**Varieties of Philosophical Humanism and Conceptions of Science**

Forthcoming in a volume on science and humanism edited by Anjan Chakravarrty for Chicago University Press.

1. **Introduction**

There are many varieties of humanism. Some are strongly allied to the sciences, others are antipathetic to them, while others offer subtler positions. A survey of the philosophical scene, historical and contemporary, reveals many varieties of humanism with distinct conceptions of the nature of science and its significance to human life. As one commentator puts it, a complex concept, like ‘humanism’, can be ‘stretched like a pair of socks to fit any sized feet’ (Kurtz 2001: 144). Fortunately, there are limits to which doctrines could be reasonably counted as humanist: these constraints are supplied by the humanism characteristic of that vibrant intellectual and cultural period during 14th to 17th century European history called the Renaissance. It established the themes or sensibilities that shaped the subsequent history of philosophical humanisms.

 By emphasising the variety of humanisms, I am opposing two claims commonly made on behalf of humanism. The first concerns science and humanism, specifically that ‘an alliance between the two has been a central strand in the humanist tradition’ (Norman 2004: 31). Certainly, this is true of certain tendencies in that tradition, most obviously in the dominant, entrenched form today – *naturalistic secular humanism*: the world, described by the sciences, does not contain ‘supernatural’, non-natural entities, realms, or processes, which undermines the truth-claims of the religious institutions and traditions that once provided people with moral guidance and a sense of meaning. Fortunately, science, reason, and secularism are more than capable of furnishing us with the values and guidance we need to collectively flourish. That is a sketch of a certain *kind* of humanism, which goes by different names. The philosopher, Charles Taylor, who calls it ‘Enlightenment humanism’, traces it to the European Enlightenment whose legacy now ‘survives in naturalism’ (Taylor 1989: 384). If we take a broader and more pluralist view, we find varieties of humanism with distinct attitudes toward science, some dithyrambic, some ambivalent, and others sternly critical.

 I am also opposing the claim that humanism must be seen as a good thing, that to be a humanist is something we must approve or applaud. One will think that if one sees it as the stance set against dogmatism, irrationalism, and other moral and epistemic sins – the stance promoted by, for instance, the British Humanist Association, for whom humanism is a commitment to ‘logic, reason, and evidence’ and treating folk with ‘warmth, understanding, and respect’. Of course, until those epistemological and moral commitments are cashed out, they cannot be unambiguously credited to humanism; and the possible existence of other varieties of humanism does not preclude the possibility that other forms of them might be central to religious and philosophical traditions, too. Still, many insist that humanism is a good thing. ‘Everyone likes to be a humanist’, remarked a distinguished scholar of the Renaissance, ‘or to appear as one’ (Kristeller 1990: 3). But much depends on the definition of humanism, which in certain quarters is no term of praise: a French critic could once condemn National Socialism by saying ‘Nazism is a humanism’ (Lacoue-Labarthe 1990: 95). Many other critics of modernism – many environmentalists, for instance – agree with the sentiment expressed in the curt title of David Ehrenfeld’s book *The Arrogance of Humanism* (Ehrenfeld 1981). So, in fact, not everyone does want to be or be seen as a humanist and not everyone regards it as an unambiguously positive doctrine. Indeed, there are many varieties of anti-humanism, invoking many concerns – moral and existential, epistemological and metaphysical (see Cooper 2002: chs. 9 -10).

 If one set of complexities comes from the variegated nature of humanism, another set comes from science itself. Almost a century of historically and sociologically informed studies have emphasised that science is better understood as disunified and pluralistic: what we tend to refer to with the singular term ‘science’ is actually a complex and changing assemblage of theories, methods, practices, and projects of enquiry with various accompanying metaphysical commitments (Galison and Stump 1996; Kellert, Longino, and Waters 2006). Fortunately, what humanism is usually trading in are not accounts of specific sciences, but certain *conceptions of science*: more schematic accounts of scientific knowledge, practices, and ambitions and how they are related to the wider structures and concerns of human life. Some examples are the Scientific World-Conception developed by the Vienna Circle (see chapters 5 and 6, this volume), the natural theological tradition that saw scientific enquiry as furthering appreciation of God, or the critical-rationalist vision of science developed by Karl Popper.

The concern of this chapter is with varieties of philosophical humanism and their own conceptions of the nature and significance of science. I describe three main varieties that are evident in 20th century European philosophy – humanism as essentialism, humanism as rational subjectivity, and existential humanism, an ordering inspired by the work of David E. Cooper (Cooper 1999, 2002). I deliberately omit the dominant contemporary variety that one might call naturalistic humanism which figures in many discussions of modern humanism. Our understanding of the origins and essential needs of human beings and our conceptions of the good or flourishing life should be informed by the sciences, and consistent with a naturalistic metaphysics. The metaphysical stipulation does a lot of work for humanists of this sort. It will rule out conceptions of the human condition and the human good rooted in other alternative metaphysical picture, most obviously supernaturalistic and theological ones. Such naturalistic humanism was carefully articulated by Herbert Feigl, writing in 1949, for whom ‘remnants of and regressions to … prescientific thought patterns’ can be weeded out, meaning we inherit a ‘mature humanism’ where human nature and history are ‘progressively understood in the light of advancing science’ (Feigl 1949: 148).

My aim is to show that there are philosophical alternatives to that variety of humanism; anyway, I have no aspirations to be comprehensive, nor to argue for or against any specific variety of humanism. I want to chart some of the varieties of philosophical humanism and describe the different stories they tell about the relationship of humanism to science.

1. **Renaissance humanism**

Though contemporary humanists sometimes trace their ancestry back to the ancient period, philosophical humanism in the West first took substantive form in the Renaissance. True, the thought of the *umanisti* was not ‘the sum total of Renaissance thought and learning, but only a well-defined sector of it’ (Kristeller 1990: 114). However, it was sufficiently influential that it radiated outwards, geographically and historically, through to contemporary varieties of humanism. I therefore agree with Cooper’s judgment that contemporary humanisms must be ‘intelligibly descended from a tradition of humanist thought in the West’ which began with the Renaissance, the later varieties being ‘plausibly construable as developments, perhaps culminations, of earlier humanist tendencies of thought’ (Cooper 1999: 3). Renaissance humanists were intellectually vigorous and had diverse convictions, interests, and concerns, as one should expect for a period whose name means ‘rebirth’.

