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Keeping Wonder Secure and the People Awake: on the nature of wonder and its importance for civilisation.

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Dedication

To my wife Moyra with much love and thanks for her encouragement and support throughout this endeavour.

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My grateful thanks are due to Professor David Cockburn for his time and efforts to keep me focusing on the main theme, and to Dr. Rebekah Humphreys for all her morale-boosting communications and her invaluable help with the research proposal.

Abstract

Wonder is an emotion readily communicated to others by a generally understood expressive signature. In the form of a digital emoticon with its basic visual clues, the 'Wow' moment, shown as a face with open mouth and raised eyebrows, offers a representation of an unmistakable feeling. Such an easily interpreted human phenomenon suggests that wonder has an important social function as well as being significant in the lives of individuals. This dissertation is an analysis of wonder, seeking to elucidate the process by which it is recognised and represented and acted upon. Above all the other emotions, wonder serves the purpose of linking initial inchoate feelings about external events to conscious rationality. This leads to concept formation as to what the wonder might be, providing the incentive to clarify its nature along with some sort of evaluation about its importance, whether for immediate survival or for long term management. Intentionality and its relevance for conscious awareness is investigated as a mechanism by which these processes are brought about in individual minds.

Wonders may be on a grand scale or wonder may be found in tiny events such as flower petals opening. There is also the phenomenon of people in groups finding collective amazement at particular social situations and it is contended that this is a species of wonder, here termed 'intellectual wonder'. Collective intentionality concerning such social situations which are evaluated as 'extraordinary' (and therefore intellectually wonderful) is then suggested as a means by which social institutions are developed to address any collectively perceived shortcomings. The motivation to consider shortcomings is conceived as deriving from the feelings accompanying representations of the social situation, conscious awareness of an ethical context, and radical amazement that social boundaries have been transgressed. Wonder therefore has a place in generating and maintaining a civilisation.

Introduction

Keeping wonder secure - this is the value of philosophy according to Maurice Drury in *The Danger of Words* (1973).¹ Wittgenstein's biographer, Ray Monk, described the book as being 'in its tone and concerns, the most truly Wittgensteinian work published by any of Wittgenstein's students.' In his closing remarks Drury quotes Macaulay (from Macaulay's essay on Francis Bacon) questioning the purpose of Philosophy: 'What has it taught us to do which we could not have equally done without it?' Drury suggests in reply:

'Good sir, you mistake our purpose. We add nothing to the sum total of human cleverness and skill. Our function is otherwise....to insist that people say only just as much as they really know; that when, as happens in every generation, new advances are made, they are not taken to be more important than they really are. You ask what is the value of such scepticism, such carping criticism? One value only. It keeps wonder secure. That sense of wonder that Wordsworth wrote of as making every common sight "Apparelled in celestial light / The glory and the freshness of a dream".'

Although this dissertation cannot claim to do justice to the ideas of either Drury or Wittgenstein, it will be seen that at difficult points of my argument an attempt has been made to find inspiration from either *Philosophical Investigations* or *Culture and Value*. Also helpful are the conversations between Wittgenstein and Drury, or Wittgenstein and others, reported by Monk in his *Ludwig Wittgenstein: The Duty of Genius*.

Aristotle comments in Book Alpha of his *Metaphysics* that experiencing nature triggered in men an awe-inspired wonder ('thaumazein') which caused them to seek answers. Wittgenstein suggested that the miracles of nature are disclosed to us in art - art being 'based on the *concept* of the miracles of nature.'² His antipathy towards modern civilisation and its veneration of science seems apparent in a number of passages and he specifically links this to its danger for wonder when he says that in order to marvel people have to wake up, and science is a way of sending them back to sleep.³ The phenomenologist Max Scheler maintained that human beings are in possession of 'spirit', the spirit of being open to wonder in the Ancient Greek sense of thaumazein.⁴ Recent contributions to Aesthetics as well as the History of Ideas have seemed in sympathy with this notion, raising the concept of wonder as an important aspect of the

¹ Drury M., *The Danger of Words* (Abingdon: Routledge, 1973), p113.

² Wittgenstein L. *Culture and Value*, ed. G.H. von Wright (Oxford: Blackwell, 1998) p64e.

³ Wittgenstein L., *ibid*, p7e.

⁴ Davis, Zachary and Steinbock, Anthony, "Max Scheler", *The Stanford Encyclopedia of Philosophy* (Spring 2019 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/spr2019/entries/scheler/>.

human condition, lately finding expression in Environmentalist literature.^{5,6,7} The way that a family of words has grown up in order to describe the concept in all its various nuances of meaning is an interesting exploration in its own right, and chapter one of this dissertation seeks to explain how modern understandings of the phenomenon of wonder have come to be expressed in commonly used language.

In Descartes' last work published in 1649, *The Passions of the Soul*, wonder was placed as the most important of the passions, or emotions, because it was the only one not dependent on the inner workings of the mind for its creation. He made a detailed analysis, as far as the science of his day allowed, of the physiology related to emotions. His example of fear and how it leads to bodily changes remains a paradigmatic explanation of action resulting from a feeling (discussed in chapter two). Wonder in a Cartesian setting of mind-body dualism conjures up images of something happening beyond the boundaries of the body which cannot be ignored by the inner workings of the mind. One can dream up fearful situations and cause oneself to panic without any objective cause, but in the case of wonder there is a guaranteed external event. One has to experience something extravagantly beyond any expectation or understanding before that triggers the unique *feeling* of wonder and its subsequent cognitive and motivational mental states.

Exactly what is meant by 'emotion', and whether this is 'feeling', is controversial. A central notion in my argument is that an important part of wonder is its unique feeling, or 'the what it is like to have' such an experience and this is a theme running throughout which demands, particularly in chapter three, consideration of what sort of thing the mind must be to produce or contain experiences. The early modern idea of an emotion was that they were passive occurrences ('passion' and 'passive' being derived from the same Greek word) without any rational activity. The nature of emotions as regards both their particular feeling and their function has always been of both philosophical and scientific (psychological) interest, the two traditions merging into one another. As long ago as the mid eighteenth century David Hume claimed that his book two of *A Treatise of Human Nature* was a new and extraordinary treatment of the Passions in which a socially shared 'sympathy' governs attitudes towards events and towards others. His idea about the importance of internal reflection upon events is previously seen in Locke, where 'reflexions' make up internal experience; and reflection upon affections makes up Shaftesbury's 'sentiments' which are 'both the source of our moral judgements and their objects.'⁸

⁵ Attfield R., *Wonder, value and God*, (London and New York: Routledge, 2017).

⁶ Rolston H., 'Value in Nature and the Nature of Value, *Royal Institute of Philosophy Supplement* Vol 36, 1994, pp13-30.

⁷ Chuvieco E., 'Religious approaches to water management and environmental conservation', *Water Policy*, Vol 14 (Mar 2012) pp9-20.

⁸ Schmitter A., 'Family trees: Sympathy, Comparison, and the Proliferation of the Passions in Hume and his Predecessors', in *Emotion and Cognitive Life in Mediaeval and Early Modern Philosophy* eds. Martin Pickave and Lisa Shapiro (Oxford: Oxford University Press, 2012) p257.

Hume was undoubtedly interested in making his account scientific (his subtitle for the *Treatise* was *Being an attempt to introduce the experimental method of reasoning into moral subjects*) although there is only one attempt to record an experiment. His observation of an ink blot at increasing distances was an experiment intended to support denial of the infinite divisibility of objects and demonstrate the finite capacity of the mind (Part ii, section I).⁹ In Part iii, section IX Hume makes a perceptive analogy with regard to emotions, relating a stroke on a stringed instrument to the activation of a passion - in that they both vibrate for some time afterwards. He uses this analogy to analyse different mixtures of passions and is of the opinion that 'Terror consternation, astonishment, anxiety and other passions of that kind' are all species of fear. In my 'lexicon of wonder' in chapter one I recount that a family of words evolved to describe the various types of wonder, of which consternation and astonishment would qualify as lesser variants, and later I use fear as a paradigm case of an emotion, but in specifically distinguishing wonder from fear, I disagree with Hume.

A scientific investigation of a wonder, as Aristotle recognised, has a need to address what it is that is generating the wondrous event in the world outside, and then perhaps the detail of the substrate (biological or otherwise) making its representation possible in the mind. Scientific knowledge of causal connections and physical regularities in nature has grown exponentially since Aristotle and Descartes, so the instrumental value of wonder as 'thaumazein' seems undeniable. If Drury is correct that philosophy adds nothing to our cleverness and skill then Macaulay might reasonably modify his position to say that philosophy has no *instrumental* value in itself unless it does indeed preserve and promote wonder, which then has the specific function of increasing the likelihood of future scientific discoveries. However, I think there is more to wonder than stimulating scientific investigation.

Seeing wonder only as a behavioural response to interesting natural phenomena prefiguring science is to undermine any intrinsic meaning which wonder might convey. Wondering about something tremendous is a cognitive activity consisting of passing thoughts, but there is an affective reaction too which seems to express an inner sense about something being important. These notions set the scene for the Cartesian view of the uniquely human mental mechanisms which might be involved, and I make an argument for wonder being unique to humans because of our capacity for language.

My thesis about the importance of wonder relies on events in the outside world being represented much as they really are and processed in the human mind taking account of current beliefs, desires and memories. Chapter three includes an exploration of ideas about consciousness and intentionality which support this sort of view about the impact of reality, and the experience of wonder, on the mind. The turmoil of wonder demands urgent attention in what I like to think of as the 'operating system' of the mind and may lead to drastic action causing or influencing further events in the world. This view is influenced by biological and social systems theory but follows the philosopher John

⁹ Hume D., *The Project Gutenberg EBook of A Treatise of Human Nature, by David Hume*

Searle in his defence of realism, his notions about biological necessity in the evolution of mental states, and his concept of Intentionality.

Malebranche, very much influenced by Descartes' physiological description, has an interesting extension of the notion of wonder to more everyday feelings of esteem (because of the grandeur of somebody), and contempt (because of their littleness).¹⁰ These different but related feelings are supposedly engendered by comparison with the observer's own status, and so involve a judgement which for Malebranche would be explained in causal terms by animal spirits producing differential deviation of the pineal gland. This putative psychological mechanism might be an early example of the sort of explanatory thinking by which the glory and freshness of wonder is turned into something stale and commonplace. A mechanical explanation such as turning wonder at a glorious achievement into a twitch of the pineal gland does feel a little demeaning.

Malebranche also points to self-esteem turning into pride (with envy and jealousy in its wake) and I think that the variable social consequences of pride show that this feeling of comparative wonder can become something dangerous in human society. Chapter four is concerned with the social function of wonder and introduces my concept of 'intellectual wonder' to refer to the sudden awareness of something in social practices which transgresses what were generally understood to be the accepted boundaries.

Chapter five takes up the notion of there being an ethical dimension to the organisation of society, and proposes intellectual wonder as a key factor in producing change in society including how institutions address the social problems inherent in everyday life. Awakening conscious awareness to wondrous aspects of society, whether as marvels, matters of dread, or indeed as miracles of invention, is surely of relevance to what counts as civilisation.

¹⁰ Schmitter A., *ibid*, pp263-264.

Chapter One - Wonder through the Ages

Wonder and Science

As noted in the Introduction the phenomenon of wonder has been a source of interest for philosophers since at least the time of the Ancient Greeks. Aristotle, in chapters one and two of Book Alpha of the *Metaphysics* refers to man's awe-inspired wonder (Greek *thaumazein*) at the world of nature¹¹ which leads man to seek answers as to why things are as they are. Eventually, Aristotle considers, the process reveals the importance of his Four Causes (the Material, the Formal, the Efficient, and the Final Causes) in elaborating scientific explanations. On the importance of wonder as a stimulus to thought, Plato said that 'This sense of wonder is the mark of the philosopher. Philosophy indeed has no other origin.'¹²

While of significance for the Ancients, it seems that wonder has only increased in its relevance for the present day. Modern academics with an interest in aesthetics and education have contemplated the phenomenon, and what it entails, with a view to expanding our understanding of our very being. Laura-Lee Kearns introduces her discussion on its importance by emphasising the human capacity for wonder:

'Our abilities to wonder, to imagine, to contemplate different possibilities, to leave things unsaid, to be astonished, to seek knowledge, to feel, to do, to be, to act, to create are parts of who we are'.¹³

If it is so fundamental, one might then 'wonder' why there should be any argument about keeping it secure. This exploration is not intended to undermine any reverence for the notion of wonder but is designed to question why some have thought that it is indeed in danger and what might result from its loss. Originally inspired by Wittgenstein's stance on the subject, this investigation has revealed more recent and perhaps more specific condemnations of 'instrumentalization, mechanized habits, and social/cultural conditioning (which) all contribute to what we view as ordinary, or the

¹¹ Aristotle *Aristotle's Metaphysics Alpha: Symposium Aristotelicum* eds. Oliver Primavesi and Carlos Steel (Oxford: Oxford University Press, 2012).

¹² Plato *Thaetetus* in *The Collected Dialogues of Plato* eds. Edith Hamilton and Huntington Cairns (Princeton: Princeton University Press, 1961) 155d.

¹³ Kearns L., 'Subjects of Wonder: Toward an Aesthetics, Ethics, and Pedagogy of Wonder' in *Journal of Aesthetic Education*, Vol 49, No.1, Spring 2015 pp98-119.

flattening of our everyday experience'.¹⁴ Kearns directly quotes from Howard Parsons' *The Philosophy of Wonder* (1961) about this cultural conditioning 'extinguishing from awareness the qualitative uniqueness of things and hence the experience of wonder.....(and) what we respond to as wonderful.'¹⁵

Wittgenstein's own disapproval of modern scientific culture is captured by Monk in his quote from Drury's account of when, seeming very distressed, Wittgenstein called on Drury and said:

'I was walking about in Cambridge and passed a bookshop, and in the window were portraits of Russell, Freud, and Einstein. A little further on, in a music shop, I saw portraits of Beethoven, Schubert and Chopin. Comparing these portraits I felt intensely the terrible degeneration that had come over the human spirit in the course of only a hundred years.'¹⁶

Monk suggests that this pessimistic attitude derived from reading Otto Spengler's *Decline of the West* and it chimes with other comments Wittgenstein wrote following his return to Cambridge and academic philosophy. For instance, in a note written in 1930 he criticises Renan for saying that there is no reason to marvel at matters such as birth and death, madness, and dreams because they have been scientifically explained as having constitutional causes. He comments that, on the contrary, 'In order to marvel human beings - and perhaps peoples - have to wake up. Science is a way of sending them off to sleep again.'¹⁷ Spengler himself was part of the intellectual circle in Munich before and after the First World War and thought that mathematics was an art form and had its own style-periods. In this, he was only following Goethe who had said that every mathematician feels within himself the beauty of the true.¹⁸ Other members of this circle such as the phenomenologist Max Scheler contributed to the movement against logical positivism. Scheler regarded human beings as persons in possession of spirit, spirit being different from life in several respects but especially in being open to wonder - in the Greek sense of awe at the world - an astonishment that there is something rather than nothing.¹⁹

¹⁴ Kearns, *ibid*, p99.

¹⁵ *Ibid*, p99.

¹⁶ Monk R., *Ludwig Wittgenstein: The Duty of Genius* (London: Jonathan Cape, 1990) p299.

¹⁷ Wittgenstein L., *Culture and Value*, ed. G.H. von Wright (Oxford: Blackwell, 1998) p7e.

