other inanimate objects, like books, or animate but non-human creatures, like pets. As Worley (2011) also emphasises, the idea that one can befriend a robot is not a very intuitive one; however, from the examples below we can see the children are ready to explore many aspects of this idea and establish unusual connections:

> *Facilitator: Why do you think the robot can be a real friend to the child or to any person?*
>
> *Child 1: Because... robots and people, even if they are different, they still can play together.*
>
> *Child 2: I was thinking... The boy can learn a lot from the robot and the robot can learn from the boy, so they can be good friends. (...)*
>
> *Child 3: Me? I have a LEGO robot... actually I want to build one and I think it's very cool to play with little robots, especially because some of them can do things or take things and you can use them for different stuff. (...)*
>
> *Child 4: Me? ...I guess it's cool to have a little robot. Whatever is it made of, LEGO or anything else, because you can use it for many different things. (A2)*

During session A4, some children think it doesn't make sense for a robot to play games:

> *Child 2: I think it's a human being, because a robot can't have personal interests or preferences. It's a robot, it doesn't have free time. It shuts downs when Jack is not there, and it turns on and speaks to him when he's back. Therefore, it makes no sense to be a robot, and if you compare the answer with the previous one, the other one sounded very robotic, like an answer of an adult. ... (A4)*

Also during A4, finding themselves in the situation of not finding other arguments, children surprised the facilitator by searching arguments in the following part of the story:[6]

> *Child 2: No child would answer 'I'll be your friend', instead he or she would say 'Yes', or 'OK'.*
>
> *Child 3: For Ceebie it's normal, because he's programmed.*
>
> *Child 1: Or it could mean 'I'll continue to be your friend'.*
>
> *Facilitator: Anyone wants to plead for a human answer?*
>
> *Child 2: Only for the next test.*
>
> *Facilitator: You've already read the next test?*
>
> *Child 2: Yes. (A4)*

Also, children dismissed the idea the answer can be given by a robot, because of the words used: "I adore them!" Interestingly, these were not the exact words used in the test, this was a quote made from memory by a child, who possibly distorted things to help prove his or her argument. The discussion about playing against a computer was very interesting:

> *Facilitator: Have you ever played games?*
>
> *Children: Every day!*
>
> *Facilitator: Sometimes you play against a friend, sometimes against the computer, right? ... That proves a computer can play, right?*
>
> *Child 1: Yes!*
>
> *Child 2: No, it's programmed, it's not because it chooses to play, and it's not a robot, it's part of the game.*

6 Worley (2011) specifically recommends for this story to be read in sequences, and we have followed his suggestion, by asking children to stop reading at intervals and focus on what they have just read. However, some children disobeyed this request and continued reading to see how the story ends. In doing so, they clearly attempted to escape the facilitators' control, yet in a playful way.

Child 3: Yes, because a robot playing a game would probably mean a robot, with a console in his hanwds, looking at the screen and playing.

Child 4: A robot would think very strategically and would never let the players win.

Facilitator: Do you think so? You've never won from the computer?

Child 4: Oh yes! (A4)

When discussing the story "The Princess and the Dragon", one of the children was unhappy with the end of the story because the prince should have said "Thank you" for being saved instead of arguing about how the princess is dressed (S16).

The ability to actively search for answers in the sessions

During session A4, a very interesting topic brought up by the children was common sense:

Child 3: I think robots, even if they aren't human inside, they can still be friends.

Facilitator: You think they can be friends. Why do you think that?

Child 3: Because... A robot, even if it has no heart, it has a common sense. (...)

It's not clear from the children's answers if they meant to call a robot 'he', 'she' or 'it' as in Romanian one can use only the verb, and it's the same verb for all three forms. So we chose to use 'it' in the translation because it's a bit more neutral, but we are aware it could be wrong and they may have meant 'she' or 'he'. We continued trying to define common sense for a robot.

Facilitator: What do you think is common sense for a robot?

Child 1: I know!

Facilitator: Tell us if you know!

Child 1: Common sense means to be good with what you have.

Facilitator: Thank you!

Child 3: Common sense means to be respectful to others ...

Child 4: For robots, common sense or respect for others means to respect a set of rules that you have in your database.

Facilitator: So common sense means to respect a set of rules that everybody respects you to respect? (A4)

We could spend a whole new session on defining common sense for humans and robots, and on clarifying the differences between them. For some children, common sense means to display behaviour as dictated by human norms and values, for others it means a set of programming language commands. The meanings for 'common sense' in Romanian and English do not overlap, so some of the meaning of the answers given by the children may be lost in translation.