 Before looking closer at Renaissance humanist philosophy, it is worth considering the fact of its neglect relative to, for instance, the ancient and early modern periods. Doubtlessly, there are several reasons, but consider three that seem especially relevant to understanding the relationship of humanism to science. First, a sense of the Renaissance being populated by a motley crew of ‘sententious moralisers and *littérateurs*, by philologists and compilers [and] wild-eyed magicians’ (Hankins 2007: 339). Certainly, most humanists were interested in study and translation of ancient texts and engaged enthusiastically in moral enquiry and many also pursued interests in magic and astrology (cf. Copenhaver 2007, Kraye 1996). But the superior response to what seems exotic or absurd is not derogation but understanding informed by an appreciation of the contexts and concerns of specific figures.

 A second reason for neglect of the Renaissance is the understanding of it as essentially an artistic movement devoted to literature and the visual and plastic arts, but without serious philosophical interests or aspirations. This is uncompelling – enthusiasm for aesthetic pursuits often reflects and shapes philosophical developments, like the new Renaissance moral ideals of creative self-expression (cf. Mann 1996: 1ff). Such creativity could be exercised through an imaginative appropriation of ancient art and architecture or the production of artworks or an enrichment of cultures of aesthetic appreciation (Hope and McGrath 1996: 161ff). A final and related reason are remarks that Renaissance humanism was ‘neither a philosophy nor an ideology’, but ‘a cultural movement centred on rhetoric, literature, and history’ (Monfasani 1998: 533). But this too is uncompelling. In addition to the fact of significant philosophising during the period, most obviously concerning reflections on the conduct and aims of a moral life, cultural movements can inspire and in turn be shaped by philosophical developments.

 I highlight these reasons since they are relevant to science. A contemporary humanist who sees the Renaissance as populated by ‘moralisers and *littérateurs*’ concerned with art or magic and who lack philosophical interests is unlikely to see them as precursors of their own outlook. Indeed, some humanists ignore the Renaissance, instead tracing their roots to the more scientifically-toned Enlightenment. It is also notable that some high-profile humanists, like Steven Pinker, often voice crassly philistine attitudes towards aesthetic endeavours: consider his characterisation of pleasure in music as ‘auditory cheesecake’ (Pinker 1999: 534). I will not dwell on this. Instead, there are some deeper features of Renaissance humanist philosophy worthy of our consideration.

 In what follows I describe three main themes prominent in and characteristic of a prominent part of Renaissance humanist philosophy. The themes are rich, and can each be articulated and interrelated in different ways, but for convenience they can be understood as emphasizing human dignity, our independence from the divine, and our frailty. I will survey some of them and argue in later sections that each recurs, albeit in modulated forms, in the contemporary 20th century varieties of humanism described earlier. I also suggest that the frailty theme has a special role in shaping the character of humanist conceptions of science.

The dignity theme was a response to various challenges to the medieval tendency of articulating our status and worth in relation to God. We are made in God’s image, our minds illuminated by His, uniquely capable, among all beings, of achieving salvation and *beatitude*: these are some versions of theological accounts of human dignity. By contrast, the humanists offered alternatives: we are dignified – indeed, *interesting* – in our own right creatively self-expressive creatures, whether in the new social roles of artists, inventors, or men of *virtù*. We participate in civic and political life animated by increasingly impenitent desires for ‘the ancient prizes of fame and glory’ (Hankins 2007: 125).

Perhaps the most famous statement of this theme is Pico della Mirandolla’s *Oration on the Dignity of Man* of 1486, an amazingly syncretic text combining material from all sorts of ancient philosophies and religions, which has an angel declaiming to Adam

[T]he nature of all other beings is constrained…; But you, constrained by no limits, may determine your nature for yourself, according to your own free will […] We have made you neither of heaven nor of earth…so that you may, as the free and extraordinary shaper of yourself, fashion yourself in whatever form you prefer (Mirandolla 2012: §§ 19, 20, 22).

Granted, Pico defines our distinctness and dignity in a divinely-bestowed capacity to ‘fashion’ ourselves, while others, like the philosopher Pietro Pomponazzi, defined them in terms of the uniqueness of our status as ‘the mediator between the material and spiritual worlds’ (Blum 2007: 221). We are not yet at full-blooded assertions of our independence from the divine. Still, such proclamations were to open the way for metaphysical and moral doctrines of human independence that enabled later forms of secular and naturalistic humanism. Four hundred years later, Nietzsche judged human beings – true, authentic ones, anyway – as ‘new, unique, incomparable’ because they ‘create themselves’, forging their own ‘table of values’ (Nietzsche 2001: §335).

 Assertions of human independence from the divine developed slowly and depended, naturally, on cultural and philosophical developments during the later early modern period, albeit accelerating during the Enlightenment. The Renaissance humanists opened the way by making possible new emphasis on distinctively human goals: new kinds of moral and cultural significance could now be attached to lives devoted to artistic self-expression, political accomplishment, rhetorical eloquence, technical endeavours, and civic vocationalism. All this was inherited by modern humanists who explain their goals in terms of, for instance, enhancement of human ‘life, health, happiness, freedom, knowledge, love [and] richness of experience’ (Pinker 2018: 410). Contemporary humanist organisations offer similar statements with the proviso, often left implicit, that the range of those goods is constrained by the stipulations of a scientific naturalist worldview.

 The dignity and independence themes converged in a culture of ‘self-assertion’, which was Hans Blumenberg’s useful term for an ‘existential program’ animated by a self-conscious sense of human beings as emplaced within a historical situation affording new possibilities of life whose realisation depends on human agency (Blumenberg 1983: 205). Self-assertion was encouraged by the intellectual and imaginative revitalisation sparked by the retrieval of Hellenistic moral philosophies and the relaxation of the moral and metaphysical strictures of medieval Christendom. Critics protest that Blumenberg downplays other important historical, political, and social conditions that were also contributed to these changes (cf. Pippin 1998: 275). Still, modern humanists should find in this much with which they sympathise: a new historical sense that our future is uncertain, with undetermined outcomes human beings can influence through judicious exercises of reason, imagination, and will; a new outlook that sees the natural world narrowly in terms of human interests and needs – for energy, fuel, food, and so on – coupled to imperatives to ~~intrusively~~ control or modify the world for the sake of human convenience and preference; and novel interest in exploring and exercising the creatively expressive capacities of the human mind and body (cf. Cooper 2002: 36ff and 43ff).