¹⁸ Spengler O., *Decline of the West: Form and Actuality* (London: Allen and Unwin, 1921) p61-2.

¹⁹ Davis, Zachary and Steinbock, Anthony, "Max Scheler", *The Stanford Encyclopedia of Philosophy* (Spring 2019 Edition), Edward N. Zalta (ed.), URL = <<https://plato.stanford.edu/archives/spr2019/entries/scheler/>>.

That Wittgenstein's unhappiness with modern science continued is seen when in 1947 he cast greater doubt on scientific and technological progress, characterising it as a bedazzlement: 'there is nothing good or desirable about scientific knowledge' and in seeking it mankind is falling into a trap. On the other hand one can show (disclosed by art) the miracles of nature such as in the opening out of a blossom.²⁰ In the draft of a Forward for a book (eventually published posthumously as *Philosophical Remarks*) Wittgenstein talks about the spirit in which he writes and says that it is different from the spirit of contemporary Western civilisation 'the expression of which is the industry, architecture, and music of present day fascism & socialism'.²¹ Further, 'It is all one to me whether the typical western scientist understands or appreciates my work since in any case he does not understand the spirit in which I write.'²² Although this spirit was characterised by Bertrand Russell as a descent into mysticism, Russell himself was not completely averse to 'wondering' in the sense of imaginative creation. In his own earlier (1912) *The Problems of Philosophy*, Russell had said that the value of philosophy is 'to be sought, largely, in its very uncertainty' and he concludes that its study is 'not for the sake of any definite answers to its questions, since no definite answers can, as a rule, be known to be true, but rather for the sake of the questions themselves; because these questions enlarge our conception of what is possible'.²³ Such a conception would, I think, encompass the insistence that people say only as much as they can really know, as said to be the function of philosophy by Drury; though Russell's view has, for me, a more positive gloss.

Amidst the gloom of spiritless instrumentalism, rather than Russell's more optimistic questioning, it is perhaps timely to note a mildly wonderful coincidence. Wittgenstein's original *alma mater* was the University of Manchester, where he registered as a student in the Engineering Department in 1908. Ernest Rutherford was appointed to the Chair of Physics at Manchester in 1907 and in late 1908 began to experiment on the scattering of alpha particles (Helium nuclei) when fired through thin gold foil. To Rutherford's complete astonishment some of the particles bounced back. He subsequently wrote 'It was quite the most incredible event that has ever happened to me in my life. It was almost as incredible as if you fired a 15 inch shell at a piece of tissue paper and it came back and hit you.'²⁴ After considerable reflection on this result the then prevailing picture of the atom (as a 'plum pudding' of uniform density with the plums being representative of a fixed number of electrons) had to be abandoned as incorrect, and quantum theory

²⁰ Wittgenstein L., *ibid*, p64e.

²¹ Wittgenstein L., *Culture and Value*, p8e.

²² *Ibid*, p9e.

²³ Russell B., *The Problems of Philosophy*, Project Gutenberg eBook Ch.XV.

²⁴ Andrade E., *Rutherford and the Nature of the Atom* (New York: Doubleday, 1964) p111.

was born. Had the strange pattern of scattering been dismissed as inconsistent with theory and just an experimental anomaly instead of a wondrous event stimulating deep thought and calculation, modern science might be a good deal less revealing about the nature of reality - but possibly less bedazzling.

The relevance of this episode for the phenomenon of wonder seems to be a confirmation of Aristotle's opinion that wonder is a *practical necessity* for the continued refinement of the scientific endeavour even if Wittgenstein and Parsons are right that the appreciation of other aspects of wonder may be in danger from a scientific approach which is purely instrumental. What therefore, apart from scientific advances, are we in danger of losing if wonder ceases to exist?

The Lexicon of Wonder

The word 'wonder' is derived from the Germanic 'wunder' which is found in Anglo Saxon, Old Frisian, and middle High German texts. This is itself from Indo-European 'uen', meaning 'desire'.²⁵ The latter connection may seem curious to modern eyes accustomed to wonder only as a sort of shock but mediaeval and early modern scholars took it as implying a need to appropriate or collect 'wonders' if one was to imagine new possibilities.²⁶ However, the development of the family of words used to describe wondrous events and the emotions surrounding such phenomena are largely derived from mediaeval Latin. Studying the etymology of these words sheds light on the variations in the understandings applied to the concept of wonder, strands of which still linger. Descartes explicitly defined it as a sudden surprise of the soul (considered in detail in chapter 2) which, as Aristotle had previously implied, had the consequence of drawing attention to strange things and thereby stimulating investigation. Before that early modern period, mediaeval writers were less concerned with the physical utility of wonder and mainly wished to place it in the context of religious knowledge as might be expected considering the theological background of most of them. In her 1997 presidential address on 'Wonder' to the American Historical Society, mediaeval historian Caroline Bynum distinguishes the religious discourse found in sermons and devotional writing from the theologically-infused philosophy of 12th-14th century university academics. The latter included the popular accounts of Saints' lives, and both of these were different in tone from the work of travel writers and accounts of court gossip which intentionally entertained the curious. All these approaches to marvels and miracles used slightly different words, or applied them differently, for what was becoming a composite concept informing some of the present range of meanings concerning wonder.

²⁵ Bynum C., 'Wonder', *American Historical Review*, Feb 1st 1997 Vol 102, Issue 1, footnote p7.

²⁶ *Ibid*, p6.

Wonder in Latin is *admiratio*, derived from ‘mir’ (to see) and this gives rise by the 12th century to French ‘merveille’, and so to middle English ‘marveyle’, and the short step to ‘marvel’.²⁷ There is then an ontological contrast between marvels which are natural things to wonder at, and think about, as in the regularity of the universe (*mirabilia*), and miracles (*miracula*) which Augustine said are rare and supposedly impossible happenings (and so caused by God). Neither of these meanings suggest much in the way of shock or delight as an important consequence of marvellous events. Bynum cites the 13th century rationality of Nicole Oresme about most marvels being a consequence of people’s ignorance, along with Roger Bacon’s explanation of the resurrection of the body, as evidence for a trend to flatten the emotional impact of wonder. On the other hand both these authors ‘waxed lyrical’ over the wonders of nature which did impress them such as Bacon on the complex structure of a fly and Oresme on the variation of tastes in food and sex.

A contrast to the rationalising element in theological discourse was the use made of remarkable events in the lives of saints and martyrs to encourage piety in the common herd. Bernard of Clairvaux embraced *admiratio* as emotion to the point of stupor in preaching that the marvellous and the frankly miraculous should be recognised as being for people to gaze at with appropriate awe rather than trying to understand events beyond ordinary comprehension. Awe at the sacred, on this account, was one deliberately induced emotion but there were also entertaining stories about monsters and wondrous events which were being discovered beyond European horizons. Reaction to strange things and unfamiliar social practices recounted in such tales as *The Travels of Marco Polo* (based on his exploits from 1271-1295) did come under the widening meaning of the term *admiratio*. *Admiratio* also encompassed darker connotations bordering on terror when one feels dread at witnessing some possibly dangerous shocking event. Gerald of Wales (died 1223) used word-pictures of horrible monsters (‘monster’ being derived from *monstrare* - to show) resulting from unholy unions between humans and animals to make moral arguments.²⁸ Gerald clarifies the marvel - miracle distinction when describing salmon leaping, which *is* a marvel to behold and *would be* miraculous were it not explicable by reference to their nature as fish (my italics).²⁹ By the 14th century *admiratio* as dread was more likely to grab the attention of an audience than *miracula* if Robert of Bascvorn, a teacher of rhetoric who wrote a

²⁷ Bynum, *ibid*, footnote p7.

²⁸ Gerald Cambrensis, *Topographia Hibernica*, distinctio 2 c19-21, 5:101-109. Ed. J.F. Dimock, *Giraldi Cambrensis Opera* 8/5, (London, 1867).

²⁹ *Ibid*, distinctio 2,c41,5:126.

treatise on preaching, was to be believed in his advocacy of opening a speech with one of Gerald's terrifying tales.³⁰

In the development of the varied modern notions of wonder, the mediaeval legacy in the Latin guise of *admiratio* appears to be predominantly that of the emotional response to marvels which elicit extreme surprise, delight, awe, dread, and horror. Wonder (*miracula*) at the apparently miraculous was, by the High Mediaeval period, more a mark of ignorance about the causal factors of a phenomenon but remained available as a way of recognising the apparently impossible. By the late 19th century wonder as Cartesian intellectual surprise had become respectable, overshadowing theological awe and dread, and eclipsing theatrical horror. Nature was thought to be well understood. Gerald of Wales had been able to appeal to the nature (gifted by God, of course) of leaping salmon as an adequate explanation for the marvel he witnessed. There was no need to burden God with unnecessary individual interventions. Rutherford expected the behaviour of his alpha particles to conform to nature as expressed in early atomic theory but nothing in the theory should have allowed alpha particles to bounce back, and in another age he could reasonably have left the matter as a miracle, needing no further explanation, rather than a marvel which did. The point indicates that how one relates the wondrous occurrence to one's background of experience and presuppositions determines how astonished one feels and which words are appropriate to describe it.

A Wonderful Life

In "Wittgenstein's Wonderful Life", Peter John draws attention to arguments that 'fin-de-siecle' Vienna was an influence on Wittgenstein's 'strict bifurcation of the subjective and the objective' which was a response to a cultural failure to resolve the contradictions between the two viewpoints. He quotes Peter Munz as saying that the best that could be done was to leave life and art, life and poetry, objectivity and subjectivity in a state of 'unclarity'.³¹ He further quotes Engelmann as saying that Wittgenstein 'could not deny to himself the passionate truth of subjective feeling, of what really mattered in life.' This is an interesting echo from a mediaeval understanding of wonder expressed by William of Newborough (died 1198) who *marvels* at what he cannot grasp, not in terms of its causation but in terms of its significance or purpose. A wonderful thing was wonderful because it mattered - pointed to meaning beyond itself.³²

³⁰ Bynum, *ibid*, p16.

³¹ John P., 'Wittgenstein's "Wonderful Life"', *Journal of the History of Ideas*, July 1988, Vol.49, No.3 (Jul-Sep) p496.

³² Bynum, *ibid*, p23.

John makes a case for Wittgenstein's 'unflagging hostility toward theories and other forms of explanation' as due to an individual's sense of wonder being undermined by explanation.³³ He cites 6.44 of *Tractatus Logico-Philosophicus*: 'Not how the world is, but that it is is the Mystical' (which echoes Scheler's earlier observation) as an insight of supreme importance for Wittgenstein's life's work, and his frequent remarks, passionately expressed, to colleagues that 'I wonder at the existence of the world.'³⁴ John translates 'Wunder' in a similar remark written in German found in Wittgenstein's *Notebooks* 1914-16 as 'miracle' ('The aesthetic miracle is that the world exists, that what exists does exist').³⁵ In view of the meanings discussed above, using 'miracle' for 'wunder' here has an important significance. It suggests that the impossibility of an explanation has already been decided upon. Lacking any explanation tinges such wonder with both awe and dread at the metaphysical implications. This highlights that there are two different forms of life which are both wonderful but one is characterised as causally explicable (e.g. the behaviour of alpha particles), and one just *is* (e.g. the way the world is in itself). A culture which does not recognise that there is such a 'bifurcation' and dwells on the one at the expense of the other diminishes that civilisation overall.

Remaining open to wonder, marvelling at the phenomenon while searching for an explanation is undoubtedly appropriate if scientific progress is to be made and Wittgenstein himself contributed to this process. Therefore too much stress on Spenglerian loss of the spirit described by Scheler (if it really existed), occasioning the dominance of science over the arts, seems to me to be a dubious reason for any crusade against explanatory theory. Perhaps it is more of an explanatory fact for the anti-scientific strand in Wittgenstein's remarks that the depressed mood in Western society in the early 20th century was an unsurprising development after war, influenza, and economic collapse. Spengler's *Decline of the West* was published in 1918 and must have caught the mood of the time. However, improvements in standards of living driven by scientific advances would have seemed of more importance to the generality of people than artistic standards, and no doubt such 'philistinism' was upsetting to Wittgenstein who had already decided to give away his considerable worldly wealth.

The episode in which Wittgenstein unfavourably compared his feelings for the portraits of Einstein, Freud and Russell against those of Beethoven, Schubert and Chopin perhaps carries an implication that he would be more content with just passively marvelling in the presence of the experience than trying to work out the reasons for the

³³ John P., *ibid*, pp 498-500.

³⁴ *Ibid*, p495.

³⁵ *Ibid*, p497.

marvel itself. It seems more accurate to say that Wittgenstein is trying to highlight the significance, or even the purpose, of the wonder in aesthetic experience while decrying being sidetracked into an obsession with causation. But that there is a 'bifurcation', as John puts it, in approach is illustrated by Wittgenstein's record of practical achievement which suggests that he was very willing to use reflection about an out-of-the-ordinary event as the basis for a new scientific insight. One example would be his work (for the Medical Research Council in 1943) on pulsus paradoxus (now recognised as a generic clinical sign of incipient heart failure) in which he designed and built equipment to investigate the strange fluctuation in blood pressure (drastic reduction occurring on inspiration, with recovery on expiration) in cases of surgical shock.³⁶ This was a wondrous phenomenon in the sense of having no obvious cause but a very definite adverse effect, in that it was a portent of death. There was nothing unclear about the objective benefits, or what mattered to life, in understanding this phenomenon and its relationship with massive blood loss. The point is a caution against complete antipathy towards science, and whatever Wittgenstein said he surely showed that gaining a causal understanding of some sorts of marvels is as important as enjoying the experience provided by others.

Pursuing a clarification of the modern understanding of the nature of wonder, Stephen Greenblatt (Professor of the Humanities at Harvard) says: 'Wonder (is) the power to stop viewers in their tracks.'³⁷ Undoubtedly this definition rings true and suggests that astonishment grabs one's attention to the exclusion of any other interest. How to stimulate such focus occupies the thoughts of those charged with displaying art to its best effect. Nicholas Bell (Organiser of an Exhibition entitled 'Wonder' at the Renwick Gallery of the Smithsonian American Art Museum) seeks to describe the significance of the immediacy of wonder: 'That moment of astonishment in the face of something new and unknown that transports us out of the everyday is deeply intertwined with how we experience art.'³⁸ In an artist's effort to produce radical astonishment by challenging our presuppositions one is reminded of Aristotle's point that it would be more wonderful than anything else to a mathematician to find that the hypotenuse (not its square) of a triangle was commensurate with the sum of the other two sides (rather than the sum of their squares). To an Ancient Greek mathematician it would not be a matter of theory which would be at issue but the very structure of existence which had changed.

³⁶ Monk, *ibid*, p453.

³⁷ Greenblatt S., 'Resonance and Wonder', *Exhibiting Cultures: The Poetics and Politics of Museum Display* eds. I Karp and S.D. Lavine (Washington D.C.: Smithsonian Institute Press, 1991) pp42-56.

³⁸ Bell N., Opening address at the exhibition on Art and Wonder, Smithsonian American Art Museum, *Issues in Science and Technology*, Vol 32, Issue 3, Spring 2016 p70.