The group of children who believe that a robot cannot be a true friend presented these kinds of arguments:

Child 2: Robots are friends only because they are programmed to be, they don't choose to be friends (...) Therefore you are never sure they can be friends, therefore they are not quite true friends, because it's programmed. (A2)

In session A2, the children made it easy: the first criterion for calling someone a friend is to play or be able to play with them (e.g., to play outside or go swimming,). (Obviously, the latter activity is not suitable for robots.) When put to the vote, most children opted for the ability to play.

When things were unclear, children tried to get to an answer:

Facilitator: So, analysing the criteria, can we say that a book is a true friend?

Some children: No!

One child: Yes, some books help us develop!

Facilitator: So, once again, can we say books are our true friend?

All: No. (A2)

In session A4, the discussion after the first test centred on the words used. In response to the question of who gave the answers, a robot or a real person, the children said:

> *Child 2: Ceebie, because the answer is too automated, like from a dictionary …*
>
> *Child 1: I also believe it's Ceebie, because of the robotic answers and because he knows Jack and he probably realised it's Jack (in the other room). …*
>
> *Child 4: I believe it's a robot, because it says we know each other, but Jack doesn't know who's there. No human would say 'Because I'm familiar and helpful and because we have a bond of mutual affection.' And how could Jack know who is there and why it likes him. (A4)*

In the workshop that started with the story "The Princess and the Dragon", children attempted to define what constitutes a princess and constitutes a prince. They found things in common, like playing the piano or riding a horse. (S16)

In response to the question "What kinds of presents should we buy for children? Is it important to respect the rules about presents for girls and presents for boys?", the children concluded we should buy a present that she or he likes, since every child is different. (S16)

The ability to find not "the correct" answer, but answers for which one may find reasons

In session A2, we discussed children's friendship with books. According to the children, books could go outside or be taken outside but, contrary to the robot, they can't play "They can't play ping-pong or football…". Children were trying to find more details for a definition of a true friend:

> *Facilitator: What else comes to mind when you think about friendship? What, other than what Tony said, defines a friend?*
>
> *Child 7: It means you know a person, and that person plays with you and you don't get bored…*
>
> *Child 3: They make you feel better when you're sad.*

Child 10: They cheer you up...

Child 2: They help you.

Child 5: They behave nicely...

Child 1: They love you. They help you forget when you miss someone ...

Child 14: They are civilised."

Facilitator: What else? ...

Child 3: We should like them!

Child 4: They should be about the same age.

Child 9: They should help you when you need help. (A2)

Together with the children, we made a list of criteria that a true friend would have. The facilitator wrote the criteria on the whiteboard and continued to discuss different forms of friendship using these criteria. The first type of friendship that was discussed was friendship with pets: pets play with children, children never get bored with them, pets love children, pets are civilised (if you train them), children like pets, children and pets are not necessarily the same age (but this did not matter to the children).

We also discussed Ceebie, the robot, and how the defined friendship criteria applied to being friends with Ceebie. Ceebie plays with children, children are not bored with it, it helps the children a lot, cheers them up, loves children, is good with children, is civilised, and could be the same age "if it is programmed to say I am 10 years old" (A2). The moderator noticed that the children's non-verbal behaviour (e.g., gestures and facial expressions) seemed to indicate that they value friendship with Ceebie more than friendship with books or pets. to value

In session A4, the children gave reasons like: "It doesn't make sense to be a robot because a robot wouldn't compare playing with speaking, because they can't really play" (A4).

During the discussion about Tony's tests, we analysed the knowledge of the robot. The first opinion that was expressed was that a robot knows everything, but then another child said a robot only knows as much as the person who programmed it. If connected to the Internet, the robot has access to more knowledge. The children then brought the discussion back to the topic of feelings. First, one child said that a robot can be programmed to have feel-

ings, which caused some contradictory views. Then we compared robots with humans: can humans programme their feelings? Children discussed the idea of liking someone. To some extent, we 'programme' ourselves to fall in love by taking note and focusing on a person's qualities. Also, we can 'programme' ourselves to learn for an exam because we know that a good grade will make us happy, so we learn, even if we don't feel like it. Sometimes, external help is good in cases where we try to teach our mind to like someone. We might ask a friend about all the qualities of the person we are trying to like. (A4)

We talked about having affection for people and the possibility of robots experiencing affection. Again, the children responses varied from from a clear "Yes", to "Ehm, not very personal" or "Not really, because the robots don't have feelings". Other answers included: "Not the same feelings like humans do" and "If he's programmed, he can imagine how it would be to have feelings for a person". The next part of the discussion was about robots wishing to be human. Children had examples from Wall-E and from real life (Sophia, the famous robot activated in 2016). We continued with the question "What does it mean to have feelings?"