 It is crude to present these Renaissance humanist developments as the opening stages of a long crusade against the dogmatism of religious institutions. After all, many humanists of the period were devoted to improvement of the study and practice of Christianity, the most obvious being Desiderius Erasmus. We should also be sceptical about historical narratives that draw straight lines connecting science, humanism, and secularism, since they are all too often guilty of historiographical sins like triumphalism – a way of writing history from the position of the ‘victors’ which leads one to distort the actual complexities of the historical process (cf. Numbers 2009). Still, contemporary humanists, seeking to ally humanism and science, could welcome Renaissance humanist emphases on our dignity and independence from the divine. After that, however, they need to reckon with the third theme – human frailty.

1. **From dignity to frailty**

The frailty of human beings can have physical, epistemic, moral, or existential dimensions and my focus is our epistemic frailty – a conviction that our epistemic capacities are weak or infirm and incapable of attaining certain truth or sustaining ambitious epistemic goals. The medieval period had offered many sources of epistemic strength and confidence, such as the conviction that God vouchsafes both the integrity of our rational capacities and their fit with the rational intelligibility of the world, ‘an ordered structure…oriented to man’ (Blumenberg 1983: 139). Theologians debated the epistemological and metaphysical details and disputed the obstacles to our epistemic confidence, like the implications of the Fall of Man. Conversely, for early modern natural philosophers, the deep worry was that human beings are, epistemically as well as spiritually, ‘damaged goods’, corrupted by original sin, and the urgent question was whether or not we have ‘retained a capacity to discern intelligibility in the natural and moral orders’ (Harrison 2007: 44).

 Such inherited structures of epistemic confidence had been called into question in the 15th century thanks to various theological, social, and cultural developments. The sudden availability of ancient Greek scepticism, thanks to rediscovery of texts, the realisation that serious rivals to Aristotelian Christianity existed that had been lost and never reimagined, and a new, disturbing sense of the contingency of our opinions and beliefs thanks to acquaintance with earlier and distant cultures were just some of them. As a great historian of scepticism puts it, little wonder that ‘early modern philosophy developed out of a sceptical crisis’ (Popkin 2003: viii). I think that a humanist sense of our epistemic frailty emerged from this turbulent context of uncertainty and crisis and – more importantly – would shape later humanist conceptions of science up to the 20th century.

 For those sensitive to concerns about epistemic frailty, two related tasks were urgent: undertaking an appraisal of the nature, scope, and strength of our epistemic capacities and, more practically, working out how to act on the results of that appraisal. ‘To the humanist’, explains one Renaissance scholar, ‘truth seemed particular, conditioned, and subject to many limitations’ (Nauert 1995: 20). If you think that, there are many ways to respond. Some catalogued our personal limitations and foibles. Some emphasised the various contingencies shaping our practices and outlooks. Some scrutinised translations and revised historical and philological practice. Others questioned or rejected aspirations to universal, objective, or final knowledge and truth and, instead, saw judgments as reflections of the unique circumstances of culturally and historically situated enquirers. At its most radical, a sense of epistemic frailty took the dramatic form of denying that human beings are able to ‘elaborate a comprehensive picture of reality’, which led to dramatic epistemological conclusions:

Most of the clearest-headed and most influential humanists regarded human intellectual activity as instrumental and showed little interest in metaphysics. The human intellect, they believed, is suited only to making response to specific problems – generally, problems of moral choice – that arise in the ongoing process of living (Nauert 1995: 204)

If articulation of the nature of reality is beyond our reach, a next-best option is working for a perspicuous understanding of the human condition. This requires knowledge of social practices and cultural history and of the artistic and literary works in which people explore and express their sense of themselves and their world. Granted, some humanists, like Pico, still worked to develop ambitious metaphysical pictures, but this still involved ‘an eclectic survey of past philosophies and religions, a picture which no one rational mind could ever have generated’ (Cooper 2002: 48).

 I think the epistemic frailty theme helped to shape the relationship between the later varieties of philosophical humanism. Crudely put, the difference was between those who took either *quietist* or *activist* stances on our epistemic frailty: the quietists acquiesced in our frailty and rejected epistemically ambitious goals; the activists sought to ameliorate our frailties and accentuate our epistemic powers. Equally crudely put, the quietists rejected the epistemically ambitious conceptions of science which were endorsed by the activists (a tension we will see most vividly in the later discussion of existential humanism).

 A quietist accepts our epistemic frailty and accommodates to it by cultivating attitudes and styles of conduct of a more modest and diffident sort. The French sceptic and humanist, Michel de Montaigne, advises us to abandon disputatiousness and febrile pursuit of certainty and instead cultivate diffidence, ‘a fear of making judgments’, and always strive to be ‘teachable, zealous’ (Montaigne 1991: 570, 564). Confronted with a variety of convictions, the wise person is exploratory, enquiring: they delight in the diversity of customs and opinions, restrain the impulses to utter surety, and ‘submits undogmatically to the customs and intuitions of society’ (Hartle 2005: 195). For the French Christian humanist, Blaise Pascal, too, human beings are ‘wretched’, epistemically and spiritually, ‘equally incapable of knowing and of not desiring to know’, albeit able to grasp their wretchedness and thereby attain a form of ‘greatness’ (Pascal §§ 75, 114 Lafuma). Here are two statements of a form of quietism rooted in a humanist sense of epistemic frailty.