In the family of words related to wonder the one which has become almost interchangeable with wonder is 'awe'. Originally an attitude towards the wonderfully sacred, awe is nicely described by Keekok Lee as 'a mixture of reverential fear and wonder'³⁹ which accords with Martha Nussbaum's distinction between awe and wonder: - wonder makes her want to run and jump, whereas awe makes her want to fall to her knees.⁴⁰ Richard Lazarus claims that the attitude towards the awesome object can be positive or negative (depending on whether it is regarded as good or bad) and then positive awe is 'almost the same as wonder' but negative awe is 'a blend of fright and amazement'⁴¹ - although I would consider this as no different from 'dread'. The application of the description of 'awesome' to vistas of natural beauty such as the Grand Canyon or those with a hint of danger such as volcanic eruptions seem to represent a relatively recent borrowing of formerly sacred terminology to express reverence for the environment. The interesting thing about this movement in the language is that it does not convey the 'strangeness beyond immediate understanding' which I think is inherent in the meaning of wonder for most of the previous centuries. It could be claimed that this diluted version of awe is an example of what Wittgenstein was afraid would happen to wonder if all the causal connections behind amazing phenomena became commonly understood: - Still able to raise eyebrows, but then followed by a shrug of the shoulders.

³⁹ Lee K., 'Awe and humility: Intrinsic value in nature. Beyond an earthbound environmental ethics' in R.Attfield and A.Belsey (eds) *Philosophy and the natural environment* (Cambridge: Cambridge University Press, 2008) p94.

⁴⁰ Nussbaum M., *Upheavals of thought: The intelligence of emotions* (Cambridge: Cambridge University Press, 2001) p54.

⁴¹ Lazarus R., *Emotion and Adaptation* (Oxford: Oxford University Press, 1991) p238.

Chapter Two - A Cartesian Prelude

Physiology and Wonder

Having described wonder as the first of all passions and as one of the six 'primitive passions' out of which the 'complex passions' are formed, Descartes distinguishes wonder as the only one which is not induced by the mind. The other five are love, hate, desire, joy, and sadness and are initiated by some sort of decision of the intellect - either a clear judgement by the light of reason or 'the blundering constructions of the imagination';⁴² whereas wonder is driven by the body's physiological response to an external situation.⁴³ In modern physiology textbooks the 'fight-flight' response is a classic example of the physical changes wrought by a particular emotion - in this case the one of fear. Descartes gives (on a charitable interpretation) an almost modern theoretical description of bodily changes to account for this response. As a careful anatomist he was aware of the gross structure of the brain and nervous system and elaborated his mechanistic theory about the motion of vital spirits based upon that empirical knowledge. His explanation (using suitably updated language) is couched in terms of afferent and efferent nerve conduction leading to altered cardiac and skeletal muscle activity, with everything being ultimately under central nervous system control. It is a common psychological observation that different people, with different temperaments and experiences, respond in different ways to dangerous situations and his theory is also able to provide an explanation (flawed though we may believe it to be) for this problem of individual variation.

In Part I of *The Passions of the Soul* his mechanical explanation involves a hypothesis concerning how the image of an approaching danger impacts on the soul (or mind). Animal spirits, Descartes suggests, flow in the cavities of the nerve fibres from the eyes to the brain and because they are in direct contact with the pineal gland (the seat of the soul) they make an immediate impression there, producing movement in the pineal gland and enabling the soul to become sensible of the passion of fear. Vital spirits then flow down the nerves to various muscles and produce behaviour appropriate to the nature of that person (in this case whether he is disposed to fight or flee). All this may be automatic if the sensory information is either very urgent or not important enough to warrant mental involvement. Despite the possibility of automatic responses Descartes is at pains to say that the will is free and cannot be constrained. The will can interfere with the direction of movement of the pineal gland, changing the direction and flow of animal

⁴² Descartes R., *Rules for the Direction of the Mind* ed Margaret Wilson *The Essential Descartes* (New York: Meridian, 1983) p42.

⁴³ Descartes R., *Passions of the Soul*, trans. Stephen Voss (Indianapolis: Hackett, 1989) Articles 70-111.

spirits in the nerves leading out of the brain and so modify the responses of the muscles, various organs, and therefore the person's behaviour.

The response to wonder, though not specifically detailed by Descartes in the way that he does for fear, can be seen as very similar. The immediate impression of the wondrous event on the soul is made by the movement of vital spirits through the afferent nerve fibres whether they be in the visual pathways, the auditory nerves, or resulting from movement in touch, temperature, and taste receptors. All this information is of such magnitude (because that is the dramatic effect of wonder) that it cannot be ignored. It is sensory information as clear and distinct as any that even a determined sceptic cannot gainsay. As with fear there must be an immediate response governed by the degree and direction of inclination of the pineal gland resulting in action by the arm, hand, facial muscles and vocal chords to produce the characteristic 'Wow' moment.

Cartesian Metaphysics and Wonder

The idea that thought might cause movement of the pineal gland has been constantly questioned since at least 1643 when Princess Elizabeth of Bohemia wrote to ask 'how man's soul, being only a thinking substance, can determine animal spirits so as to cause voluntary actions.'⁴⁴ The answer he returned was that metaphysical reflection revealed that mind must be a distinct substance but that the union of mind and body is a primitive notion which can only be experienced. He gave an interesting (if drastically misconceived) analogy in saying that gravity is a real quality which we know is in a body because although gravity moves the body towards the centre of the earth, 'we do not suppose that this occurs by any actual contact of one surface with another'⁴⁵. The reliance on what amounts to 'hand-waving' to get across the metaphysical mind-body gap is particularly a problem for a philosopher bent on producing a mechanistic explanation for the influence of the mind on the body. However, in the case of wonder there is the difference that it is a matter of in-coming sensation making an impression on the brain *about* something in the outside world for which there is no standardised response. After it has been registered it demands thought as to how the matter should be taken further. Undiluted wonder is therefore 'embodied intentionality', occurring before there is any detailed mental processing.⁴⁶ What follows, the contemplation about

⁴⁴ Descartes R., Correspondence with Princess Elisabeth, May 6th 1643, in *The Essential Descartes*, Ibid p373.

⁴⁵ Ibid, p376.

⁴⁶ Schmitter A., 'I've Got a Little List' eds. Allix Cohen and Robert Stern, *Thinking about the Emotions: A Philosophical History* (Oxford Scholarship Online: June 2017) pp115-117.

the phenomenon and what intentional act (if any) is required, must be in the form of a series of thoughts in the mind.

The representation of the wondrous object causes, in Descartes' words, a 'sudden surprise of the soul, that brings it to consider attentively the objects that seem to it rare and extraordinary'.⁴⁷ For Descartes, after his conclusion that he was a thinking thing, there was a need to have certainty that there are objects in an external world which can be represented to the mind. Accepting that there is a problem about how mental attention is then turned into active bodily intentionality, at least his explication of wonder gives the mind some certainty that it is making judgements about things external to the mind itself. The normal trickle of sensory information about everyday events lacks the dramatic impact and attention-grabbing nature of wonder. Descartes had previously emphasised the importance of clear and distinct ideas being presented to the mind in order to have no doubt about their truth.⁴⁸ The other passions (such as love and joy) are produced within the mind by self-reflective cogitation and though they may be distinct they do not have that immediate connection with the external world.

In one of his answers to Princess Elizabeth, Descartes states that:

'For the human soul has two properties on which all our knowledge of its nature depends, one of which is that it thinks, and the other, that, being united to the body, it can act and be acted on along with it; and of this latter property I have said virtually nothing.....

We have only, for the body specifically, the notion of extension, from which those of shape and movement are derived; and for the soul alone, we have only the notion of thought which comprises the perceptions of the understanding and the inclinations of the will; finally, for the soul and the body together we have only the notion of their union, from which there derive both the notion of the soul's power to move the body, and that of the body's power to act on the soul, by causing its sensations and passions.'⁴⁹

My interpretation of this and my application of it for the phenomenon of wonder is that the soul is radically disturbed by wondrous sensations, and ideas are created in the intellect so that feelings seem to accompany the perception of the wonder. Somehow

⁴⁷ Descartes R., *Passions of the Soul*, Article 70.

⁴⁸ Descartes R., 'Meditations on First Philosophy' (especially Meditations IV and VI) ed Margaret Wilson *The Essential Descartes* (New York: Meridian, 1983).

⁴⁹ Descartes R., Correspondence with Princess Elisabeth, May 21st 1643 in *The Passions of the Soul and other late philosophical writings*, trans. Michael Moriarty (Oxford: Oxford University Press, 2015) p4-5.

these are qualities appreciated by the soul. Descartes only allows the existence of primary notions of bodily extension, creative imagination (working with shapes and movements), and pure intellect. So if wonder is not just the sum total of sensory input it must be a more sophisticated effect on the union between body and soul. Thus, in the immediacy of wonder and under assault by a tidal wave of vital spirits the pure intellect and the imagination are almost overwhelmed and the whole combination is registered as a momentous feeling.

Expressing thoughts

In *Zettel*⁵⁰ 122, Wittgenstein speculates that there are different varieties of thought - one 'for a thought expressed in a sentence; one for the lightning thought which I may later "clothe in words"; one for the wordless thinking as one works.' However, these are well demarcated descriptions only available to a linguistically competent person. Prior to that state, words for thoughts have to be learned. In the same way, words for sensations being received have to be found if any sort of description of them is to be possible. 'The inward glance at the sensation - what connexion is this supposed to set up between words and sensation; and what purpose is to be served by this connexion?' (extract from *Zettel* 426). 'What does it mean "to use a word as a designation, a name, of a sensation"? Isn't there something to investigate here?' (extract from *Zettel* 434). Wittgenstein points out that one can only know pain from one's own experience and he questions how the same thing can be generalised to other people.⁵¹ He asks 'How does a human being learn the meaning of names of sensations?' He suggests a possibility is that primitive expressions of pain, like crying, are substituted by more sophisticated pain-behaviour in the form of talking about the pain once we have learnt to use words in such a manner.⁵²

Recognising that wonder is another dramatic and urgent experience, one seems justified in speculating that something similar happens when trying to articulate thoughts on the emotional turmoil created by wonder. The case of pain seems the more 'primitive' situation to consider as the model for expressing sensations. My thought on this is that a pre-lingual child might start by expressing pain by crying and then, on becoming aware of pain behaviour exhibited by others, copy this to some degree by saying 'ouch'. Encouraged by the adults around, the child comes to understand that

⁵⁰ Wittgenstein L., *Zettel*, eds G.E.M. Anscombe and G.H. von Wright (Berkeley and Los Angeles: University of California Press, 2007).

⁵¹ Wittgenstein L., *Philosophical Investigations* eds P.M.S. Hacker and Joachim Schulte (Chichester: Wiley-Blackwell, 2009) note 293.

⁵² Wittgenstein L., *ibid* note 244.

'ouch' represents more immediate and localised pain and invites attention to the part of the body which has been injured and is painful. Localised pain as against varieties of 'all-over' pain - and whether such sensations are fleeting or continuous - eventually become distinguished from each other. Some may become signified more by groans than ouches. Before more complex differentiation, such simple expressive words like 'ouch' represent a unity between internal sensibility and external behaviour. Non vocal expressions, particularly face and hand movements, also take their place in a lexicon of ways to express to others what is sensed in the outside world (which in Cartesian fashion includes bodily peripheries), and what is felt inside. Using this model, the move from 'simple' sensation to the expression of more sophisticated emotions is, I think, a product of the increasing complexity of language. If that is so then it is reasonable to think of wonder as a process occurring in several stages, each stage dependent on a greater degree of linguistic ability. So there is initially an immediate shock in which only a brief bodily movement and a short noise can be produced; then in the immediate aftermath there may be an attempt to describe events, followed by a consideration of how these fit current beliefs, and perhaps a detailed analysis of both the event and its effects on how one felt, culminating in the ability to make a reflective commentary on the event and its consequences for both individuals and society in general.

Warnings, Feelings and Possibilities

Sensations and actions appropriate to those sensations can be observed in all higher mammals. Expressions of fear in animals, in both vocal and behavioural fashions are readily observed and understood by humans. Pedantic behavioural psychologists may question such a conclusion as unwarranted anthropomorphism but most humans who regularly interact with cats and dogs will, I'm sure, testify to their shared belief on this. It is much less obvious as to whether higher mammals experience what I have characterised as the initial shock stage of wonder. Cats can be very curious and cautiously approach new and changed surroundings, but a degree of fearfulness of something new, rather than wonder, seems the more appropriate emotional label for such behaviour. Vervet monkeys have different alarm calls for different threats, and those hearing the calls respond appropriately. A 'chutter' noise means a snake and the monkeys climb into trees, whereas 'rraup' means an eagle and they dive into bushes.⁵³ Altogether the monkeys can make 36 different noises to communicate information on both external threats and (apparently) internal emotions. Those hearing the calls evidently understand what they signify because they take appropriately intentional action, suggesting that some thought (however rapid and basic) about the situation has

⁵³ Aitchison J., *The Articulate Mammal: An Introduction to Psycholinguistics* (London: Routledge, 2007) p26.

taken place. The monkeys do not produce patterns of noises in meaningful sentences - they are confined to immediately useful cries and while they might recoil from something new and stare in a fixed manner, and grunt or cry, there is, I think, no reliable way of deciding whether they are appreciating wonder or expressing fear.

My observation of cats and dogs, and the reports about monkeys, leads me to agree with Wittgenstein that: 'One can imagine an animal angry, fearful, sad, joyful, startled. But hopeful? And why not?' With this opening line he begins his *Philosophy of Psychology - A Fragment* (previously known as Part II of *Philosophical Investigations*). He goes on:

'A dog believes his master is at the door. But can he also believe that his master will come the day after tomorrow? - And *what* can he not do here? - How do I do it? - What answer am I supposed to give to this?

Can only those hope who can talk? Only those who have mastered the use of a language. That is to say, the manifestations of hope are modifications of this complicated form of life. (If a concept points to a characteristic of human handwriting, it has no application to beings that do not write.)'

It seems to me that there is no reason why a dog cannot hope in the sense of having simple aspirations (like its next meal). However, a person in what we usually mean by a state of hope must be thinking about, or have already considered, some complex future desirable situation. That must have required an exercise of imagination, and if that is more than a vague aspiration it is likely to take account of 'what if' something untoward happens. So a series of thoughts or statements connecting present problems with future possibilities and difficulties must be running, or be ready to run, whenever attention is drawn to the hopeful matter. What a dog cannot do is describe its hopes to others and say or show what it might do to achieve the hoped for result. The point is taken that 'this complicated form of life' is exactly the internal ability to work out possibilities which other beings probably do not have.

Although the prolonged situation of hope is quite different from that of an immediate state of wonder (in which complete astonishment halts thought) once a person has recovered from the initial shock the later mental procedures processing wonder do not seem dissimilar from those involved in continuing to hope. Both require cognitive consideration, the challenging of beliefs (more so for wonder) and desires (more so for hope) within the bounds of what can be communicated in a convincing manner - both to oneself and to others. Such thoughts about a complicated situation are often clarified by

discussion, and discussion has to begin with some sort of description, for which words have to be found or invented.

Communicating feelings

It seems apparent that it is the immediate feelings of internal sensibility which are those that can be communicated with a minimum of language. Apart from expressions of pain, there are those of joy and wonder at novel situations - both frequently present in a child's world. Joy gives rise to laughter and pointing, and opportunities for adults to reinforce the names of things. With increasing experience perhaps there are decreasing numbers of opportunities for somebody to express genuine wonder (in the sense of radical amazement or astonishment), although we all think we recognise what a person is experiencing (even when he or she is not necessarily intending any communication) when hearing the single word *Wow!* accompanied by the sight of an open mouth, raised eyebrows, and raised hands which may be clapped together.