Child 3: To feel something for someone.

Facilitator: What exactly, can you provide more details?

Child 3: Love, jealousy, hate...

Child 6: I don't know, when you like something it's happiness.

Child 1: When someone hits you it's sadness, pain, when you don't like something it's disgust...

Child 2: When someone is made for you. (A4)

Creativity/originality

Analysing different types of friendship using the criteria established with the children in the workshop based on the story "Friends: Can a robot be a true friend?", the children said the following things about friendships with books: books don't play with children, some children are bored with books, some aren't, books don't love children and can't be good to them, books are civilised because writing is civilised. (A2)

We discussed Tony's opinion that creations made of plastic, metal, nuts and bolts can't be true friends to children. The children brought different argu-

ments to the fore, from "Nevertheless, it's metal, and metal hardly brakes" to "Metal could become rusted and the bolts would loosen up, and it wouldn't be...". Some solutions they came up with included:

> *Child 12: Well, you could go to a mechanic and have it repaired before it totally brakes.*
>
> *Child 1: Metal becomes rusted, people could become ill. It's the same thing.*
>
> *Child 5: And children could become ill, then they stay at home and can't go outside in the park with you.*
>
> *Child 13: Well, in this case you could take the robot!*
>
> *Children: Hahaha.*
>
> *Child 13: Or you could stay at home. (A2)*

In session A4, children identified the answer "I will see if I can help" and discussed it at length. They considered it a human answer, because robots know whether or not they can help. Other children thought it had to be a robot, because children don't help other children with their homework. During the discussion, they learned there are children who help other children with their homework, because of the responses provided by some of the children. Others believed the answer might have been given by a teacher, as it's too grammatically correct for a child. (A4)

Then the discussion reverted to feelings, where one of the children switched from a figurative meaning of the expression "to be made for someone" to a literal meaning:

> *Facilitator: OK, so we saw what feelings are. Can a robot have feelings?*
>
> *Child 1: Well, Ceebie was made for Jack.*
>
> *Facilitator: Haha, good one! (A4)*

Conclusion

Our analysis of the P4C sessions in Cluj has shown us that wonder – operationalised as described by Gilbert (2013) and Santi (2007) as the ability to ask questions; to actively search for answers; to evade control and predictability; to find not 'the correct' answer, but answers for which one may find reasons and arguments; originality; creativity – does facilitate children's development in critical thinking, has transformative power and can cultivate autonomy in the encounter of alterity, including the radical alterity provided by robots and/or technology. The analysis of the data gathered during our research indicates that children benefit from continuous participation in P4C sessions and improve their abilities to ask questions, question assumptions and think collectively. They challenge themselves in finding creative answers to questions, escape control and predictability, and continuously improve their disposition to think critically and arrive at reasonable and justified answers. Our analysis shows that these competences progress during children's continued participation in P4C sessions.

These competences are also important from the perspective of cultivating a reflective attitude that we can associate with philosophical wonder. Thus, the basic elements of *orienting* themselves towards the world (Eliade 1978) and of cultivating wonder as an essential part of our humanity (Hersch 1994) become visible through our analysis. Wonder brings about the need to integrate in a 'question/answer' paradigm, and therefore into a dialogic relation (Buber 1970). Wonder supposes a form of communication that opens us to others, on various levels of existence. One of the most important roles of wonder is that it triggers the mechanisms required for integrating into a community of dialogue.

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14 Weird Fiction: A Catalyst for Wonder