 The activist response to epistemic frailty involves attempts to mitigate or overcome it through a combination of self-transformative disciplines and the creation of supporting social systems of enquiry. Consider early modern English natural philosophy, the systematic project of understanding the operations of the natural world by identifying their principles by careful methods of enquiry. Its practitioners shared an acute sense of the ‘epistemic infirmities of the intellect’ and sought purgative or curative ‘disciplines’ and ‘regimens’. Drawing on classical philosophies, the natural philosophers used their therapeutic conception of philosophy to help epistemically corrupted and enfeebled human beings ‘to conduct the mind in the right way toward the double acquisition of truth and of virtuous dispositions’ (Corneanu 2011: 9). The *idola mente* (‘idols of the mind’ described by the English philosopher and early champion of science, Francis Bacon), consist of inherent and acquired epistemic frailties – ‘weaknesses’, ‘deformities’ – which all ‘do violence to the understanding and confuse everything’ (Bacon 2000: §44). Natural philosophy helps us overcome them through the methodological disciplining of individual minds and the centralisation of enquiry — a conception of science with rich classical, Christian, and humanist influences which prompts us to rethink the tenacious myth of Bacon’s anti-humanism (Vickers 2000).

 I distinguished the quietist and activist responses to epistemic frailty for convenience, though obviously they exist in a dialectical relationship that changes with cultural, intellectual, and historical context. It is tempting to see the subsequent history of science as evidence that the activist responses won out, but that is too quick (cf. Grafton 1996: 204ff). Granted, maybe no modern philosophers of science would articulate epistemic frailty in terms of our corrupt, postlapsarian state. Other options are available, though, from transcendental or perspectival constraints on human knowledge or a sense of the historical contingency of what came to be our scientific inheritance (cf. Kidd 2020).

 I will return to epistemic frailty, humanism, and conceptions of science. What matters for now is appreciating that Renaissance humanism introduced new concerns about the scope and strength of our epistemic capacities. At the most extreme, there is the denial that we do or could ever produce a ‘comprehensive picture’ of reality. This precludes the strong epistemic ambitions central to scientific realism – roughly, a conviction that our best theories and models describe, or are well on the way to describing, the world (see Chakravartty 2017). Less extreme options included aspirations to provide more provisional, particular, pragmatic kinds of knowledge and understanding of the world, sufficient for certain modest cognitive and practical purposes. Between these lie a whole range of epistemological and metaphysical positions which is reflected in the varieties of humanism, including the three surveyed in what follows.

1. **Essentialist humanism**

Martin Heidegger proposed that every form of humanism ‘presupposed [a] universal essence of man’ (Heidegger 1993: 226). This sloganizes a variety of humanism which aims to identify ‘the essentially, universally human’ (Davies 2006: 22). Some essentialist humanists articulate conceptions of our essence or nature, while others occupy themselves with the search for it, even if all agree that an account of our essence must be *ennobling*. The ‘anti-humanism’ that Bernard Williams attributed to Lutheranism was explained by reference to its vision of human nature as ‘twisted’, fundamentally corrupted by original sin (Williams 2008: 147).

 When it comes to accounts of our distinctive essence, possibilities abound. A short list includes our capacity for autonomous agency, moral self-consciousness, spiritual relationship with God, or accounts of our being existentially concerned creatures who are ‘condemned to meaning’ (Merleau-Ponty 1962: xix). We necessarily experience our lives and the world under the categories of meaning, significance, purpose, and value. For the Renaissance humanists, humans are essentially creative, self-assertive beings, able, as Juan de Luis Vives put it, to ‘bring forth extraordinary things’ (Vives 1948: 392). Pico denied we had an essence in the sense of something that fixes our position in the cosmic hierarchy, but still accepted our unique creative ability to ‘fashion ourselves’. Such examples show that essentialist humanism can take many forms – scientific, theological, philosophical. Moreover, claims about essence are not constitutive of humanism, and some self-described humanists reject any talk of a human essence. For Jean-Paul Sartre, the ‘fundamental meaning’ of humanism should be that ‘existence precedes essence’ (Sartre 1966: 28). Our ‘essence’ does not fix in advance the kind of person we will become or the kind of life we will lead: our distinctive capacities of reflection and choice enable us to choose our own kind of ‘existence’.

 An interesting critic of essentialist humanism is the French Marxist philosopher, Louis Althusser, who declares the belief in ‘a definite pre-existing essence’ as a ‘philosophical myth of man’ which should be ‘reduced to ashes’ (Althusser 1998: 275). By emphasising an alleged common essence, those ‘myths’ downplay the importance of social and historical structures and obscure the differences between people under different material conditions – neither of these being acceptable to a good Marxist. Ameliorative projects demand diligent attention to the structural and material conditions of human life, not distracting attempts to discern some underlying essence allegedly common to bourgeois capitalists in Los Angeles and oppressed workers in Laos. In other writings, Althusser clarifies his target as ‘liberal-rational’ humanism, a doctrine which exaggerates the power of individuals to use their rational powers to change the conditions and direction of their life: ‘the human subject … is not the “centre” of history’ (Althusser 1977: 201).

 Althusser criticises essentialist humanism because it obstructs or undermines a perspicuous social and structural understanding of human life, and also propagates a stifling conviction that there is an ‘essential or best form’ that life should take (Lewis 2018: § 3.5). An essentialist doctrine can be criticised on the grounds of content, coherence, and consistency with our everyday understanding of human beings. Certainly, some philosophers who talk of our essence advance inconsistent claims (cf. Cooper 2002: 86ff). During the 20th century, most debates about essentialist humanism involved the biological sciences. The sociobiologist E. O. Wilson begins and closes his Pulitzer Prize-winning 1978 book, *On Human Nature* by declaring that ‘human nature can be laid open as an object of fully empirical research’, meaning that at last our ‘self-conception’ can be ‘enormously and truthfully enriched’, as we finally progress towards a ‘scientific humanism’ (Wilson 2004: 2, 206).

 A heated debate ensued among naturalists enamoured by the idea of some definitive statement of human nature and their constructionist, postmodernist, and other rivals who all denied any nature or essence at all. What followed was a truculent clash of extreme doctrines, alleviated by the soberer account of human nature offered by Mary Midgley in her 1978 book, *Beast and Man*. She rejected both overconfident claims about the fixity of our nature and radical claims about our being utterly plastic creatures, emphasising that both scientific study and everyday experience and practice show that we have ‘highly particular, sharply limited needs and possibilities’, which delimit the ‘schemes of life’ into which we can fit and flourish (Midgley 1994: 22-24ff). We should reject polarising caricatures, crass dualisms of ‘nature *vs*. nurture’, and an empirically, conceptually, and methodologically myopic fixation on biology – at which point we can get on with the multidisciplinary project of developing an appropriately complicated account of our dappled natures (cf. McElwain 2019: ch.2).