This example serves to demonstrate that whatever language is spoken in maturity there is an almost universal understanding of certain facial expressions of 'basic emotions' which favours their being biologically 'hard-wired' rather than culturally variable. In saying this I am aligning myself with Paul Ekman's argument for basic emotions as biological adaptations,⁵⁴ though I do not subscribe to his view of emotions as independent of thought. In Ekman's psychological investigations into whether facial expressions are universal markers of certain emotions he worked in the early 1970s with the Fore tribe in a remote part of New Guinea which had minimal exposure to western culture. Stories evocative of particular emotions were told to adult tribal members and they were asked to pick from a range of pictures of faces the picture most representative of the story.⁵⁵ For the Fore, pictures of happiness, anger, sadness, and disgust coincided with western understandings of the images but the Fore did not seem to see a difference between surprise and fear. This is an interesting finding from an evolutionary biologist's point of view because a surprising event constitutes something dangerous until proven otherwise, and it would therefore not be unreasonable to expect the two expressions to be similar. Although Ekman did not investigate wonder with the Fore, and does not include wonder in his list of basic emotions, I think surprise is something similar but short of wonder and brings his work into the orbit of my interest.

⁵⁴ Ekman P., 'An argument for basic emotions', *Cognition & Emotions* (London & New York: Psychology Press Ltd., 1992) p169.

⁵⁵ Ekman P. and Friesen W., *Unmasking the Face: A Guide to recognising the Emotions from Facial Clues* (New Jersey: Prentice Hall, 1975).

That humans can go beyond mere warning sounds and develop a regular structure, or syntax, to their noises is truly wonderful but its explanation has become a scientific question. A conscious awareness of oneself and a need to describe situations - descriptions about things in the world and what is going on inside - begins, one assumes, as inarticulate thought which must struggle to dress itself in language (a metaphor first attributed to Dr. Samuel Johnson). Noam Chomsky concluded that language acquisition was about learning to apply a set of rules or underlying principles which we have as an innate package in the mind allowing, on exposure to the speech of others, meaningful speech patterns to be formed.⁵⁶ More specifically, Chomsky considered that the important innate ability is that which allows hypothesis-testing by the child about how language operates, with an implicit understanding of 'universal grammar' already 'hard-wired' in the brain so that the greater part of language acquisition can usually be achieved by the age of eight. If this is so then the process of language acquisition must involve, as a feature of the hard-wiring, the ability to automatically distinguish certain basic feelings, if only to recognise one feeling rather than another and test how they should be talked about. Fortunately for the project of keeping wonder secure, children don't have the jaded senses of their elders towards the apparently miraculous. Their habit of continually asking 'why?' is surely a testament to being 'open to wonder'.

Recognising Wonder

Dramatic discoveries inspiring delight in cultural 'progress' are clearly matters of interest for intellectual conversation. Drury's injunction to say only as much as one can really know involves recognition that the science of a subject is rarely completely cut and dried. On the other hand, there is no advantage in merely remaining awestruck and failing to attempt to find a rational theory about how the world works. Discussions amongst the academic elite about causes, leading to sophisticated scientific explanations, no doubt threaten simple intuitions about mysterious events. Once explanatory concepts are generally well accepted it is understandable that they relegate the feeling of wonder to something like an antiquated foolishness, akin to how one feels when one catches oneself briefly wondering if an event could have been caused by something supernatural. Awe at something beyond one's ken may be 'good for the soul' in keeping hubris in check, and so intuitions about what cannot be explicitly known in detail have their own purpose in the scheme of things. However, anybody in a Western civilisation after the late 19th century has had a decreasing number of such mysteries to

⁵⁶ Aitchison J., *ibid*, pp96-103.

contemplate if they accepted their society's beliefs about nature. This reduction in natural marvels about which people can speculate must have become at least a sedative, if not a hypnotic, for the appreciation of wonder. To that extent the concern for wonder expressed by Wittgenstein and Parsons is readily understood.

If wonder is an emotion confined to human beings because of their linguistic abilities and is a late (in the evolutionary sense) biological adaptation, then it is something which we cannot share with animals without language even if they do have behaviours which express some inner feelings. Wittgenstein's note (Zettel, 219): 'We don't understand Chinese gestures any more than Chinese sentences' can be understood as implying that meaningful gestures are a cultural development on top of our constitutional ability to convey a bodily expression of feeling. The Cartesian frame of reference is of course culturally acquired so that within that culture the idea of sensory information triggering inner thoughts which precede decisions to act becomes intuitively correct. It is just accepted that the mind works like that.

There is a recent dramatic scientific study purporting to equate awe and wonder with particular brain states. It concerns astronauts experiencing wonder with 'wows' and other exclamations of astonishment at viewing earth from space and having associated electro-encephalogram changes.⁵⁷ It would, in the light of current theories of consciousness as a property of a functioning brain, be very surprising indeed (a cause for wonder in its own right) if the astronauts didn't have observable brain changes associated with wondrous perceptions. Undoubtedly something happens in various brain centres but this is just a statement of the obvious. More relevant is Hao Tang's criticism of the deeply ingrained notion that the sensible part of this is an independent realm separate from the subsequent intellectual appreciation taking place in the mind. As he says, 'Our sensations, insofar as we are rational animals, are already infused with conceptual content, already shaped by the hand of reason'⁵⁸. The infusion of conceptual content is, I think, best understood as culturally acquired belief systems, which will be discussed in chapter three, and the rapidity of recognition that something has happened to transgress those beliefs (and is therefore wondrous) is quite remarkable too. An explanation for such speed must be that our catalogue of beliefs shapes our expectations of sense data and how we should feel about them. Effectively this 'short-circuits' any need for immediate thought. I think this fits with Schmitter's notion of

⁵⁷ Reinerman-Jones L., 'Neurophenomenology: an integrated approach to exploring awe and wonder' *South African Journal of Philosophy* 2013, Vol 32, Issue 4, pp295-309.

⁵⁸ Hao Tang 'Wittgenstein and the Dualism of the Inner and the Outer', *Synthese* Sept 2014, Vol 191, Issue 14, p3175.

wonder as 'embodied intentionality' so that the sensory system can signal that something strange is happening well before cognitive representations are completed.

At the risk of sounding like a 'just so' story or a moralising fairy tale the conclusion of this chapter tries to apply the broad aim of the above discussion to a narrative about the part played by wonder, probably a uniquely human experience, in the uniquely human process of language development.

A Wondrous Tale

A thing which must have been wondrous to early humans with limited linguistic ability would have been the phenomenon of lightning followed by thunder and often associated with rain: - Visual effects followed by auditory stimulation, and then getting very wet. Occasionally trees and people would be seen being struck by lightning bolts. Initial thoughts must have been about how to avoid the bolts and keep the family dry - requiring no more language than the vervet monkeys need to warn of eagles. Afterwards one might imagine attempts to describe the violent storm and its consequences to family members who had, say, been in the next valley and unaware that the sky had opened and terrible sounds had come from the other side of the mountain. If death by lightning had occurred the need for explanation would be more important - especially with a view to avoiding it in future. Large and angry beasts were a common feature of their world and the notion that a really angry giant lived behind the mountain would not be a huge conceptual leap.

Nobody ever got to see the giant but that only added to its mystery so that the word for 'storm giant' might easily come to symbolise unimaginable power. If the storm giant sent rain during a drought it was good power, but lightning killing the cattle was malign power. Once 'storm-giant-good' and 'storm-giant-bad' were commonly understood to represent types of power it became possible to use these words in an abstract sense to talk about matters beyond the physical objects of everyday life. Notions of good and bad and how to encourage the one rather than the other must have quickly expanded (by analogy and metaphor) the lexicon of useful symbolic words and with them the ability to individually think about situations.

The next chapter addresses the capacities required by humans before anything like the above could have taken place.

Chapter Three - Wonder, Consciousness, and Intentionality

The Concept of Consciousness

In *The Blue and Brown Books* Wittgenstein makes a distinction between 'a mental state as a hypothetical mental mechanism, and a mental state meaning a state of consciousness (toothache, etc.).'⁵⁹ To be in a state of wonder is therefore analogous in this respect to having toothache. The scientific approach to explaining the existence of this apparent natural kind (the mental state we call consciousness) by reference to these two examples would be to attempt to enumerate the ingredients which toothache and wonder have in common. Both are difficult to deny as clear and distinct feelings, and both are difficult to describe as specific things. By going back over recent events (running a mental mechanism called memory) it may be possible to identify candidate causes for the feelings but they are hardly likely to be the same causes for the two states. Scientists would like to find regular laws which explain how the state came to be, and predict when it will occur again. Toothache is the easier one to predict by investigating the substrate in which it seems to occur - decayed teeth and diseased gums. The feeling of wonder exists in a more nebulous relationship to its supporting medium, and investigating how it occurs concentrates on mental mechanisms and so would be the modern equivalent of Descartes' movements of the pineal gland. Attempts to map the 'brainwaves' of the astronauts come into this category.

Wittgenstein warns against missing the 'real foundations' of any inquiry: 'The aspects of things that are most important for us are hidden because of their simplicity and familiarity.'⁶⁰ For instance, he says, one's own consciousness is not often the subject of one's attention and when considering it one is 'astonished' that 'THIS is supposed to be produced by a process in the brain!'⁶¹ Wittgenstein's wonder at his awareness of being aware is equalled by his wonder (and his doubt) that there might be a reductive biological explanation. Raymond Tallis, a physician and medical academic, is so astonished at the existence of consciousness that he says it should be contemplated in a maelstrom of speechless amazement.⁶² Wittgenstein is nevertheless in no doubt that human beings ordinarily can see and hear and feel because they are matters of general experience. 'So they are their own witnesses that they have *consciousness*.'⁶³ And in

⁵⁹ Wittgenstein L., 'from *The Blue and Brown Books*' ed Stanley Rosen, *The Philosopher's Handbook* (New York: Random House, 2000) p395.

⁶⁰ Wittgenstein L., *Philosophical Investigations*, 129.

⁶¹ *Ibid*, 412.

⁶² Tallis R., *Enemies of Hope* (Basingstoke: Macmillan Press, 1997) p352.

⁶³ Wittgenstein, *ibid*, 416.

talking to others, attempting to interpret what is going on in their heads, one wants to know their thoughts not their brain processes:

‘A thought does not strike us as mysterious while we are thinking, but.....How was it possible for a thought to deal with *this very* object? It seems to us as if we had captured reality with the thought.’⁶⁴

David Chalmers says that consciousness refers to many different phenomena and this fact gives rise to ‘the easy problems of consciousness’ (such as explaining information processing, attention focussing, and mental state reporting) which are all potentially explicable by reference to neuronal or computational mechanisms. There is also the ‘hard problem’ of consciousness which is subjective experience, or the ‘what it is like’ to be in a particular state.⁶⁵ Easy problems concern the analysis of cognitive abilities or functions and any explanation only has to express a mechanism for producing such a function. Subjective experience is not to be thought of just as a simple awareness producing a specific behaviour like a kind of reflex action, but it is a wholesale awareness of what is going on and a feeling about that too. When all the various cognitive functions have been explained, Chalmers asks: ‘*why is the performance of these functions accompanied by experience?*’ and he goes on to find that ‘there is an explanatory gap between the functions and experience,’ but he does allow that experience may ‘turn out to play an important cognitive role.’⁶⁶ *Seeming to capture reality* with thoughts (or, indeed, emotions) is, I think, a good description of the whole process of wonder - registering and interrogating the wondrous event, and then over time applying cognitive consideration in more detail, provoking further feelings such as interest, excitement, or distress, at various levels of intensity.

In everyday life many events claim a share of focussed attention but pass relatively unnoticed as of minimal interest. Something occurring in reality which is found subjectively astonishing to the point of wonder is an exceptional feeling accompanied by particular cognitive performances. I am suggesting that the special place of wonder is that it supplies such an intense experience as to be the unavoidable causal trigger for various types of mental mechanisms and emotional responses. It could be said that any emotionally charged experience might do this - something found to be immensely distressing, such as witnessing an accident for instance. Indeed, I think this is so, and such an event would be described as ‘dreadful’, categorising it (as discussed in chapter one) as belonging to the family of wonder. The intensity of the experience is the key to

⁶⁴ Ibid, 428.

⁶⁵ Chalmers D., *The Character of Consciousness*, (Oxford:Oxford University Press, 2010) pp2-3.

⁶⁶ Ibid, p6.

grabbing the full attention of the subject - the importance of which for future interest and action was recognised by people as diverse as Robert of Bascvorn teaching rhetoric and Aristotle praising *thaumazein*.

Why it should be that wonder, a conscious experience briefly occupying the whole of consciousness, exists at all is part of the 'hard' problem outlined by Chalmers, for which I have no answer, but my intention is to outline how it acts as a trigger and why that trigger mechanism needs to be kept secure.

The Unity of Consciousness

I think that if wonder has the effect of grabbing a person's attention so totally that all other mental functions briefly cease it must give some credence to the idea of there being a single central self - Descartes' thinking thing. This is in opposition to the notion of there being a loose coalition of psychological states, none with any writ to oversee the others. That situation is more represented by Lichtenberg's comment on Descartes' *cogito ergo sum* in which he observed that the most that can be inferred is that there is thinking going on⁶⁷ which does not necessarily support a central origin for thought and focus for emotions. There is no doubt that the idea of human consciousness has varied historically and is not an uncontroversial topic. In Aristotle humans were separated from animals by their ability to think abstract thoughts and make rational decisions. They were therefore in possession of reason and will, with the capacity to manipulate symbols and invent language. In my scheme, manipulating symbols and inventing words are the result of mental mechanisms, while reason is a conscious state of awareness 'overseeing' manipulations. Reason must therefore be aware of wonder as a type of disturbed state and be able to distinguish it from other immediately important feelings such as surprise and fear.

Aquinas agreed that the overall functions of reason and will were the major part of each soul, though the soul also had vegetative and sensory parts shared with plants and animals respectively.⁶⁸ Spinoza was a close contemporary of Descartes but radically disagreed with Descartes' ideas about freedom of the Will. His scheme of things would have no place for wonder as a phenomenon of any significance other than as a matter of religious awe. In Spinoza's system, mind is necessarily something narrower than it is for Descartes due to Spinoza's God being the thinking thing who is the cause of all

⁶⁷ Lichtenberg said 'It thinks, we should say, just as one says it lightnings. To say cogito is already too much if we translate it as I think. To assume the I, to postulate it, is a practical necessity.' Lichtenberg G., *Philosophical Writings*, ed. Steven Tester (New York: State University of New York, 2012) p5.

⁶⁸ Kenny A., *Aquinas on Mind*, (London: Routledge, 1993) pp31-32..

modes of thought, and separately the cause of all modes of extension (body): - 'That, therefore, which determines the mind to thought is a mode of thought and not a mode of extension; that is, it is not body.'⁶⁹ The passions for Spinoza are not modes of thought, which leads to their expressions being excluded from the concept of mind. The emotions are then defined by Spinoza as confused or inadequate ideas,⁷⁰ and so wonder is of little importance as it must only lead to misapprehensions. Although Spinoza would have no interest in keeping wonder secure, his comments about the concept of wonder are perceptive, as will be referred to later.

The boundaries of the Cartesian mind went beyond the intellect and became whatever was open to introspection, so including sensation and the emotions.⁷¹ This wider notion of consciousness has persisted and has relevance for the notion of wonder as dramatically unusual sensory information making a huge and unavoidable impact on human awareness. However, there is more opposition from Kant who criticised Leibnitz (and the then orthodoxy) for the *a priori* notion of the unity of the thinking subject because, Kant says, there is no possible sensible intuition: 'I therefore have no cognition of myself as I am, but only as I appear to myself. The consciousness of oneself is therefore far from being a cognition of oneself' (B158)⁷². Though Kant seems to agree that without some sort of unity experience would be impossible, there is worse to come as William James said that consciousness 'is the name of a nonentity.....the faint rumour left behind by the disappearing "soul" upon the air of philosophy.'