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Preliminaries

One of the vexed questions in the philosophy of wonder and indeed education is how to ensure that the next generation harbours a sense of wonder. Wonder is important, we think, because it encourages inquiry and keeps us as Albert Einstein would argue from 'being as good as dead' or 'snuffed-out candles' (Einstein 1949, 5). But how is an educator to install, bring to life, or otherwise encourage a sense of wonder in his or her students? Biologist Rachel Carson suggests that exploring nature and specifically undertaking walks along the rocky coast of Maine would keep alive a person's inborn sense of wonder (Carson 1984). Philosopher Jesse Prinz thinks that exposure to art will encourage wonderment because artworks, as he puts it, are "inventions for feeding the appetite that wonder excites in us" (Prinz 2013). Weird fiction (a subgenre of speculative fiction) – and in particular the work of one of its greatest exponents, the early-20th-century American author Howard Phillips Lovecraft – is likewise a catalyst for wonder. The reason behind this is that Lovecraft's 'wonder-stories' are densely packed with wonder per design; and in support of this claim I shall in what is to come 1) provide a brief introduction to Lovecraft and weird fiction; 2) present a working definition of wonder; and 3) clarify what is meant by something being 'densely packed with wonder' via bringing to the fore evidence of Lovecraft's literary wondermongery. The paper ends with some reflections on the notion of 'dark wonder', why this peculiar label might be suitable for the kind of wonder we find in Lovecraft's work, and why exposure to 'dark wonder' can be edifying, and in that sense educational.

Lovecraft and weird fiction

Howard Phillips Lovecraft was born in 1890, in Providence, Rhode Island, on the American East Coast. He was born into a wealthy family but ended his relatively short life in genteel poverty at the age of 46. Despite his brief life Lovecraft produced a staggering amount of literature in the form of poetry, fiction, essays and letters of which the latter amounts to a number between 80,000 and 100,000 (Joshi 2003, 30). Thus, in terms of letter output alone, Lovecraft beats the prolific philosopher Bertrand Russell who produced approximately 40,000 letters in his lifetime (Monk 1996, xvii), which in and of itself is almost an unfathomable feat.

Figure 14.1 Howard Phillips Lovecraft in 1934. Photograph by Lucius B. Truesdell

Lovecraft died in 1937 believing himself an underachiever if not a total failure, and literary critic Edmund Wilson, who in his 1945 article in *The New Yorker* "Tales of the Marvellous and the Ridiculous" labelled him a hack, somewhat confirmed this assessment (Wilson 1980). However, like philosopher Friedrich Nietzsche and fellow writer and connoisseur of the extraordinary and fantastic Edgar Allan Poe, Lovecraft has achieved unquestionable posthumous fame and today he is celebrated as an inspiration for everything from alcoholic beverages to blogs, books, clothing lines, films, graphic novels, music, plays, podcasts,

role-playing, and tabletop and videogames. Numerous Lovecraft biographies have emerged since his early demise, counting among them Sprague L. de Camp's prominent *H.P. Lovecraft: A Biography*, Michel Houellebecq's influential *H.P. Lovecraft: Contre le Monde, Contre la Vie* and S.T. Joshi's two-volume tour de force *I Am Providence: The Life and Times of H.P. Lovecraft*. Likewise serious scholarly research into Lovecraft and his work has surfaced and is continuing to grow in the 21st century. Worth mentioning in this regard is the work of philosopher Graham Harman who views Lovecraft as a writer of gaps between objects and their qualities, linking him to Speculative Realism and the Object-Oriented Ontology model (Harman 2008, 333-364; Harman 2012, 4). Literary scholar Eugene Thacker's work on 'life' and how it poses a problem for philosophy, together with his work covering the 'horror of philosophy', is likewise connected to the writings and outlook of Lovecraft (Thacker 2010; 2011). Furthermore, periodicals such as *Lovecraft Annual* edited by S.T. Joshi also propel Lovecraft scholarship forward.

That Lovecraft is a force to be reckoned with in our modern times is also evident from the fact that his work has been translated into multiple languages, including Danish, French, German and Japanese. In addition, one might also point out that Lovecraft enjoys the eponymous adjective 'Lovecraftian' and that *Necronomicon* – an annual conference, taking place in Providence, Rhode Island – together with the S.T. Joshi Endowed Research Fellowship, connected to the John Hay Library at Brown University, where the world's largest collection of H.P. Lovecraft materials are kept, are both dedicated to him.

Now, Lovecraft published his fiction more or less exclusively in American pulp magazines of the 1920s and 30s, including *Astounding Stories*, *Weird Tales* and *Wonder Stories*, and his writing is roughly speaking designed to evoke either terror, horror or wonder in the reader (Pedersen 2017, 23). Terror, horror and wonder are extraordinary states of mind that we don't experience all the time, but instead are rare and distinct. Naturally, this makes them interesting and important for the 'weird' tale which, according to Lovecraft's essay "Supernatural Horror in Literature", must hold:

> a certain atmosphere of breathless and unexplainable dread of outer, unknown forces (...); and there must be a hint, expressed with a seriousness and portentousness becoming its subject, of that most terrible conception of the human brain – a malign and particular suspension or defeat of those fixed laws of Nature which are our only safeguard against the assaults of chaos and the daemons of unplumbed space. (Lovecraft 1927)

Although undoubtedly best known for his tales of terror and horror, Lovecraft kept a close relationship with wonder throughout his life, despite the fact that he lived in an age where wonder, due to the advancement of science, had suffered hyperbole, ridicule and been reduced to a sentiment for the naïve and foolish (Pedersen 2017, 25).