 A clear theme of these critiques is that accounts of the human essence or nature must be properly pluralistic if they are to capture our complexities. If science is to play a role, then it should not dominate the stage and, if it does, we risk narrowing our understanding of those vital or essential features of human beings. John Dupré – a philosopher who criticises misuses of and misconceptions about the biological sciences – calls our attention to the seemingly inexorable cycle of new research programmes that promise to reveal all about human nature. Some recent culprits include socio-biology, evolutionary psychology, evolutionary biology, and genetics (cf. Dupré 2001, Dupré and Barnes 2008).

Dupré argues that human nature consists of ‘the developmental cycles that currently constitute human life’, which have biological and cultural dimensions requiring both scientific and humanistic illumination (Dupré 2001: 95). Since social practices and cultural history count among the essential determinants of our nature, seeing evolution as ‘the route to deep insight into human nature’ is ‘profoundly mistaken’ (Dupré 2003: 4-7ff). ‘Imperialist scientism’ would narrow our understanding of our complexity and distinctness and assign to the sciences work that ought to be shared across a range of disciplines (cf. Midgley 2002: 215). Similar criticisms are offered by Raymond Tallis – himself a self-described naturalist and humanist – who rejects the specific forms of scientism he dubs ‘Darwinitis’ and ‘neuromania’. A true humanist should demand from the sciences and the humanities ‘an image of humanity that is richer and truer to our distinctive nature than that of an exceptionally gifted chimp’ (Tallis 2011: 10).

I hear clear echoes of the Renaissance dignity and independence themes in these 20th century varieties of essentialist humanism. Dupré, Midgley, and Tallis share a conviction that any satisfying account of what is essential to us requires a ‘radical epistemological pluralism’, encompassing the natural and social sciences and the humanities, tempered by a principled reticence about the prospects for ‘any grand unifying theory of human nature’ (Dupré 2002: S292-293). Our essence is a complicated and evolving product shaped by biological, historical, and cultural factors – an attitude the Renaissance humanists would applaud.

Notice, though, that the biological debates are essentially epistemological – what can science contribute to our knowledge and understanding of human nature? This is interesting, no doubt, but there are two essentialist humanist accounts of science worth considering in this connection.

The first account can be called a *vital conception of science*. It sees the sciences as the primary engines for the realisation or expression of our essence or nature, a means of drawing out our essential capacities. Science realises our nature, rather than just describes it. A good example is Karl Marx’s early writings in the economic and philosophical manuscripts which describe our *Gattungswesen* (‘species-essence’) in very humanist terms: we are essentially creative, embodied creatures for whom using our practical epistemic capacities to transform the world brings material satisfaction and, more important, overcomes our painful sense of estrangement (cf. Cohen 2000: 379). Creative activities shape the world in our image, transforming it from something ‘independent and alien’ into a realm increasingly intelligible by virtue of bearing the marks of human purposes and activity (Marx 2009: 139ff). Science must be liberated from its ‘subordinated’ condition of ‘serving material production’ for the sake of the *bourgeoisie* (Marx 1986: 318). Once that is achieved, it can be recognised as our preeminent vehicle for exercising our epistemically and practically creative powers and realising ‘man’s *real* nature’, our ‘true anthropological nature’ (Marx 1994: 110).

I see the early Marx as offering an account of our ‘species-essence’ as creative beings which is clearly related to Renaissance humanist themes and also includes a rich conception of science as an existentially transformative enterprise. Science should be valued, not simply as a source of biological knowledge, but as a vital enterprise that ‘receives its purpose’ from its ability to further ‘the evolution of all human powers as such’ (quoted in Adams 1991: 267). Few contemporary philosophers of science would endorse this existentially-charged account of science even if some appreciate Marx’s other contributions to more mainstream issues in philosophy of science (see Farr 1991, Kidd 2021). Still, it offers a further essentialist humanist conception of science.

A second kind account of essentialism, humanism, and science has a different character: it denies any substantive, central role for science in the effort to understand or cultivate our nature or essence. Some contemporary moral philosophers argue that what is essentially definitive of us is our *ergon* – a term that is too narrow if translated as ‘function’ – coupled to some conception of *eudaimonia*, an account of what it means for us to flourish as the distinctive kind of beings we are (cf. Roughley 2021: §5). Humans beings have certain set needs and dispositions, reflecting the sorts of creatures we are: insofar as our needs are satisfactorily met and those dispositions are given meaningful expression, we *flourish*. Martha Nussbaum, for one, has argued there are some ‘functions’ of humans ‘so important, so central, that their absence will mean the absence of human being’ (Nussbaum 1995: 94). Such functions are primarily identified through diligently conducted moral reflection illuminated by empathetic humanistic understanding, rather than the natural sciences. Indeed, in later writings, Nussbaum argued that the already-modest role of science is even further reduced by educational developments which downplay the humane aspects of science – imaginative, creative, critical aspects (cf. Nussbaum 2016: 2).

It should be clear, hopefully, that the 19th and 20th centuries included several varieties of essentialist humanist doctrines which provoked lively debates about their epistemological, political, and existential dimensions. I have only sketched out some examples; more could be offered. The point here is simply that there is a variety of essentialist humanisms, each telling a distinct story about the nature and significance of science.

1. **Rational subjectivity**

Humanism can also be understood as a doctrine that identifies our most important and ennobling characteristic as rational subjectivity. To be a human being is to be a subject which means recognising oneself as a rational creature, one able to self-reflectively understand its own existence. For rational subjectivists, our central, defining, and most ennobling feature is our capacity for reason, and ‘the sovereignty of rational consciousness’ is a ‘pillar’ of humanism (Davies 2006: 60). An appreciation of our rationality, for Pinker, marks out an ‘Enlightenment humanism’, one that promotes ‘fairness, autonomy, and rationality’ because the enhancement of our powers of reasoning enhances our moral capacities: the rationally sophisticated person is better able to ‘detach [themselves] from a parochial vantage point’ (Pinker 2011: 639, 656). Other scholars agree rational subjectivity characterises humanism. Charles Taylor maintains that rational subjectivity is central to a ‘modern humanism’ which encourages images of human beings as uniquely ‘capable of…courageous disengagement’ from social context and emotional needs, whose self-conscious understanding of their status as rational agents elicits ‘admiration and awe’ (Taylor 1989: 94). Many champions of humanist doctrines of rational subjectivity adopt, as a motto, Immanuel Kant’s injunction to aspiring enlightened people to ‘use your own understanding’ (Kant 1991: 54).