What James did endorse was 'pure experience' as 'the immediate flux of life which furnishes material to our later reflection.'⁷³ This description certainly fits my idea of the purpose of wonder though if there is no unity of consciousness there is surely nothing which allows any 'later reflection'. In his *The Principles of Psychology*, James comments:

'Our whole cubic capacity is sensibly alive; and each morsel of it contributes its pulsations of feeling, dim or sharp, pleasant, painful, or dubious, to that sense of personality that every one of us unfailingly carries with him.'⁷⁴

⁶⁹ Spinoza B., *The Ethics Part III* trans. R.H.M. Elwes (New York: Dover, 1955) p131.

⁷⁰ Ibid, p185.

⁷¹ Kenny, *ibid*, pp16-17.

⁷² Kant, I., *The Critique of Pure Reason*, eds. Paul Guyer and Allen Wood (Cambridge: Cambridge University Press, 1998).

⁷³ William James quoted by Bertrand Russell in *A History of Western Philosophy* (London: Unwin, 1979) p767.

⁷⁴ James W., *The Principles of Psychology* (New York: Dover, 1890) p450.

I think James is guilty of missing the real foundations of those pulsations of feeling, mainly because he deliberately asks his reader to contemplate 'more tranquil states' than 'any strong gust of passion' in subtracting the bodily feelings from the emotion and finding nothing left ('no mind stuff') - which shows that he did not consider wonder with its maelstrom of mental activity that is still present after subtracting the typical bodily responses. As an antidote to James, I am surprised to have to invoke a poet rather than a scientist to illustrate the value of consciousness. The poem is taken from Robin Attfield who quotes Thomas Hardy's 'Before Life and After':

A time there was - as one may guess
 And as, indeed, earth's testimonies tell -
 Before the birth of consciousness
 When all went well

None suffered sickness, love, or loss,
 None knew regret, starved hope, or heart-burnings;
 None cared whatever crash or cross
 Brought wrack to things⁷⁵

Hardy, at least, was aware that emotion, and its meaning, is founded on consciousness and that love, hope, or distress - not to mention wonder - must reside in individual minds.

Wondrous mental states

Ned Block has proposed a conceptual distinction between 'phenomenal consciousness' (what it is like to have a particular experience) and 'access consciousness'.⁷⁶ The former would equate to the usual notion of wonder as an extreme 'what it is like' experience. Access consciousness is more the something which allows a follow-up on wonder. The general idea is that it occurs when one has the ability to report on a particular mental state, think about it and modify or control a related behaviour. In other words the mental state is open to the rest of the conscious 'system' (my word for want of a better way of describing the totality). In a later article Block interprets 'signal detection theory' data as providing some empirical evidence for there being two neural correlates of consciousness (two types of circuitry, to use a wiring diagram analogy);

⁷⁵Attfield R., *ibid*, pp81-82.

⁷⁶Block N., 'On a confusion about a function of consciousness', *Behavioural Brain Science*, 18 (1995) pp227-247.

one for providing the feeling, and one for providing the broadcasting connections to functional units like memory and decision-making.⁷⁷ It might be thought that everything in consciousness should be accessible as a matter of definition but there are many perceptions which don't come to immediate attention and remain hidden - though they may be retrievable under certain circumstances, perhaps such as hypnosis. Some emotions may be suppressed but that topic is infused with theory-laden Freudian terminology which I would wish to avoid. More relevantly described as unconscious are those ways of doing things that are subliminally ingrained practical capacities underpinned by 'unconscious' beliefs such as this twig will not bear my weight but that branch will.

Chalmers appeals to the intuition (pace Kant) that all my experiences, perceptual, emotional, physical, and cognitive are 'subsumed within a single state of consciousness.'⁷⁸ So in this spirit my evocative (if not quite wondrous) example is of a Fell runner hurtling downhill with all the visual impressions of rocks in the way, feelings of elation, breathlessness, aching quadriceps, and notions of geographical position. Each of the mental states making up all the various 'pictures' over seconds or minutes can be focussed upon and described as individual aspects of consciousness. In terms of the unity thesis the whole experience of Fell running is 'not *just* a conjunction of conscious states but also a conscious state in its own right.'⁷⁹ Chalmers also defends the notion that phenomenally conscious states (feelings) are part of access consciousness, and conversely that any state in access consciousness ('watch that rock ahead!') has a 'what it is like' aspect. My memory of Fell racing supports the idea that the what it is like to see a rock ahead while on a country walk is different from the experience one has when seeing it while approaching at speed and slightly out of control, which is different from what it is like after adding in a degree of exhaustion. Then the whole phenomenal experience is not a series of snapshots piled together but a single feeling, itself accessible to decision making functions (is it time to pull out?) and memory functions (required to bore everybody with afterwards).

In saying that this last example is 'not quite wondrous' it is only that, having done it before and understanding quite a lot about it, my sense of wonder has drifted away, though not quite been sent to sleep. A new spectator to the sport watching somebody drop off the edge of a cliff at speed and stay on his or her feet might indeed think and feel that it is a wondrous sight, or possibly that it is a very silly thing to do, emphasising

⁷⁷ Block N., 'Two neural correlates of consciousness', *Trends in Cognitive Sciences* Vol 9, Issue 2, Feb 2005, pp46-52.

⁷⁸ Chalmers, *ibid*, p501.

⁷⁹ *Ibid*, p502.

the subjective nature of this observational state of consciousness. The immediate apprehension of something extraordinary happening is, I have suggested, first an astonishing phenomenal experience which is then closely followed by a degree of cognitive appreciation. If, in my hypothetical race, the rocks began to split apart and be replaced by smooth green turf at my approach it would be a shock. I might then think: 'What trickery is this?' before concluding that it was a hallucination and indeed time to drop out of the race. Both the immediate shock of the wonder and the subsequent cognitions struggling to make sense of it become part of access consciousness available for further consideration. Despite his different metaphysics, Spinoza puts this very well: 'Wonder is the conception (*imaginatio*) of anything wherein the mind comes to a stand, because the particular concept in question has no connection with other concepts.'⁸⁰

Wondering about feelings and emotion

In chapter two the Cartesian idea of wonder being the first of all passions was introduced. The word 'passion' for Descartes implied something being imposed on one, related to the word 'passive', and in the case of wonder that imposition is in the form of overwhelming sensory information. My scenarios of fell racing and neolithic lightning strikes have dwelt on the experience induced by wondrous events, with an unspoken assumption that there is a continuity between sensations, feelings, emotions, and experience. I do consider that this is so but it is not an uncontested notion.

Robert Roberts provides a sketch of what an emotion is, saying that they are usually felt and that some have 'physiological concomitants'. They also tend to have propositional content (giving the example of fear relating to belief of being in the presence of danger) and some 'beget dispositions to kinds of actions' which may or may not be under voluntary control. He also states that they are typically experienced as unified states of mind containing, for instance, belief, desire, physiological perturbation and behaviour.⁸¹ Roberts runs through a list of what I would call 'feelings' which have been described as emotions by other philosophers. Wonder is not mentioned but religious awe is. Otherwise almost everything else 'felt' has been included by one philosopher or another from avarice and patriotism to obsequious laughter and the startle reflex. The range covered might tend to justify Amelie Rorty's contention that 'emotions do not form a natural class'.⁸² However, I think that they might in the etymological sense of 'emotion' being the 'drawing out of some sort of action'. Also, as Roberts comments, there is in

⁸⁰ Spinoza, *ibid* 'Definitions of the Emotions' IV.

⁸¹ Roberts R., 'What an emotion is: a sketch', *The Philosophical Review*, 97, no2, pp183-184.

⁸² Rorty A., ed., *Explaining Emotions* (Berkeley: University of California Press, 1980) p1.

any case a commonsense belief (consistent with mine) that emotions *themselves* (his italics) can be felt.

My preferred explanation for the origin of emotions is that they evolved against the background of dawning conscious awareness of individuality because they confer some survival advantage in 'dealing with fundamental life-tasks' as Ekman suggests.⁸³ As such, I think that being capable of an emotional feeling is of *intimate* importance - crucial for an individual's life in and of itself - and therefore consciously registering *any* emotional experience (emphasising the range of feelings involved) can be understood as an embodied reaction alerting one to the need for some sort of response including the application of reason to the situation. Roberts remarks that 'It is almost a truism among philosophers today that "emotions aren't feelings".'⁸⁴ To my mind a tightness in the chest or general bodily *sensations* of arousal are clearly not emotions, but *feelings* are conscious states which have been arrived at by a series of mental processes and are *about* something. The emotion which is 'wonder' begins with overwhelming sensory input but the mental turmoil resulting from it has to be accompanied by a feeling about the situation, which may amount to shock and awe but is also a desire for understanding.

The last point draws on one made by Wittgenstein:

'A distinction should be made between the object of fear and the cause of fear.'
So a face which inspires fear or delight (the object of fear or delight) is not on that account its cause, but - one might say - its target.'⁸⁵

One has tightness in the chest as a 'sensation' and that is not about, to, or from anything in an intentional sense. It just is, like toothache just is. Both have causes that one might then have a feeling of fear *about* - such as either a heart attack or a major cavity. Loosely following Gosling⁸⁶, one can enumerate three types of object involved in the phenomenon of wonder: the objective cause (a wondrous event), the conscious feeling ('wow'), and the object of concern ('why does this event matter?').

Although wonder, separate from awe, is rarely included in philosophical discussions of emotion, it seems apparent that it is both a feeling distinct from any other and a

⁸³ Ekman P., 'An argument for basic emotions', *Cognition and Emotions* (London and New York: Psychology Press, 1992) p6.

⁸⁴ Roberts R., *ibid*, p185.

⁸⁵ Wittgenstein L., *Philosophical Investigations*, note 476.

⁸⁶ Gosling J., 'Emotion and Object', *Philosophical Review*, Vol.74 (Oct.1965) p489.

motivating factor for action. In recent combinations of philosophical and scientific work on emotions (what is becoming known as ‘affective science’) attention has focussed on emotions exhibiting ‘a distinctive motivational force’^{87, 88}. Scarantino and Nielson quote Doring that ‘an emotion is an occurrent conscious state, with a certain affect, and with a certain kind of intentional content’ and the latter is directed at a target ‘construed in evaluative terms’.⁸⁹ To my mind, applying the theory to wonder, this definition points the way to considerations of what is significant, or what matters, about any wondrous phenomenon. Understanding intentionality is therefore a key factor in establishing that significance.

Intentionality

Any process involved in considering experience is necessarily one *about* events or feelings which are happening, have happened, will, or possibly might happen. The mental states making up such activity are known as intentional mental states. Those early humans described in the last chapter struggling to represent astonishing events such as thunder and lightning in order to try to begin to explain catastrophic effects must have quickly developed a variety of attitudes about the phenomena. Presuppositions about how their world worked must have included some notions about cause and effect but in order to talk about storms (to take the example a little further) they must have begun to operate with particular beliefs, desires, memories, and intentions regarding what such turmoils in nature could be. The possible belief in a storm-giant explaining thunder and lightning, and the desire to propitiate his anger and so contain the fear inspired by feeling helpless, are examples of intentionality regarding the storm and its dreadful consequences. Talking meaningfully to others about the storm requires intentional speech acts made according to generally understood rules of engagement and any analysis of this process seems immensely complex. However, wondering about complexity and hoping and striving for some sort of conclusion is precisely the value of being awake to strange occurrences.

In developing a theory of Intentionality by way of his ‘Speech Act’ model John Searle makes the basic assumption that the philosophy of language is a branch of the philosophy of mind. Objects in the world and states of affairs generally can be represented by speech acts, which are a type of human action. These are fundamental

⁸⁷ Scarantino A., ‘The motivational theory of emotions’ in D.Jacobson and J.D’Arms (eds) *Moral Psychology and Human Agency* (Cambridge: Cambridge University Press, 2014) pp156-185.

⁸⁸ Scarantino A., and Nielson M., ‘Voodoo dolls and angry lions:how emotions explain arational actions’, *Philosophical Studies* 2015, 172, pp2975-2998.

⁸⁹ *Ibid*, pp2982-3

biological capacities with clear survival value 'of the mind (or brain) to relate the organism to the world by way of such mental states as belief and desire, and especially through action and perception.'⁹⁰ Searle's 'preliminary formulation' of Intentionality is 'that property of many mental states and events by which they are directed at or about or of objects and states of affairs in the world.'⁹¹ He gives a robust defence of realism, as 'the view that the world exists independently of our representations of it'⁹², pointing out that if human-kind had never existed the world would be much as it is.

'Representations' here is a term for all the intentional aspects of life (such as language, belief, and perception). Searle regards consciousness as arising naturally from 'higher-level nervous systems' (such as human and many animal brains) and this gives rise to intentionality.⁹³ Minds are therefore both mental and physical and Searle abandons the concept of a mind-body dualism.

Intentionality and the Background

For Searle, and probably for most of us interacting with our surroundings, most of the time we make no convoluted hypotheses about feeling hungry and satisfying the desire for food. Nor do we think too much about driving to the shops to buy something edible. We just do it, without first questioning whether the laws of motion concerning the car's acceleration still apply or that the supermarket metaphysically continues to be. Searle calls the totality of our presuppositions 'the Background',⁹⁴ and our unthinking ability to carry out appropriate actions are our 'Background capacities'. These are nonrepresentational mental capacities which allow all representations to take place.⁹⁵ They are the 'know how' (not the 'knowing that') with which we navigate the everyday world. Skilful actions that we do automatically, from getting appropriately dressed and eating dinner to being cautious in making a near-vertical descent of a rock-strewn hillside, all rely on our individual Backgrounds built up as we have matured and experienced what it is preferable to do in the worlds we usually inhabit. Such capacities include the unthinking expectation that soup might be better in a bowl than on a plate and that a silver fish-knife won't be much good at cutting meat. Similarly, we don't calculate the odds that a solid-looking rock will likely not disintegrate at our approach, or debate whether or not it might damage us in a collision. We just understand, without making any explicit representations, that it cannot be wished away and must be avoided. It is when these basic understandings are contravened in a wondrous situation

⁹⁰ Searle J., *Intentionality* (Cambridge: Cambridge University Press, 1983) vii.

⁹¹ *Ibid*, p1.

⁹² Searle, J., *The Construction of Social Reality* (London: Penguin, 1995) p153.

⁹³ Searle J., 1995 *ibid*, p6.

⁹⁴ Searle J., *Intentionality* (Cambridge: Cambridge University Press, 1983) pp141-159.

⁹⁵ *Ibid*, p143.

(such as the rock spontaneously combusting) that higher cognitions and emotions are called into play.

What is difficult to recognise, because of residual dualism in the language, is that mental states initiating automatic responses are intertwined with the physical actions involved in these scenarios. By 'intertwined' I mean that they are a single process arising from a conscious body which has the power of movement. In chapter two it was suggested that Cartesian dualism made the sensible and the intellectual into two separate domains, and I referenced Hao Tang as saying that this was incorrect because sensations are already infused with conceptual content. While this helps explain why something might seem wonderful, in that it has transgressed any immediately available concept (the point about wonder recognised by Spinoza), there is, I think, a similar point to be made about the 'performative' side - that intentional content is an intimate part of the action generated. Out on the Fells the rock must be avoided and an appropriate swerve executed: Perception, and then barely conscious recognition of the rock's importance accompanied perhaps by a twinge of dread, followed immediately by the need for a decision (at a level below that needed for a debate on the matter), and then appropriate action - are all part of a conscious unity which constitute a particular Background capacity.