Lovecraft was of a particular sort. He was, as the Germans would say, 'wundersüchtig', meaning roughly that he had an affinity for the supernatural or that which lies just beyond our senses. Lovecraft writes:

> Pleasure to me is wonder – the unexplored, the unexpected, the thing that is hidden and the changeless thing that lurks behind superficial mutability. To trace the remote in the immediate; the eternal in the ephemeral; the past in the present; the infinite in the finite; these things are to me the springs of delight and beauty. (Lovecraft 2006, 53)

The citation bears witness to Lovecraft's Romanticism and poetical acumen and it is clear that he views wonder as something positive.[1]This is underlined in a letter Lovecraft sent to his friend August Derleth, in which he passionately wrote:

> The one great crusade worthy of an enlightened man is that directed against whatever impoverishes imagination, wonder, sensation, dramatic life, and the appreciation of beauty. Nothing else matters. (Lovecraft 1965, 208)

Lovecraft's inclination towards Romanticism is evident from reading these lines. However, there is one element that disturbs the flow of things, namely the term 'enlightened man'. On the face of it, the choice of the term and the dramatic outburst on what is important in life, i.e. the fight against anything that impoverishes imagination, wonder and so forth, are an odd coupling. It leaves us to ponder what exactly Lovecraft meant by 'enlightened'. What could he possibly have had in mind if not the scientific views of the Enlightenment period, which as it were stand in opposition to the Romantic thoughts he advocated? This is a difficult question and cannot be answered in full here but I am inclined to think that he, like the Romantic poet Percy Shelly, embraced scientific thought as well as the language of the heart in a self-styled rebellion against the wonderless zeitgeist of his age.

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1 For more information on Lovecraft's Romanticism see my article: "Howard Phillips Lovecraft: Romantic on the Nightside" (Pedersen 2018).

What is wonder?

Terror, it might be ventured, is a state of mind we experience when bodily injury likely to cause death is close at hand, and horror is the state of mind we experience if our life-world is suddenly threatened or destroyed. Wonder is more complicated and thus it is a state of mind that has received many definitions throughout the ages. Plato famously stated in the *Theaetetus* that wonder is the feeling of the philosopher, and French philosopher René Descartes believed wonder to be the first of all the passions (Descartes 1986, 53). My own somewhat prosaic definition goes like this: 'Wonder is a sudden experience that intensifies the cognitive focus and awareness of ignorance about a given object' (Pedersen 2017, 25; Pedersen 2019, 1). Adding to the definition one might argue that wonder is typically an unsettling yet delightful experience – and something perhaps we ought to seek out.

Lovecraft the wonder-monger

Lovecraft certainly sought out wonder, and particularly wonder transmitted through literature, because during his childhood he spent much time reading books of marvels such as *The Arabian Nights*, Hawthorne's *Wonder Book* and *Tanglewood Tales*, *The Arabian Nights*, and the travel literature of Marco Polo and Sir John Mandeville (Pedersen 2017, 26-27). These sources together with the works of literary thaumaturge Lord Dunsany later inspired Lovecraft to write his own wonder stories – stories littered or densely packed with wonder-evoking tropes that play to the imagination, producing small sunlit windows in the mind of the reader through which a larger world becomes present.

To provide further insight into how a weird story can be densely packed with wonder, let us now explore four types of wonder-evoking tropes that Lovecraft frequently made use of in his fiction.