 A celebration of rationality as the defining feature of human subjectivity is familiar thanks to its prominence within mainstream contemporary humanisms and its enduring place in the recent history of European philosophy. Cooper notes ‘Cartesian and Kantian images of the lone spectator surveying and adjudicating, from a withdrawn and superior vantage point, the totality of beliefs, practices and norms that constitute the milieu of everyday life’ (Cooper 1999: 8). Many today reject these images, but they could only do that because they were once widely entertained.

 Many humanists present doctrines of rational subjectivity as a positive thing, not least for its obvious connections to the sciences, at least if they are understood in certain ways. Since this position is familiar, I will consider here an alternative – more critical – account of humanism as rational subjectivity from the writings of Michel Foucault.

 Actually, humanism is understood in two senses in his writings, the first – which is not my concern – takes *humanism* to refer to ‘modern thought about man, our concern for him’, specifically the idea that human beings are unique: we are both located within the empirical order of the world, like an object, but ones capable of knowledge and subjectivity – what Foucault describes as a ‘strange empirico-transcendental doublet’ (Foucault 1970: 318f). This is something whose full implications were drawn out by Kant, whose doctrines of transcendental idealism are an effort to understand and reconcile the ‘apparent duality of our nature’ (Kant 1991: 207). In what follows, though, I focus on Foucault’s second sense of humanism – as the name of a doctrine characterizing human beings in terms of rational, autonomous subjectivity.

‘The theory of the subject is at the heart of humanism’ (Foucault 1977: 222) and those who reject humanism thereby reject ‘the theory of the knowing subject’ (Foucault 1970: xiv). To be a subject means, among other things, being self-consciously capable of understanding and representing ourselves, one another, and the world. Exercising our epistemic abilities, on this account, enables us to make sense of the world, which, in turn, better places us to guide our lives in rational ways. Illuminated by truth, a rational subjectivity can be autonomous – ‘self-regulating’ – and thereby aspire to freedom. Foucault, of course, urges us to oppose this ‘*metaphysical* illusion of a self-empowering ego’, which he thinks has become entrenched, across ‘modern, occidental culture’ (Ingram 1994: 217). A human being who falls for those enticing and self-aggrandising illusions condemns themselves to try and live within a narrow pattern of development and conduct. Ideals of rationality, after all, get codified in standards of rationality or reasonableness and Foucault sees two problematic consequences. First, the ideal of conformity to the standards of rationality comes at the awful cost of surveillance, anxious self-monitoring, and subjection to increasingly intrusive disciplinary regimes. Reason imposes itself in codified standards which get expressed through institutionalised social practices, the classic examples being the prisons and hospitals described by Foucault.

The establishment of specific images of what a rational subjectivity should be creates a second unfortunate consequence: those who resist conformity are classified as deviants – as wild, irrational, untameable – and thereby oppressed or destroyed. Anyone who does not fit the strictures of rational subjectivity, as defined, becomes a dangerous deviant. Following many critics, Foucault presents the Enlightenment as the aggressive imposition of an ideal of ‘a single *rational* trajectory along which humanity fulfils its essential nature’, one with grim implications for women, ‘the mad’, and other ‘deviants’ who fall outside its strictures (Ingram 1994: 218). Worse still, their oppression was disguised by a rational subjectivist ‘grounding of reason, history, and truth in the figure of the transcendentally free and creative subject’ (Owen 1994: 221). Epistemologically, politically, and culturally, humanist doctrines of rational subjectivity are oppressive: hence Foucault’s often-quoted anticipation of the happy day when ‘Man’ – the rationally autonomous image of him – will be ‘erased, like a face drawn in the sand at the edge of the sea’ (Foucault 1970: 387).

Foucault is obviously critical of humanist doctrines of rational subjectivity and there is much to say about them. I will confine myself to exploring their relationships to science to show, hopefully, that there are lots of ways of thinking how the connections of science, humanism, and rationality, including ones that emphasise potential tensions between them. For some self-described humanists, after all, science, humanism, and rationality are mutually-reinforcing. A good example is Pinker’s book *Enlightenment Now,* which insists on natural harmony between the quarter of themes in its subtitle, *Reason*, *Science, Humanism, and Progress*. I question this by considering what I’ll call the *ratiocentrism* and *dehumanisation* criticisms.

The ratiocentrism criticism challenges the tenability of characterisations of the nature and conduct of human beings and their existence in terms of rational subjectivity. The very general concern is that our rational capacities are too complex and interconnected with our social, affective, imaginative, and practical capacities for it to be plausible to try and privilege *rationality* as the locus of our subjectivity. I suspect few philosophers today think of us as essentially isolated rationalities floating about in an asocial void, sometimes stirred by affects

or imagination. Such conceptions of rationality are truncated and too abstract, deriding constitutive aspects of human beings like our affective capacities as superficial contingencies.

Rational subjectivity is also, for critics, a poor fit with the everyday experience and conduct of life. As a distinguished philosopher of emotion puts it, ‘the rational ideal of careful deliberation’ really ‘seems utterly remote’ from how we actually conduct our lives, especially during times of ‘mental turmoil’ (Goldie 2012: 146). A vision of humans as autonomous rational beings also incorporates an epistemic individualism rendered increasingly untenable once we appreciate just how hugely dependent our knowledge-practices are on other people: we depend on other people for criticism, ideas, information, and other epistemic goods; many epistemic projects are too large or complex to be performed by a single person; moreover, a lot of our everyday epistemic activities rely on social practices and institutions. Such criticisms are common to many philosophical communities – feminists, pragmatists, existential phenomenologists, Wittgensteinians, and others, all sceptical, in their own ways, of attempts to define subjectivity in terms of cool rational capacities hived off from our embodied, social, affective engagement with the world. For John Cottingham, only those who are in the grip of a ‘ratiocentric bias’ could find such truncated conceptions of rationality and their thin visions of human subjectivity attractive or compelling (cf. Cottingham 2009: 250).