Irregularity as a cause of Wonder

Background capacities are built up from individual experience of observing and interacting with events in the world. Searle details how we can come to our understanding of cause and effect by means of both observation and by trial and error at manipulating things around us. He gives the example of a child learning that an impact on a fragile vase will cause it to smash both when he hits it himself and when something else independently falls on the vase. Having repeatedly both seen and directly activated such destruction the child forms an assumption that in respect of smashing fragile things there is some regularity of cause and effect in the world.⁹⁶ Similar examples of other repeatable incidents build up an overall picture of regularity. A cause seems to make a difference to a particular situation and without it some expected effect does not happen. There is a subtle difference between a regularity in terms of cause and effect in nature (things observed to be happening because that is the way the world works) and Intentional action (driven by a conscious being) such as in trying to make something happen: - the conscious being has already taken a stance that those regularities will indeed apply in the creation of a new situation.

⁹⁶ Ibid, pp128-129.

To cognitively distinguish between something being caused by one event and not another relies on the existence of background regularities. Searle's example is of raising one's arm and being astonished at seeing a window across the room slide open.⁹⁷ Testing the possible causal connection by raising one's arm again presumes that the same conditions as before still exist and that there is still a regularity of efficient causation in play. The difference on the second occasion is that raising one's arm as a test has the intentional content of *trying* to raise the window. If the window keeps sliding open then this example of action-at-a-distance is indeed a possible wonder. At least, it contravenes most people's Background assumptions about what is possible and should trigger a desire to know why this has happened in the Aristotelian tradition of thaumazein.

Intentionality and the Network

An intentional mental state concerning something in the landscape only has the 'conditions of satisfaction' (what would count, say, as an accurate perception of the object or the fulfilment of a desire about it) that it does because it exists in context with a myriad of other intentional states (Searle calls this 'the Network'). A person has that mental state amid his largely cultural network of beliefs, hopes, fears, and desires as well as having it exist alongside his Background capacities. The wildly improbable example Searle gives to illustrate the concept of the Network begins with Jimmy Carter's desire to run for President.⁹⁸ Imagine that the neurobiological correlate required to produce the mental state which presented this desire in Carter had briefly existed many thousands of years ago in the brain of a Pleistocene man to the extent that he felt obliged to utter the meaningless sounds of 'I want to be President.' His desire was type-identical with Carter's, driven by the anatomically identical set of neurones in his brain physiologically poised to activate in the same way as would those in Carter's, but he lacked all the beliefs about the USA and its democratic system which obviously constitute only part of the necessary intentional Network. Apart from that, he was completely bereft of those Background capacities such as knowing how to lobby his Party, fundraise, or speak on television, or find out how to do so. This example is ridiculous but does illustrate how such an outlandish desire in the stone age would constitute a wonder but be completely understandable in the twentieth century. The lesson from this is that it is cultural development (including science) which may send wonder to sleep and perhaps indicates that the preservation of wonder depends on a continuing shift in what is aimed at as an object of wonder.

⁹⁷ Ibid, p133.

⁹⁸ Ibid, pp19-20.

This chapter has endeavoured to provide an understanding of the way that an individual can register and begin to make sense of a wondrous event. The feeling of wonder as an overwhelming emotional experience has been discussed in the light of philosophical and psychological texts, with a conclusion that wonder is an affective mental state which has to be ignited by a subjectively astonishing external event. Consciousness and its accompanying feature of intentionality have been discussed as being the real foundations of the ability to wonder. Another crucial factor, arising from these foundations, is the remarkable phenomenon of being able almost instantaneously to recognise when conceptual boundaries are breached. This, I suggest, arises from deeply embedded beliefs and understandings gained from applying reason to experience of how the world works, including the sorts of sensations which the world provides, forming many and varied concepts concerning the world and how it is possible to interact with it. These I have presented as being contained by Searle's overarching concepts of the Background and the Network.

I equated the Background capacities to the things that Chalmers calls 'the easy problems of consciousness'. In principle it is not difficult to elucidate the neuronal systems and mechanisms by which the brain processes information and links it into cortical and cerebellar cells for movement, into circuits in the limbic system for memory and affect, and into other ill-defined regions for coordinating action. Such a mechanical explanatory scheme for emotional and behavioural activity was respectable science as early as the late nineteenth century. In seeking to elucidate the phenomenon of wonder one is investigating the existence of another level (metaphorically speaking) of consciousness dominated by Intentionality and incorporating both the Background and the Network.

This level of awareness allows a more subtle appreciation of what transgresses the understood boundaries. So things that can trigger the feelings and cognitions associated with wonder, awe, and dread have come to include transgressions of symbolic conceptual boundaries. Examples include, perhaps, the notion of a peanut farmer becoming leader of the free world (a minor wonder to some and a shrug of recognition to others), or the idea that a malign magic spell unleashed coronavirus (irrational dread) and only a witchfinder-general can save us (a mixture of awe, dread, and ridiculous hope). All these cognitions and feelings are subjectively dependent on how they relate to our previously assembled Network of beliefs.

The next chapter considers the function of wonder, especially in a social setting, both as an emotional experience and as a stimulus for action.

Chapter 4 - Wonder and the Social World

The Function of Wonder

To assert that wonder must be kept secure implies that it has an important function. Unfortunately there is a difficulty with the notion of 'function'. Biological systems are often described as having particular functions in order to further the interests of the organisms bearing them. Philosophers analysing the notion of biological function frequently cite the function of the heart as an example, but differ about the meaning of the word 'function' that they take from the example. In general there is no argument that hearts have evolved as a biological adaptation involved in the production of a more efficient inter-cellular transport system. It is unequivocally the case that the heart pumps blood and one can describe the causal processes by which its stroke volume and rates of contraction are regulated to keep sufficient blood circulating, but when saying that the function for which it is *designed* is to maintain blood circulation we are applying a teleological notion. The intrinsic *purpose* of the heart then becomes the pumping of blood, and its usefulness is of course to promote survival - which must mean that it is valuable. Anything that is functional is generally thought to have a value but the extent of the value is a relative term depending on how good or bad the thing is at performing the function. In fact there is nothing intrinsically good or bad about a heart - it carries on contracting for causal reasons and only an outside observer knowledgeable about heart performance can decide its value relative to some arbitrary standard. A teleological stance concerning the heart implies that there is indeed something outside, something capable of designing more functional pumps, feeding into some overall purpose.

The relevance of this for the experience of wonder is that much of its purpose has been previously described (in chapter one) as 'attention-grabbing', both in fuelling scientific curiosity (as in *thaumazein*) and in making ethical points (as in Gerald of Wales and his tales of monsters). The attention-grabbing process only occurs if something is seen by the audience as subjectively wondrous and so there is a matter of judgement involved before a phenomenon can function as wonder. The ability of people to distinguish different shades of wonder, as reflected in the family of words which describe it, and differ amongst themselves about it, is evidence that to ask for the function of wonder is a more complex question than asking for the function of the heart. Certainly wonder has a biological effect (jangling brain cells and raising heart rates, for example) but it also functions to trigger subjective feelings and judgements, seeming to have a purpose going way beyond its biological effects.

Notions about evolutionary causes tend not to refer to any overarching purpose in the way the world is arranged. The process of Darwinian evolution is a blind application of brute, natural forces. Indeed, Richard Dawkins has a tee-shirt inscribed 'Evolution - The Greatest Show on Earth - The Only Game in Town'.⁹⁹ Robert Nozick gives an evolutionary account of the development of rationality in saying that Pleistocene Man gained a survival advantage by honing his ability to reason. He asks what is *the function of reasons?* And says that they are relevant in justifying belief in that they 'are connected to the truth of what they are reasons for - that is the factual connection - and so believing for reasons is a route to believing the truth.'¹⁰⁰ Discovering truths about nature in a harsh world of kill or be killed must have given a survival advantage. Reason is an offshoot of consciousness and has already been noted as being a crucial part of the process of wonder, from realisation that a belief is under attack, and understanding that this is the cause of an overwhelming feeling, to producing a decision on what should happen next.

However, Ruth Millikan, who also follows a biological model for the development of 'proper function' does supply a teleological tinge in which something 'A' exists because at sometime in the past a predecessor of 'A' successfully performed 'F'. Either the historical predecessor of A is directly reproduced or the need for F 'normally causes the performance of F by *means* of producing an item like A.'¹⁰¹ Carolyn Price references Millikan's aetiological stance and develops her 'folk biology' concept about the function of hearts (and other organs) around the 'core account' of functions which include their aetiology (they are able to do something because their ancestors had something like that ability) and their means/ends relationships with other organs. They are functional 'if they assist another item in some way'.¹⁰² She further requires the attribution of a function to involve 'a certain level of abstractness' in talking about its effect rather than its design.¹⁰³ Borrowing this notion of talking about effect strikes me as a good way to talk about the function of wonder, and indeed, other emotional experiences of a simpler character.

To consider what sort of means/end relationship there is between an emotion and 'another item' along with a degree of 'abstractness' (to use Price's terms), the case of fear is once again helpful as an example. Its effect is on several organs or 'items' including the heart - making it beat faster with a greater stroke volume to raise blood

⁹⁹ Dawkins R., *The Blind Watchmaker*, (London: Penquin, 2006) p xv.

¹⁰⁰ Nozick R., *The Nature of Rationality* (Princeton: Princeton University Press, 1993) p119.

¹⁰¹ Millikan R., 'In Defense of Proper Functions' in *The Philosophy of Science* 56 (1989), p288.

¹⁰² Price C., 'Determinate Functions', *Nous* Vol. 32, No.1 (Mar., 1998) p59.

¹⁰³ *Ibid*, p64.

pressure and prepare to cope with the greater demands required for fight or flight. It also involves a characteristic feeling and intentional thought. If fear has a function then it might reasonably be called 'escape'. In the same way it can be seen that the principal function of wonder is its effect on consciousness, which might be called 'a fresh awareness'.

Introducing 'Intellectual Wonder'

From a sociological point of view one can define functions generally 'in terms of the furtherance of a set of values that we hold - life, survival, reproduction, health'.¹⁰⁴ Anything that contributes to furthering these values is then viewed in a favourable light. In such cases a valued function is being imposed on something (which may be as nebulous as an experiential event rather than a physical object) in order to improve a situation as far as the people involved are concerned. As an aside, it is interesting that for something to be thought functional, whatever it is must generally be of benefit to human-kind. It is, for instance, not usually believed that colds have the *function* of spreading viruses, though causally that is what they do. Functions are generally valued but that valuation is in the eye of the beholder and would not exist if there was nobody consciously aware enough to recognise it. I term it an 'intellectual wonder' to suddenly recognise instances of such value.

It is important for my argument (that the purpose of intellectual wonder is to produce a 'fresh awareness' about value) that the term is extended to the sudden recognition of a threat to deeply held values as well, and possibly the threat aspect coupled with a type of dread is the feature most easily recognised in intellectual wonder. It will be remembered from chapter one that William of Newborough recognised long ago that a wonderful thing (abstraction or no) was wonderful because it *mattered*. My only slightly ridiculous example of intellectual wonder about something that matters is the feeling which would be engendered by reading in a serious morning paper that a Witchfinder-general has been appointed by H.M. Government. Realisation of what might be the social function of such an individual would surely transgress beliefs about the place of rationality in our society and reasonably warrant expressions of dread.

Making Wonder Matter

Once all the causes making up a wondrous physical event have been accounted for and absorbed into the Background and the Network of Intentionality then there is nothing

¹⁰⁴ Searle J., *The Construction of Social Reality*, p16.

conceptually new to 'bring the mind to a stand' (as Spinoza termed it). As suggested at the end of chapter one, people in a post-explanatory state of knowledge about what was once generally experienced as a wonder would only have a momentary interest and then, realising that whatever it was had a rational explanation, would turn away and get on with life. They would have registered the sensory input but perceived no fracturing of their conceptual framework and hence experienced no feeling of wonder. This seems to be the concern behind Wittgenstein's original stricture that Science sends people to sleep. Clearly, for a society as a whole, demoting the experience of wonder about natural phenomena to that of mild interest would not happen overnight and many individuals would retain a sufficient sense of novelty and surprise to make some events still seem wonderful. Nevertheless the process may seem inevitable given the broadening of general levels of education. Or at least it would be if knowledge about natural events has reached its peak and little more remains to be discovered. Remembering the shock occasioned by the behaviour of Rutherford's alpha particles reminds us that scientific explanations are only as good as the last successful prediction.

Directing our attention mainly to efficient causes and rational instrumentality is surely what Aristotle had in mind when he praised *thaumazein* as a stimulus for scientific investigation, but he also explicitly promoted the existence of teleology as a reason for how things are. Wondering about meaning in terms of purpose is a further interesting abstraction, the existence of which can be a surprise to the soul. Wittgenstein contemplates the position of a believer in God looking around at the world and asking:

'Where does all that come from?,
what he hankers after is *not* a (causal) explanation; and the point of his question is that it is the expression of his hankering. He is expressing, then, a stance towards all explanations.'¹⁰⁵

Wittgenstein's negative stance towards explanations in terms of efficient causes is something of a surprise given his early engineering background:

'Our civilisation is characterised by the word progress. Typically it constructs. Its activity is to construct a more and more complicated structure. And even clarity is only a means to this end and not an end in itself.'¹⁰⁶

¹⁰⁵ Wittgenstein L., *Culture and Value*, p97e.

¹⁰⁶ Wittgenstein L., *Culture and Value*, *ibid*, 9e.

That quote goes on to emphasise his interest in being able to see the foundations rather than the building. In a remark dated 7/10/1916 which is at the end of a series trying to find something he could justify as ethically good, he writes 'the good life is the world seen *sub specie aeternitatis*.'¹⁰⁷ And writing on the same theme years later, on 22/8/1930:

'there is a way of capturing the world *sub specie aeterni* other than through the work of the artist. Thought has such a way - it is as though it flies above the world and leaves it as it is - observing it from above, in flight.'¹⁰⁸

The Function of 'Intellectual Wonder'

Such observation, which I interpret (in conjunction with 'art discloses the miracles of nature to us'¹⁰⁹) as meaning that what matters is thinking as though for the first time (and not shrouding it in philosophical fog) about the *contexts* of events in the world, even an event as simple as a flower opening. This would create the sense of wonder for 'every common sight to be apparelled in celestial light with the glory and the freshness of a dream', as Drury commented while borrowing from Wordsworth.¹¹⁰ Applying my idea of the function of wonder as being to create a fresh awareness about meaning and purpose, I think that this links intentional action taken in the context of intellectual wonder as having ethical significance.

I am here suggesting that a test for whether a line of reasoning needs closer examination is when it induces the sort of intellectual wonder associated with a novel concept or belief because the Network of usual understandings has been challenged or broken. That might mean addressing what is perceived as a harmful governmental decision taken on ideological grounds. For instance, my intellectual wonder at the appointment of a witchfinder-general, in the context of realising what the job description entails, and what must be the belief system of the people in government making such a judicial appointment, is based on the reasons I hold for a disbelief in the existence of witches. There is therefore an ethical point to being open to intellectual wonder and able to reason about what the feeling - the important feeling of radical astonishment, awe, or dread - means in its particular context. The whole experience of registering a social situation as something intellectually incredible, feeling the disbelief that it is happening, searching for something reasonable to say about it, and deciding what ought to be done

¹⁰⁷ John P., 'Wittgenstein's Wonderful Life', *ibid*, p503.