Trope 1: Deliberately vague and suggestive writing

Lovecraft had an affinity for overusing adjectives and if there ever was a master of vagueness and suggestion, Lovecraft is truly a worthy candidate for the title. To illustrate this let us focus on a few excerpts from his 1925 short story "The Unnameable":

> It had been an eldritch thing (...). So little is known of what went on beneath the surface – so little, yet such a ghastly festering as it bubbles up putrescently in occasional ghoulish glimpses. (...) And inside that rusted straitjacket lurked gibbering hideousness, perversion, and diabolism. Here, truly, was the apotheosis of the unnameable. (Lovecraft 1925)

Even if one understands every word of the above sentences, reading them tends to make the reader feel rather thick headed because, despite his use of guiding adjectives such as 'eldritch', 'ghastly' and 'ghoulish', it is hard to pinpoint exactly what Lovecraft meant to communicate. He goes to great lengths to explain just how dire things are but without really revealing what is amiss. This is a clever stylistic move in a weird tale, because it induces wonder in the reader, who becomes aware of his or her ignorance concerning the matter at hand. It is also commensurate with Lovecraft's notion of how a weird story should be crafted. He writes:

> Atmosphere, not action, is the great desideratum of weird fiction. Indeed, all that a wonder story can ever be is *a vivid picture of a certain type of human mood*. The moment it tries to be anything else it becomes cheap, puerile, and unconvincing. (Lovecraft 2004, 177)

Figure 14.2 *The Necronomicon: Sentinel Hill.* 2007. Courtesy of Les Edwards, www.lesedwards.com

Weird fiction relies on vague and suggestive writing for it to work its wonder and leans heavily on the Baconian idea of wonder as broken knowledge. As a rule, it does not deal in explanations because explanations are the great neutraliser, the very antidote to wonder. Weird fiction, in other words, breaches gaps. The only way an explanation can be used effectively in a wonder story is if it is but a small piece of a larger puzzle of unknown shape or form. Dark corners or unknown regions simply must be present for it to work.

Trope 2: Between worlds

Lovecraft's wonder stories are often escapist in nature. They have a hint of the fanciful and draw the reader into a wondrous atmosphere of mysterious, faraway places not unlike the ones we find in medieval travel literature.

The stories usually revolve around a sensitive poet-like protagonist who is tired of life's trivialities. The person is ghostlike, alienated, with one foot in our world and the other in what Lovecraft labels 'the Dreamlands', which is a part of reality accessible only to a sensitive few in Lovecraft's fictional universe. One of these sensitive few is Lovecraft's alter ego Randolf Carter, a character who features in several wonder stories, including "The Silver Key", where we find the following peculiar passage:

> When Randolph Carter was thirty he lost the key to the gate of dreams. Prior to that time he had made up for the prosiness of life by nightly excursions to strange and ancient cities beyond space, and lovely, unbelievable garden lands across ethereal seas; but as middle age hardened upon him he felt these liberties slipping away little by little, until at last he was cut off altogether. (Lovecraft 1929)

The citation reveals a protagonist twice burdened. *Prima facie* Carter is tormented by his prosaic life, which makes him a Lovecraftian pendant to the ennui-hunted Byronesque Romantic or the pleasure-seeking Kierkegaardian *aesthete*. Painful as this may be, he is on top of that distressed about his lost ability to enter the Dreamlands – an extraordinary world he has confirmed the existence of *a posteriori*. Consequently, he stands between worlds not only because such worlds actually exist in Lovecraft's universe, but because he prefers the world of the Dreamlands, which is now painfully out of reach. Thus the Dreamlands effectively becomes a paradise lost – a place of wonder that is either like Arcadia impossible to explore because it is evermore unreachable, or the utopias of Plato or St. Augustine's that, although realisable in theory, remain seemingly out of reach.

The 'between worlds' trope is also used in Lovecraft's prose poem *Celephais* where he writes:

> There are not many persons who know what wonders are opened to them in the stories and visions of their youth; for when as children we listen and dream, we think but half-formed thoughts, and when as men we try to remember, we are dulled and prosaic with the poison of life. But some of us awake in the night with strange phantasms of enchanted hills and gardens, of fountains that sing in the sun, of golden cliffs overhanging murmuring seas, of plains that stretch down to sleeping cities of bronze and stone (...) and then we know that we have looked back through the ivory gates into that world of wonder which was ours before we were wise and unhappy. (Lovecraft 1920)

In this passage we hear more about the Dreamlands but we also learn that, according to Lovecraft, we tend to lose the ability to wonder when we grow up. For some, adulthood equals becoming wise and unhappy, but wise and unhappy are not immediately natural bedfellows. What Lovecraft could have in mind here is the more or less stoic outlook many develop in later years. Lovecraft harboured a fierce aversion towards stoicism, mainly because stoicism goes against wonderment and portrays the world as disenchanted (Pedersen 2018, 169; Pedersen 2019, 23-24; Quinn 2002, 100-103). The tranquillity of mind that stoicism offers as a path to happiness is rooted in pantheistic metaphysics, claiming that the universe is material and equals one living being that can be addressed as either God or nature. Such a worldview leaves no room for other worlds; and escape, as it were, is impossible – and this Lovecraft could not tolerate. It was simply too bitter a pill to swallow for a 'wundersüchtiger' gentleman like himself.[2]