That is a general statement of the ratiocentric criticism, the specific variations of which get articulated in many ways, depending on the sensibilities, concerns, and commitments of different critics. It is worth noting, though, that very few philosophers of science would really endorse rational subjectivity. Granted, some still interpret science as a sleek engine of reason, as ‘the one realm of accomplishment of which we can unashamedly boast before any tribunal of minds (Pinker 2018:385). For these ratiocentric humanists, the scientific enterprise is ‘the achievement *par excellence* of detached rational investigation’ (Cooper 1999: 8). The problem with this is that images of science as the institutional systematisation of detached rational enquiry are no longer tenable thanks the investigations of sociologists and historians of science, feminist epistemologists of science, and postpositivist philosophies of science (see chapters 9 and 10, this volume). If science is a search for truth, we should be truthful about science, including what were once called embarrassingly ‘extra-rational’ dimensions.

Granted, some do reject science and reason, either sincerely or provocatively, and the ‘Science Wars’ of the 1990s saw heated attacks on, and defence of, science (one episode saw a physicist write a spoof exposé of the ‘intellectual impostures’ of certain criticisms of the sciences – Sokal and Bricmont 1998). Care is needed, though, to clarify what is actually being rejected and why. Paul Feyerabend’s book, *Farewell to Reason*, despite its provocative title, was specifically criticising ‘faulty’ accounts of scientific rationality made untenable by studies of scientific practice which showed that ‘scientists do not proceed “rationally” in the sense stipulated by abstract models’ (Feyerabend 1987: 1). Rejecting faulty conceptions of science and rationality is not the same as rejecting science and rationality *tout court*. Unfortunately, this obvious point was occluded by the noisy and ideologically charged ‘Science Wars’ of the 1990s, though hopefully we are now past the bad old days when ‘what philosophy of science was offering as an account of scientific rationality was of surprisingly little relevance to actual science’ (Kourany 2010: 107). It is a nice irony that careful studies of science helped challenge the varieties of rational subjectivity to which some humanists cling.

I turn now to the second, ‘dehumanisation’ criticism of humanist doctrines of rational subjectivity, which presents them as offering diminished and dehumanising conceptions of humanity. Foucault’s influential critiques of épistémès, ‘discursive regimes’, and the ‘modern era of “bio-power”’ exemplify the dehumanisation criticism. Doctrines of rational subjectivity, first, construct human beings in narrowly rational terms, rendering us conveniently susceptible to monitoring and control. For Foucault, ‘proper’ behaviour is modelled and predicted by medical and psychiatric sciences that are themselves part of a ‘political technology of the body’, directed at ‘the subjugation of bodies and the control of populations’ (Foucault 1978: 140). Second, sciences are presented as rational enterprises immune to the prejudices and sentiments that sully the rest of the social world. Conveniently, they appear as the only means of achieving the objective truths that ought to be the basis of rational social practice and political policy. Moreover, this image of science conveniently conceals those ‘all-too-human’ factors animating science, most obviously the ‘drives’ for power, emphasised by Nietzsche, that inspired Foucault’s methods of ‘archaeology’ and ‘genealogy’ (cf. Flynn 2005: 30-38ff). What matters is appreciating that ‘knowing subjects and truths known are the product of relations of power and knowledge’, a crucial insight that exposes ‘an aspiration to power’ that, unchecked, ends in ‘the suppression of all conflicting voices and lives’ (Rouse 2005: 107). Hence the ‘sense of listening’ to the many silenced voices who offer *exposés* of the conceits of doctrines of rational subjectivity and also challenge official narratives of socially progressive rational enquiry (Foucault 1981: 8). Think, for instance, of calls for greater inclusion of persons with disabilities who point to more complex conceptions of subjectivity, or historical studies showing the role of sexist biases in scientific enquiry, past and present.

This dehumanisation critique of rational subjectivist humanism is complex and only an example of wider discourses premised on insidious connections between certain conceptions of science, rationality, and humanism. We should, though, see rational subjectivist humanism as a continuation of the Renaissance project of articulating our distinctive, ennobling aspects. The nomination of rationality was intelligible and, up to a point, sensible, even if it later took truncated ratiocentric forms that obscured other aspects of humanity – affects, imagination, sentiment, intuition, spiritual impulses, moral sensibility. Celebration of rationality might also sometimes play valuable strategic roles: the sociologist of science, Steven Shapin, criticises a past hagiographical tradition fixated on images of the ‘genius’ scientist, a rational superhero stripped of sentiment and subjective partiality. An appeal to rationality played a role, though, during earlier hostile times when science needed the ‘protection and celebration’ that could come by stressing its ‘essential rationality and…unique status among other forms of human endeavour’ (Shapin 2010: 11-12ff). The trick here is doing this while avoiding entrenching distorting conceptions of science and rationality. According to one account, the science-free ideal, which explained the superlative rationality of science partly in its alleged immunity to social and political values, helped protect American philosophy of science from the ideological strife of the 1950s, then unfortunately became entrenched in ways that delayed appreciation of the essential role of values in scientific practice (Reisch 2005).

It is ironic that, if these commentators are right, humanism as rational subjectivity can promote both distorting conceptions of science and dehumanising visions of humanity. I take no stand on whether one could amend those doctrines to avoid these risks. What matters for my purposes is simply to note that this is a further variety of humanism with its own accounts of science.

1. **Existential humanism**

I want to consider one final variety of humanism – *existential humanism* – which David E. Cooper has constructed from figures in existential phenomenology, pragmatism, neo-Kantianism, and several other 19th and 20th century traditions, as well as Nietzsche and several others (Cooper 2002: ch.5). The core claim is that an ineradicable role is played by human perspectives, life, and practice in shaping not only our understanding of the world, but also – more radically – the world itself. For Sartre, our distinctiveness lies in the fact that we are beings ‘by whom it happens that *there is* a world’ (Sartre 1957: 552). Existential humanism understands the *world* in terms of the articulated and intelligible world of our experience and engagement: the *human* world is therefore ‘inseparable from subjectivity and inter-subjectivity’ (Merleau-Ponty 1962: xx).