¹⁰⁸ *Ibid*, p504.

¹⁰⁹ Wittgenstein L., *Culture and Value*, p64e.

¹¹⁰ Drury M., *Ibid*, p113.

about it, is the metaphorical equivalent of the wonder engendered by prehistoric lightning strikes hitting our previously mentioned stone age community.

Wonder at Functionalism

There is a tension in sociological theory between those who explain change in society by reference to the actions due to the beliefs and desires of individuals, and those who believe in functionalism as a kind of natural law bringing about inevitable changes. Jon Elster characterises the latter as originating in 'Christian theodicies' which he exemplifies in Leibniz's suggestion that 'each apparent evil has good consequences in the larger view, and is to be explained by those consequences.'¹¹¹ This was of course satirised by Voltaire as 'all is for the best in the best of all possible worlds.' Elster says that functionalism postulates 'a purpose without a purposive actor' (grammatically speaking, 'a predicate without a subject'). He helpfully distinguishes this 'objective teleology' from 'subjective teleology' (intentional acts by an individual or group) and both these from 'teleonomy' (behaviour fashioned by natural selection).¹¹² It should be noted that Elster's discussion of teleology refers to the function of social groups and institutions rather than the development of individual characteristics.

At stake is the rationality of belief in the different ways that societies might develop. Being awake to intellectual wonder allows some check on runaway social theorising. For instance, some believe that it is reasonable to rely on social teleonomy - that all existing societal practices have arisen because, in competition with other ways of doing things, only these ways could ensure that society prospered, and other courses led to extinction. Therefore what we have, and the way we have done things, is what must be. Or can particular developments be left to the 'invisible hand' of the market? That is characterised by Elster as 'the main functional paradigm' in which behaviour patterns benefit some dominant political structure which is not intended by the actors and not recognised by those benefiting.¹¹³ Is it rational to think that these 'latent functions' of the functional paradigm constitute an explanation of why the behaviour patterns (or institutions which promote them) came to exist in the first place and therefore should be destroyed once they are recognised as instruments of oppression? Or how can most aspects of what seems to be a societal juggernaut be explained by the purposive action of a few individuals? Contemplating any one of these options is a largely academic

¹¹¹ Elster J., 'Marxism, Functionalism and Game Theory' *Theory and Society* 11, 1982 reprinted in *Debates in Contemporary Political Philosophy*, eds. Derek Matravers and Jon Pike (London: Routledge, 2003) pp22-40.

¹¹² *Ibid*, p24.

¹¹³ *Ibid*, p23.

pursuit. Only when experiencing the consequences of people implicitly believing in the truth of any one of them can the relevance of the ability to intellectually wonder be fully appreciated.

Wondering about, or hankering for, a reasonable stance on these societal questions merits a closer look at the nature of our social reality. Such 'thought in flight' does not have the purpose of leaving everything as it is but is undertaken with the hope of a clear view as to whether the foundations need re-purposing. In the same way that I have argued that perceptions of something strange occurring in the physical world fuels Aristotelian *thaumazein*, intellectual wonder at something strange happening in society causes a panoply of intentional thoughts, feelings, and possibly action to challenge received wisdom. To the extent that there is a difference in contemplating the workings of society rather than those of the universe, the main considerations are not concepts about causes and effects but linguistic meanings in terms of values and purposes.

Chapter Five - Wonder at Organised Society

An ethical project

The earliest detailed prospectus for an organised society was Plato's *Republic* set out as dialogues between Socrates and Plato's two brothers. The well known image of the Cave is, according to Paul Rahe, the city itself and is conjured up to articulate the limits of politics:

'The chains that bind its inhabitants are the more or less arbitrary customs and laws of the community; and the puppet-handlers are the poets, the sophists, and the demagogues who fashion its governing illusions. Most of what the citizens take to be true is inference from the shadows cast by these artifacts on the wall of the cave.'¹¹⁴

Finding that almost all customs and laws were illusory tricks put in place by self-interested others produced 'the shock of liberation' when a philosopher-to-be escaped into the light. Such shock would be, I claim, an extreme case of intellectual wonder - in the negative sense of wonder expressed by Richard Lazarus. When contemplation of that situation and what it means induces a mixture of awe and fright it must form the worst case that one can imagine of 'waking up' to wonder at social reality. It is on a par with Aristotle's point about mathematicians feeling that the very structure of existence would have changed if their beliefs about triangles were not true. Rahe appeals for a proper understanding of the distinction between custom and law (*nomos*) and nature (*phusis*) so that 'philosophy can be summoned back down from the heavens, settled in the cities and homes of men, and forced to make inquiry into life and morals and things evil and good.'¹¹⁵

My claim is that the only way that men can be 'forced to make enquiry' is to grab their attention with a state of intellectual wonder at something transgressing previously accepted norms. The movements in the heavens were an obvious cause for astonishment but more subtle marvelling at tales or documentaries or social media posts of 'things evil and good' is intellectual wonder in the tradition of Robert of Bascvorn telling monstrous stories with moral purpose in the 14th century. In turning from the stars to the cities and homes it is necessary to elucidate how *nomos* became a candidate for keeping *phusis* in check in the first place.

¹¹⁴ Rahe P., 'Introduction to Social and Political Philosophy', *The Philosopher's Handbook*, ed. Stanley Rosen (New York: Random House, 2003) pp12-13.

¹¹⁵ Ibid, p25.

Assigning Function

My explanation for how social facts and institutions are created by particular applications of symbols applied to real objects (or 'brute facts') in particular contexts of abstract meaning broadly follows that of John Searle, but in shortened form with examples of my own. This digression is required to establish my view of the foundations upon which intellectual wonder can operate.

On deciding that something has value one is making a subjective judgement that whatever it is or does, such as having an aesthetic effect which triggers thoughts about the universe, then that something is a desirable object to have or to maintain. If in the context of looking for general meaning in the world I spot a flower with its petals opening and experience a sudden awareness of awe and destiny, then the function that I am willing to assign to flower petals is that of inspiring astonishment at the wonders of Nature. As a single individual I may try to persuade others that petals opening out have that function but unless they can share my experience they might reasonably fail to understand my meaning.

In the 'Just So' story at the end of chapter two it was speculated that the notion of the storm-giant might play both good and bad roles in the discourse of our early humans depending on what result the thunder and lightning and heavy rain might have. In a time of drought, people may have assigned to the notion of the good storm-giant (object X) the function (Y) of relieving an existential threat. The loss of a few cattle due to lightning strikes might tinge such a symbol of good with a little dread and any rituals intended to induce the storm could not then be conducted lightly. Here, X counts as Y only in the context ('C') of drought. In the context of a fruitful summer the function Y is not required and if drought becomes a forgotten rarity the symbol for 'good storm-giant' fades from ordinary language. Storms still happen but the thoughts about them (X) become more associated with the function of 'cattle-killing' (Y) in the C of an otherwise plentiful season. Thinking about the same X can then conjure up two different functional meanings (two different Ys), emphasising that function and meaning are relative terms. It also suggests that groups of individuals, even when in possession of much the same experiences, are likely to have differing accounts about what something means and how valuable it is. There is therefore a question as to how people come to overall agreement about what things mean and whether those things are valuable enough to be taken into account in bringing about reasonably good social arrangements.

Collective Intentionality

Searle has called the capacity for groups of people to share intentional states (such as beliefs and desires) 'Collective Intentionality'.¹¹⁶ Team games are examples of people carrying out their own individual functions as part of a team in order to further the common purpose of winning the game. However, his idea is not just that the collective whole is numerous episodes of singular intentionality but that 'we intend' is just as much a fundamental part of mental life as 'I intend'. This is an interesting assertion upon which a great deal depends. Searle explicitly denies that it means the existence of a collective consciousness or a Hegelian world spirit 'or something equally implausible'.¹¹⁷ 'We intend' is just a primitive biological phenomenon.

I suggest that for a group to experience wonder together is the nearest one can get to empirical evidence for the existence of a genuine collectivity able to think and feel *about* a situation. In chapter three the experience of wonder (for an individual) was described as a conscious unity of perception, intellectual apprehension, emotional feeling, and intentional activity. In a state of wonder, and shortly afterwards, those same mental states can be appreciated by each member of a group, each one also being aware that the others are experiencing the same speechless amazement. Astonishment at a wondrous sporting achievement when a crowd of many thousands can gasp together and then either applaud or despair should be counted as a form of collective intentionality - although different opinions about the performance emphasises the continued existence of the individual within the group and different cognitive contributions. Spontaneous group action is a well documented historical phenomenon with events such as the Storming of the Bastille, the Rebecca Riots (with more than one group of 'Reberras' burning toll-gates in the early 1840s in mid Wales), and the very recent 'Black Lives Matter' demonstrations. All were, arguably, the result of collective intellectual wonder - in Lazarus's negative sense - at perceived unacceptable transgressions of social norms and values.

The crucial point about collective intentionality is that it creates 'social facts' relating to social groups. If we decide to go for a walk together that becomes a social fact, and if we together decide that our walks should become regular outings and call ourselves a club for people of a like mind then that collective intentionality (to be a walking club) becomes an 'institutional fact' with constitutive rules. Perhaps the walking club has a rule of no running because those intending to run together 'should' (as a matter of socially-approved principle) create a running club instead. In walking together

¹¹⁶ Searle J., *The Construction of Social Reality*, pp23-26.

¹¹⁷ *Ibid*, p25.

repeatedly and intentionally (social fact X) we have created an institution (walking club Y) provided we continue to accept the constitutive rules. The institutional fact that there are rules make it possible to create more social facts such as that individuals can walk alone as members of the institution so long as they signify the fact by, say, wearing a coloured hat.

Over time the people in different walking clubs might come to designate a particular colour as 'theirs' and demand that club members adhere to wearing hats of only that description. This would be a constitutive rule elaborated from the 'brute fact' that different coloured hats exist. The stage is then set for the coloured hats to symbolise more than just the walking club. Red hatted walkers might gain a reputation for unruly behaviour and then the function bystanders assign to the red hats is to be a mark that those people wearing them are dangerous. Or alternatively, to the unruly they become a badge of pride as a display of status to others. It might have been the original idea of an individual, but Collective Intentionality (a widespread belief about the type of people wearing red hats and belonging to that walking club) has created the social fact that red-hatted people should be considered troublesome until proven otherwise. Every reported incident involving them maintains the collective belief. Whole social institutions might have to be devoted to addressing the problem posed by 'the reds'. Reds (X) count as a threat to social order (Y) in the context of gathering in a group (C), but for the Reds themselves being a red hat wearer (X) the social fact (Y) is the thrill of belonging and being noticed in that C.

Language and Institutions

The above slightly-too-simple example relies on the existence of language to allow an ontologically objective thing - a hat - to have all sorts of nefarious meanings attached to it when it is worn in certain situations. In order for one person to communicate to another his fears about somebody wearing a red hat there must be a way of symbolising those fears in gestures or sounds. Recalling the Vervet monkeys of chapter two and their alarm calls, their 'all or nothing' set of signs does the immediate job of enhancing chances of survival, but does not enable a way of thinking about the social situation and its functionality. Eagles bearing down on one are brute facts and the only vaguely social context which is possibly apparent to the monkeys is that it is somebody else's lunchtime.

On the other hand if discussion about this brute fact of a problem became possible because the monkeys developed a more extensive range of linguistic abilities, then plans can be made and values attached to lines of intentional activity. Freedom from

marauding eagles can be made a social priority. The proposition before a suitable committee of wise monkeys might read: 'Eagle attacks (X) count as unacceptable constraints on our liberty (Y) to forage unmolested (C).' The X-term is the brute fact, leading to the Y-term which is an intellectual concept about X. The Y term involves quite sophisticated notions about what is 'unacceptable' and what is 'liberty', which probably implies that the monkeys must have been indulging in language games for some considerable time. To have the collective will to do something about the eagle attacks requires a collective fresh awareness that 'the something' is possible, along with rational thoughts about how to go about it. Their old concepts about eagles were that they constituted an extreme danger and the loss of the occasional baby monkey too slow to escape was just how things were. Whether it was a new notion of liberty or emotionally charged memories of mangled baby monkeys which constituted the intellectual wonder that challenged the belief of eagle invincibility, the key point is that to do something about it requires first that a new awareness has taken hold.

The above is intended to demonstrate the qualitative degree of difference in analysis and planning obtaining in human groups compared to that available to fairly close relatives (in evolutionary terms), even when the comparison is with monkeys known to already have the impressive capacity for 36 different forms of vocalisations. Mere vocalisations are not enough. The sounds have to conform to predictable patterns according to constitutive rules so that they carry collectively understood meanings. Many animals have evolved behavioural attributes which allow them to operate as a pack with limited purposes. Searle gives the example of hyenas co-operating to go after an isolated lion.¹¹⁸ The pack action is a social fact but no institutional facts, like a steering committee with a particular function and implied authority, have been created. The latter requires language with which to plan, as well as their existing basic collective intentionality. Nevertheless pack activity demonstrates the biological reality of collective intentionality in which individuals do separate things but with an overall purpose in mind which has survival value. Background understandings common to thousands of generations of animals allow hyenas to hunt lions despite their lack of any ability to discuss the matter.

My claim is that humans have been able to go further in using collective intentionality because of their ability to become aware, often by the sudden realisation involved in intellectual wonder, at the implications of social situations. This in turn depends on their capacity to assign value and status to abstract notions and ways of doing things. Particular cultures develop over time due to them being the sum of collective responses

¹¹⁸ Searle J., *The Construction of Social Reality*, *ibid*, p38.

to commonly encountered problems. Institutions such as hierarchical government, private property, inheritance traditions, and sacred practices grow up by successive generations broadly following the same constitutive rules for how society should be organised to best meet common situations and difficulties. It is because those societal arrangements are not brute facts in themselves that whether they endure depends on whether there is continuing collective agreement that they should. When the collective agreement holds one can speak of a stable civilisation with cultural norms incorporated into the Network of beliefs and values. The question arises then as to why social change happens. My answer is that intellectual wonder, creating awareness about a social wrong, is the touchstone for change - either radical change over a short time, as in a revolution, or gradual movement towards a planned goal.

Wonder and Meaning

If wonder is to influence the progress of civilisations then it must be involved in changing how things are understood about a society. The way social affairs are arranged and what meanings they have for one generation must be altered either subtly or radically (depending on the speed and degree of change) for the next. From the above discussion of collective intentionality and the place of language in forming beliefs and values, it is my suggestion that experiencing intellectual wonder about some aspect of society demands a discourse about what such a phenomenon means in terms of the truth of the situation, and what it is that matters about such meaning.

Wittgenstein has a great deal to say about the different senses of meaning at various points in his *Philosophical Investigations*. Expressive utterances, such as a laugh or a cry are full of meaning in the sense that 'much can be gathered from them.'¹¹⁹ Saying several words with feeling can give the whole collection of words their meaning.

'But does it give individual words their meanings? But here one could say that the feeling gave the words *truth*.'¹²⁰

An expression of feeling also emphasises what it is that the sentence is aiming at: 'then here "meaning" amounts to *that which matters*.'¹²¹

The formal construction of sentences - the way they have to be - puts constraints on the truth conditions of what is said. Competent speakers of a language understand this. If

¹¹⁹ Wittgenstein L., *Philosophical Investigations*, *ibid*, para 543.