Trope 3: The lonely protagonist

Lovecraft's wonder stories tend to centre on a lonely figure that is waiting or longing for something beyond what normal human life can provide. We find such a character in the opening of Lovecraft's short story "The White Ship":

> I am Basil Elton, keeper of the North Point light that my father and grandfather kept before me. Far from the shore stands the grey lighthouse, above sunken slimy rocks that are seen when the tide is low, but unseen when the

2 For more information on Lovecraft's aversion towards stoicism see my essay 'Howard Phillips Lovecraft: Romantic on the nightside' (Pedersen 2018).

> tide is high. Past that beacon for a century have swept the majestic barques of the seven seas. In the days of my grandfather there were many; in the days of my father not so many; and now there are so few that I sometimes feel strangely alone, as though I were the last man on our planet. (Lovecraft 1919)

The strange, lonely setting, together with the somewhat contemplative mood of the protagonist, adds to the wondrous atmosphere, because such a character in such a place is both frightening and fascinating. Frightening because most of us have a hard time being alone, particularly for prolonged periods. Fascinating because we naturally ask ourselves: how does he endure it? What is his secret?

Trope 4: Mixing reality and fiction

In his fictional work Lovecraft deliberately mixes reality and fiction to plant a sense of wonder in the reader. Many of his stories are set in real cities such as Boston, Providence and New York, but equally many are set in fictional New England towns such as Arkham, Innsmouth, Dunwhich and Kingsport. Together they form what may be called 'Lovecraft Country', a place where reality and fiction blend together – a place ripe for wonder and wonders.

Lovecraft's constant blending of real and fictional does not only apply to settings. Many of the scholarly professor-type heroes in his stories at some point stumble upon a library extraordinaire, and what makes these libraries special is that some of the books – although old and obscure – are recognisable to the informed reader, such as James Frazer's *The Golden Bough*, Geber's *Liber Investigationis,* Margaret Murray's *Witch Cult in Western Europe* and Roger Bacon's *Thesaurus Chemicus*. However, Lovecraft has a habit of casually adding fictional books such as Abdul Alhazred's *Necronomicon*; Ludwig Prinn's *De Vermis Mysteriis* or the *Pnakotic Manuscripts* to the arcane collections. The result is wondrous as the informed reader suddenly feels less informed, bordering on ignorant, because what lore do these books contain, who were their authors and how does one get hold of the books?[3]

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3 It has to be said that with the Internet at our disposal finding out that these ancient tomes are fictional is relatively easy nowadays. However, when I began reading Lovecraft as a teenager the Internet did not exist and my access to the English-speaking world, including English literature, was rather limited. This resulted in (much to my embarrassment today) years of wondering about the status of Lovecraftian books such as *The Necronomicon*.

Dark wonder

So much for wonder-evoking tropes. I will conclude the paper by addressing the idea of 'dark wonder' in relation to Lovecraft, and offer some reasons why I think weird fiction can be edifying.

Dark wonder is something that comes up every now and then in the literature on wonder. If we look to the work of psychiatrist Paul Fleichman, we see that he relates the term to the character Ishmael, the fictional narrator in Herman Melville's *Moby Dick*. Here, wonder is the salvation for the unshored modern mind because it encompasses violence, cruelty, destruction and annihilation (Fleischman 2013, 362-363).

Dark wonder also features in Casper Henderson's *A New Map of Wonders* where it is associated with the mental darkness or aporia we experience upon considering the nature of black holes. A black hole emerges when a star much larger than our own sun turns supernova and its core collapses inwards and becomes a singularity – "a region in space where matter is infinitely dense and space-time infinitely curved" (Henderson 2017, 64). The monstrous gravitational pull of a black hole allows nothing to escape, not even light, and because of the sheer power of the thing one would think that 'awe' would be the appropriate response. After all, 'awe' is strongly connected with terror, fear and majestic powers beyond our control (Pedersen 2019, 39). However, 'dark wonder' is also quite fitting in relation to black holes because there is much uncertainty surrounding them – an uncertainty that cuts deep into the realm of physics, exposing the division on the nature of black holes between supporters of the theory of general relativity and advocates of quantum theory.