¹²⁰ *Ibid*, para 544.

¹²¹ *Ibid*, para 545.

one description of a situation is a true representation of affairs and another is false then it can be said that the two sentences differ in meaning. It is not quite so simple if the first representation is of an existential threat and the second downplays the feeling about this to a minor irritant; then the difference in the description is one of degree but the difference in meaning is one of life or death - a wholly different level of importance in the sense of what matters. The articulation of the feeling accompanying intellectual wonder should not allow such ambivalence. The point of being in a state of wonder, awe, or dread is that no downplaying can be countenanced. Oppositional views may try to do this but for those experiencing intellectual wonder it just is a shocking situation that demands action.

A collective agreement made by a number of individuals about what action to take in a particular situation suggests that there is some common purpose in view, aiming to achieve something that matters. That, I think, implies that the meaning of what is proposed should be generally understood - that the feeling behind the proposal as well as the words has been *communicated*. Although it is conceivable that it will turn out that some listeners made a mistake about their understanding of the wording of the proposal, it seems less likely that they would misconceive the emotion being expressed.

More on Meaning

An early writer on meaning, Victoria Welby, corresponded on the matter with Bertrand Russell and criticised his search for a logically ideal language by saying that it lacked 'awareness' (here meaning context) in ordinary language use. For instance, she criticised his often used example for logical analysis of 'The King of France is bald' as being obviously nonsensical without any deeper interpretation because everybody knows there is no king of France. She divided up meaning as being the immediate reaction of the interpreter, the intention of the person saying something, and the effect that the words have in the world.¹²² Interpretation was at the heart of meaning for another critic of Russell, Ferdinand Schiller. For Schiller, meaning is:

'essentially an *activity* or *attitude* taken up towards objects by a subject or energetically projected into them like an alpha particle, until they, too, grow active and begin to radiate with "meaning".'¹²³

¹²² McElvenny J., 'Ogden and Richards's *The Meaning of Meaning* and early analytic philosophy' in *Language Sciences* Vol 41, Part B, January 2014, p217.

¹²³ Ibid, p218.

I think that this quote succinctly links the idea of conscious awareness of intentionality with the notion of meaning.

Welby's tripartite structure of meaning does have the implication that whatever the initial interpretation of the listener and the intention of the speaker there is some later overarching effect of meaning for a group. This raises the question of where does true meaning reside - in the minds of individuals, or as some sort of higher state of consciousness only accessible to groups as a whole and in the light of a degree of historical analysis? Only after a lapse of time for this activity can there be apparent meaning in the sense of a collective judgement (radiated meaning, perhaps) as to how much the original conclusion mattered. It seems to me that this latter construction of 'meaning' amounts to a cultural framing of the situation, or the establishment of a habitual way of looking at that particular thing.

In my chapter one the subtle changes in the use of different words in the lexicon of wonder were reviewed. I would claim that although they all have the same general aim, like the use of miracle and marvel to be almost interchangeable, there are subtleties of meaning dependent on the context in which the words are used, which itself depends on intentional aspects of thought. Gerald of Wales talked about salmon leaping, representing their leaping as a marvel (something astonishing) and saying explicitly that he meant that it could be understood from their nature which excluded it from being miraculous - or indeed, it also excluded him from meaning that the leaping was astonishing in the sense of ridiculous. His attitude towards the wonder represented by leaping salmon 'radiated meaning', as Schiller would have it.

Communicating Wonder

Having stressed that intentionality governs meaning it is clear that what comes to be regarded by those experiencing something as intellectually wondrous (either negatively or positively) must be communicated to the rest of society in a way (with the feeling) that fulfils Wittgenstein's concern for the truth.

Searle states that 'The mind imposes Intentionality on the production of sounds, marks, etc., by imposing the conditions of satisfaction of the mental state on the production of the physical phenomena.'¹²⁴ It must be remembered that in this production there is an expressed psychological state - a 'sincerity condition' - so that with the 'meaning intention' there is a 'double level of Intentionality' to be satisfied. For instance, the

¹²⁴ Searle J., *Intentionality*, p164.

intention to state that it is raining can be satisfied just by saying it, but the sincerity condition demands that the meaning intention is only satisfied if it is actually raining. Searle separates the meaning intention into the representation intention and the communication intention because one might want to represent something without any intention of conveying the truth or even of being correctly understood. However, once intending to communicate, in satisfying a communication intention one must represent something as being true or false.¹²⁵ Empirically, Searle finds that there are only five basic categories of illocutionary acts - directives, assertives, commissives, declaratives, and expressives (conveying feelings and attitudes).¹²⁶ His point is that:

‘if the way that language represents the world is an extension and realisation of the way the mind represents the world, then these five (categories of illocutionary acts) must derive from some fundamental features of the mind.’

So there are limitations on the forms that meaning, as meaningful intentions, can take. The concept of ‘direction of fit’ is important in assessing whether or not conditions of satisfaction have been fulfilled. ‘Mind to world’ directions of fit imply that beliefs are satisfied if the world really is as perceived and not a hallucination, whereas an intention to do something has a world to mind fit and is only satisfied - only becomes correctly meaningful - if the world changes according to the intention. For instance, assertives about the world - representations of what is happening such as ‘it is raining’ - have a ‘mind to world’ direction of fit and can be checked by looking outside. Directives to do something have a ‘world to word’ fit which functions causally (derived from the intentionality) in changing something in the world according to the directive when the intention is satisfied.

Expressives have no direction of fit. Expressions of wonder - the ‘Wow’ and the open-mouthed stare - is an Intentional state representing something astonishing but there is no condition of satisfaction apart from the making of the expression itself. Polite ‘wows’ at somebody’s new kitchen do have a communicative intention but are really assertives, I think. Declaratives have a two-way direction of fit because they create social and institutional facts (world to word) by the act of uttering a representation of how something will be (mind to world). ‘The meeting is adjourned’ is an example of such a declaration (satisfying the intention to represent the end of the gathering), and that it has become so can be checked by seeing the empty room a few minutes later, satisfying the original intention to alter the social fact that a meeting is taking place.

¹²⁵ Ibid, pp165-166.

¹²⁶ Searle J., *Expression and Meaning: Studies in the Theory of Speech Acts* (Cambridge, Cambridge University Press, 1979) pp1-29.

I envisage that communicating intellectual wonder as a social phenomenon begins with the usual expressions - perhaps after a reading of the morning paper or twitter-posts - taking the form of individuals experiencing eye-widening, jaw-dropping moments before making comments to each other, followed by collective assertions made with emotional force (whether that is shock, fear, anger, dread or despair) that this situation cannot be allowed to stand if it is not to violate belief in a particular cultural value. Checking that the wondrous information does indeed upset a cherished understanding satisfies the intention to represent the situation correctly, and then there may be directives about what to do next (forming a committee is usually a good start) followed by declarations of intent to change the whole of society and a movement to begin taking the agreed relevant actions - though the satisfaction of some stated intents may take a generation or two.

Rules of Nature versus Custom and Law

The previous sections concerning language, meaning and intentionality have been put forward as the foundations of social institutions which 'thought in flight' has uncovered. It might now be possible to question the purpose(s) of the institutional edifices which have been built upon them. In 1931 Wittgenstein commented on one of his recently deceased colleagues at Cambridge who had been interested in improving the organisation of society:

'Ramsey was a bourgeois thinker. I.e. he thought with the aim of clearing up the affairs of some particular community. He did not reflect on the essence of the state.....but on how *this* state might reasonably be organised.....He wanted to get down as quickly as possible to reflecting on the foundations - of *this* state.'¹²⁷

Frank Ramsey died at the age of 26 but in his short life managed original contributions to philosophy, economics, and mathematics. In his *A Mathematical Theory of Saving*, rational choice theory and applied utilitarianism was promoted to achieve 'enjoyment' (the modern word would be 'wellbeing') over the longer term at a time (1928) when everyone was trying to raise employment levels in the short term. His impartiality about people's needs and sensitivities has been called, somewhat critically (being taken as an example of paternalism), 'Government House Utilitarianism.' Partha Dasgupta suggests that 'a generous reading of his paper' points to taking account of the factors 'be they

¹²⁷ Wittgenstein L., *Culture and Value* p24e.

material or otherwise that make for flourishing lives.¹²⁸ It seems to me that Ramsay was trying to work with rules of nature (mathematics in the service of economics) to create conditions with social purpose.

Material production follows the dictates of physical causality - *phusis*, as Paul Rahe put it at the beginning of this chapter. I have tried to show how intellectual wonder harnessed to collective intentionality gives rise to *nomos*, or social institutions and practices, which can march to a different drum. An apocryphal saying credited to Albert Einstein is that what can be measured doesn't matter, and what matters can't be measured. This statement can only be held as true by those who share the intentionality of the speaker - that valuing the time and resources given by society for personal interests and welfare, or for the performance of rituals, or for enhancement of life experiences in general, is of paramount importance over ways of driving up productivity. In short, that a particular sort of collective intentionality (looking favourably on creating social good rather than productivity gains) produces a different sort of civilisation from one in which it is taken for granted that the overriding feature of importance in one's life is whether next month's production of tractors exceeds the quota required by the central planning department. And being awake to the intellectual wonder that alerts us to the threat of such a one-dimensional approach is of paramount importance in determining what counts as desirable values and purposes in a civilised society.

¹²⁸ Dasgupta, Partha, "Ramsey and Intergenerational Welfare Economics", *The Stanford Encyclopedia of Philosophy* (Summer 2019 Edition), Edward N. Zalta (ed.), URL = <<https://plato.stanford.edu/archives/sum2019/entries/ramsey-economics/>>.

CONCLUSION

In trying to say what wonder is, and what exactly needs to be kept secure, this dissertation has attempted to steer a course between the rocky facts of 'affective science' and the shifting sands of intuitive insights. A central focus has been placed on giving an explanation of how a marvellous or even miraculous event is recognised in the mind as such, accompanied by a specific feeling or emotion, which can drive intentional action. Much has been made of the way the concept has changed over the centuries to include different understandings about what matters both in Nature and in the organisation of human society. Nevertheless ancient and mediaeval commentaries on the experience of wonder have remained understandable to modern ears. There is sufficient recognition of the emotion described as a 'sudden surprise of the soul' (Descartes), 'wherein the mind comes to a stand' (Spinoza), and which 'has the power to stop viewers in their tracks' (Greenblatt) to warrant the assertion that the phenomenon of wonder is a common human response to events which are dramatic and beyond immediate understanding.

Wittgenstein's sense of dismay at science sending wonder to sleep was suggested in chapter one as being born out of his pessimism at the direction civilisation was taking with Industrialisation along with the then rise of National Socialism in Germany. By the mid twentieth century many voices were complaining about a lack of interest in qualitative matters due to, as Howard Parsons said, 'cultural conditioning' which flattened the experience of wonder and changed what we respond to as wonderful. A general improvement in scientific understanding must reduce, one would reasonably presume, the conceptual strangeness of natural phenomena. However that is only applicable over the longer term if one is convinced that science discovers complete and final explanations.

Being open to wonder is exactly the human spirit which it is essential to keep awake if astonishing experimental results are to be recognised as important rather than being dismissed as inconsistent or wrong. Rutherford's alpha particle experiment makes this point. As noted in my introduction, Drury suggested that marvellous scientific advances take place every generation but are often the subject of hyperbole, and over-enthusiasm needs to be kept in check. Nevertheless there seems little reason to deny that wonder is a necessary stimulus for investigating Nature. Keeping this sort of wonder secure by having a conscious awareness that at any time experimental results may challenge orthodox explanations is certainly a position to be defended for the sake of science itself.

Verging on the pseudo-scientific, but full of wonder at the phenomenon, my narrative tale in chapter two was about the place of wonder in the evolution of language. As communication between two or more conscious individuals can take the form of brief noises and gestures alone, the fact that language exists is taken as signifying that it confers a survival advantage. That assumption conforms to a Darwinian orthodoxy, for which an alternative would involve an explanation closer to the miraculous. The existence of language is also a possible explanation of why wonder is unique to humans because the two phenomena - of language and wonder - feed off each other. Ever more sophisticated ways of discussing strange events and their consequences are found necessary to satisfy a general desire for humans to talk about interesting things. Highlighting feelings about things is a sure way of drawing attention to those objects, so wonder, dread, and awe, I suggest, are the emotions felt to be those that it is most urgent and interesting to communicate.

Other philosophers have also connected consciousness, intentionality and wonder as intrinsic features of humanity, which reinforces my intuition that wonder has an important purpose beyond that of arousing scientific curiosity. Searle's five categories of illocutionary acts describe the way that the mind represents reality and limits how meaning can be applied to discussions of events, and therefore what sort of intentional communication is possible. One suggestion of wonder being 'the exercise of intentionality for its own sake'¹²⁹ is a little extreme but I have implied that wonder does indeed lead to an expansion of intentional capacities and enhanced cognitive awareness. Mental mechanisms constituting what John Searle characterised as the Background and the Network were highlighted in chapter three as providing a description of the processes making wonder recognisable - in that the conceptual boundaries about the nature of the physical world previously set by the Background and the Network are suddenly crossed. In chapters four and five I put forward the argument that recognition of contraventions of beliefs and expectations regarding the social world produces 'intellectual wonder' giving rise to the same sort of amazement at occurrences in the social world, especially about failures of societal institutions.

The difficulties of talking about function and purpose without becoming involved in discussions about teleology, and whether it exists, were addressed in chapter five, leading to the realisation that 'wondering' (thinking and feeling about wonders) is a way of rehearsing ideas as to what matters in life. Wonder then has an ethical purpose. Ethics has traditionally been seen as the province of theological writers. Religious awe

¹²⁹ Hepburn R., 'Inaugural Address', *Proceedings of the Aristotelian Society, Supplementary Volumes* 54 (1980) p16.

in the presence of sacred objects or perceived miracles was originally, as outlined in chapter one, little different from wonder but an interesting finding has been that the meaning of awe seems to have been downgraded. From a state of virtual catatonia (advocated as the correct approach to a miracle by Bernard of Clairvaux) in mediaeval times, modern observers see something 'awesome' as merely an out-of-the-ordinary performance or a tremendous environmental vista. Richard Lazarus helpfully distinguished positive and negative wonder in terms of cognitions about the event forming emotional intuitions about the consequences. It will be remembered from the introduction that Hume considered that astonishment and awe were made up of different degrees of fear. My conclusion about this is that fear, in itself, breaches no conceptual boundaries and, as Descartes said, is created within the mind after, and separately from, the wondrous (or awesome) feeling. I think that Lazarus is right in that the cognitive recognition of the broken concept is accompanied by a feeling about the situation - a feeling which comes tinged with foreboding or with optimism. Fear may then be an added emotion arising from reflection about the situation - even optimists delighting in possibilities can experience apprehension as well - and personality factors (a matter for psychological investigation) may be responsible for individual differences.

If religious awe was once of predominant importance in recognising something sacred I maintain that this has been replaced by 'intellectual wonder' as a more rational way of recognising what matters to individuals in society. Sudden awareness of a violation of an important social boundary, especially when perpetrated by the very institutions set up to facilitate dealing with the difficulties of social life, amounts to the shock experienced on emerging from Plato's Cave and realising the extent to which previous beliefs were illusions. Keeping the people awake to the danger posed by arbitrary customs and laws becoming 'chains that bind' is my ultimate justification for urging that intellectual wonder is kept secure.

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