Now I should think it fitting to use the term 'dark wonder' in relation to Lovecraft too, and the reason for that is twofold.[4] Firstly, Lovecraft's stories usually end in madness or death. In a traditional hero's journey, the protagonist may go through many trials but at the end of it all he or she will emerge triumphant and all is well. Lovecraft does not offer that and the typical Lovecraftian protagonist usually finds himself on an endless ghost train ride or in a 'Hotel California'-type situation, where you can check out any time you like, but you can never leave.

4 It is possible that Lovecraft himself would have approved of the term because in his 1927 novella *The Dreamquest of Unknown Kadath*, published posthumously by Arkham House in 1943, he mentions 'dark wonders' in connection to the strange beings inhabiting the dream city of unknown Kadath (Lovecraft 1943).

Secondly, Lovecraft's cosmic indifference permeates most of his stories. Earlier I presented an excerpt from one of Lovecraft's letters to August Derleth, but I left out what follows more or less immediately afterwards:

> And not even this really matters in the great void. But it is amusing to play a little in the sun before the blind universe dispassionately pulverises us again into that primordial nothingness from whence it moulded us for its second's sport. (Lovecraft 1965, 208)

The last sentences bear witness to Lovecraft's view of the world as completely indifferent to how our lives play out, but coupled with the first two sentences in the earlier quotation a certain defiant Romanticism emerges, celebrating the use of imagination and the significance of the person of feeling and action. Thus 'dark wonder' understood in view of Lovecraft's weird fiction, and especially his wonder stories, should not scare us away despite its undercurrent of gloom. It should be studied as it kindles our metaphysical imagination in the wake of a confrontation with a hitherto unknown reality involving mad gods, inter-dimensional beings, human fortitude and perhaps most unsettling of all, human frailty. One might attempt a rebuke by interjecting that 'dark wonder' is but an unnecessary compound word, possibly invented to make horror sound nicer and wonder less naïve, or perhaps just to make wonder encompass more of the territory usually affiliated with horror. This may be, but *Moby Dick*, black holes and Lovecraft's weird fiction hint to us that there is an extraordinary state of mind that is neither horror nor strictly speaking wonder but close to both. 'Awe' seems a worthy candidate for precisely such a state. But although fear is clearly present in Lovecraft's fiction, awe's other companion, 'terror', is seldom there and thus something is not quite right. Admittedly, 'dark wonder' is a somewhat weird label. However, it may be easier to digest if one imagines a circle with a fine split in it. At one end is horror, you go around the circle to wonder and on the other end of the circle, close to horror yet not horror, is dark wonder.[5]

Myths and stories are composed of wonders, as Aristotle tells us (*Metaphysics* Book 1, 982b; Aristotle 1998, 8-9), and when we actively study them we are in effect exposing ourselves to wonders and indeed the experience of wonder. Reading Lovecraft's weird fiction has the same effect, because it is the kind of literature that makes us traffic in cosmology, engage with fundamental ques-

5 The image of the circle with a thin split is borrowed from psychiatrist and early LSD researcher Sidney Cohen who, in the 1987 BBC documentary entitled *The Beyond Within – the Rise and Fall of LSD*, explained the difference between 'sanity', 'insanity' and 'unsanity'.

tions about the nature of reality and what is really important for us human beings. The wonders found in Lovecraft works can be edifying partly because they exercise our imagination in an unusual way, making us imaginatively fit and rich in perspective. Naturally, such enrichment does not entail that we take on board his position of cosmic indifference or believe in the existence of, for example, the Dreamlands. Merely considering such ideas brings about the edifying and perspective-enriching effect.

I co-teach an elective course 'Existential Themes Through the Prism of Palliation', and during this course my students work with a Lovecraft prose poem entitled *Ex Oblivione*, which means 'from oblivion'. The poem revolves around a nameless narrator who, coming near the end of his life, loves the irradiate refuge of sleep because via sleep he can escape the prosiness of life and enter the Dreamlands, where he wanders through old gardens and enchanted woods finding a little of the beauty he had sought in life.

Some of my students report that they are quite touched by the tenderness of Lovecraft and the images his poem conjures up, while others express they feel better prepared for work in palliative care after having read and discussed *Ex Oblivione*. Although working with poetry such as this is unusual for my students it is my belief that it trains their sensibility and ability to put themselves in another person's shoes. It requires intense work of the imagination and a willingness to engage with wonders. Lovecraft's work definitely helps in that respect as his weird fiction is a catalyst for wonder, precisely because it is loaded with wonder – whether dark or not – and wondrous by design.

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