 I will only sketch some general features of existential humanism, directing those who want further details to Cooper’s own elaborations and defences (Cooper 2002: chs. 8-10). Some of the main ones are that the concepts we apply to the world necessarily reflect human values and interests. Consequently, those concepts cannot be extricated from human traditions and forms of life and are only intelligible in relation to our purposive practices and ambitions – no sense can be made of what it is for something to exist, therefore, except in relation to those purposes, practices, and perspectives. As Nietzsche put it, we have ‘only drawn the concept “real, truly existing” from the “concerning us” (quoted in Poellner 1995: 89). A creature that lacked interests and concerns could not have a world at all; nothing would be ‘lit up’ for them as distinct or salient – a possible object of experience, evaluation, and interaction. Hence the existential phenomenological characterisation of our ways of ‘being-in-the-world’ in terms of embodied ‘operative intentionality’ (Merleau-Ponty 1962: xviii). We inhabit a world of practical possibilities, revealed through embodied engagement – climbing, carrying, exploring, walking – which gain significance through their contributions to our life-projects. For the existential phenomenologists, ‘being-in-the-world’ is immersed, engaged, active, and only becomes detached and spectatorial for special purposes. For his reason, existential humanists reject the primacy assigned to rationality by rational subjectivists.

 A lightning sketch omits many details, but two clarificatory points are worth marking, which concern an obvious criticism and a connection to science. First, the existential humanist is not claiming that the world is somehow a product or construction of human beings. One does find such promethean rhetoric out there. Some pragmatists and, at times, Nietzsche indulge in it, as does Umberto Eco when speaking of our ‘gradually constructing ourselves a World’ (Eco 2020: 20; cf. Cooper 2002: 103ff). Our relationship to the world is much more *intimate*: the world is ‘always, already’ there, as Heidegger puts it; our engagement with it is usually unreflective, smooth, and supple – not at all one of our going about ‘imposing’ order on some formless mass. Indeed, our being-in-the-world is experienced as comportment within a world already, as it were, up and running – something existential phenomenologists convey by characterising the human world as a theatre of possibilities, ‘referential totality’, or ‘cradle of meanings’ (cf. Heidegger 1862: §17, Merleau-Ponty 1962: 499).

 Second, existential humanism is clearly a descendent of Renaissance humanism. What it aspires to is an account of our distinctiveness and dignity – our unique manner of being-in-the-world enables us to inhabit and share a world which is experienced as a dynamic space of significant possibilities for personal and collective agency. This world is given its colour and animation through its being ‘lit up’ in virtue of our purposive practices which are, themselves, components of the existential life-projects embedded within a rich intersubjective world – an unquestionably *human* world. Its inhabitants are, indeed, embodied human beings and not a transcendental I, some abstract ‘constitutor’ in whom ‘nothing human is to be found’ (Husserl 1970: 183). Existential humanist attitudes to the divine vary considerably, though pronounced theological commitments are only visible among the ‘religious existentialists’, like Karl Jaspers and Gabriel Marcel. Finally, the frailty theme remains in the epistemic and existential forms of, for instance, the phenomenological claim that the structures of meaning that ‘light up’ the world for us are not anything that we created, and which can, at times, collapse in the horrible experiences of emptiness – of the sudden collapse of the sense of things *mattering* – that Heidegger called *Unheimlichkeit* (cf. Cooper 2002: 249ff).

 I finish here with existential humanist conceptions of science. Central to scientific enquiry is a disengaged spectatorial stance on the world, one dependent on, and therefore derivative of, our everyday ways of experiencing and engaging in the world: ‘cognition in the…spectator sense…presupposes existence’ (Heidegger 1982: 276). Scientific enquiry therefore takes for granted the prior richness of our experiential world, whose structure and intelligibility owe to our concerns and interests. As Husserl puts it, science is rooted in the ‘meaning-fundament’ of the ‘life-world’, the *Lebenswelt*, the shared structure of enthusiasms, interests, needs, and presuppositions constitutive of a certain form of life (Husserl 1970: 121).

 Existential humanists draw two conclusions about science. First, scientific descriptions and explanations of the world, while valuable for certain purposes, presuppose a background way of experiencing the world, one they cannot account for in their own terms. We can ‘stop and stare…in the scientist’s manner’, but this entails abstracting things from that ‘relational totality’ of interconnected structures of possibility even to the point that it is ‘dimmed it down to [a] uniformity’ (Heidegger 1962: 114, 178). The objects and processes studied by sciences, like animals and the weather, initially appear for us through more basic ways of being-in-the-world. Science is therefore derivative, albeit useful for certain cognitive and practical purposes; problems only arise when this dependence gets forgotten (cf. Ratcliffe 2013). This has two implications: phenomenology plays the vital role of describing the tacit, background structures of meaning and experience that the sciences presuppose, hence Heidegger’s remark that the sciences are ‘utterly incapable of gaining access...to their [own] essence’ (Heidegger 1977: 177). The ‘essence’ of science, then, is revealed by phenomenology, making it the most fundamental method of enquiry (cf. Cooper 2002: 193-200ff).

 A second conclusion existential humanists draw about science is the need for what we might call an *existential critique* of science. Many existential humanists celebrate the richness of our being-in-the-world: we experience a world suffused with meaning and significance that resonates with our moral and emotional experiences. By contrast, the world described by the sciences seems to them flat, thin, cold, and devoid of those features, like meaningfulness, that are vital to *living*. The rhetoric used by existential humanists will seem overwrought to those who do not experience the scientific worldview as alienating and empty – Heidegger speaks of the ‘distress’ of our age of science and Husserl declares a ‘crisis of European sciences’ that precipitates a ‘barbarian hatred of spirit’, the erosion of the deep values which stir in us nobler sentiments and feelings.

 Such critiques have two aspects: the distinctive character of human existence is itself threatened by internalization and privileging of scientific descriptions of the world, including we human beings – Heidegger, indeed, judges that what is ‘messing up’ modern thought and culture is ‘the dominance and primacy of the *theoretical*’ (Heidegger 1987: 87). By ignoring or forgetting the richness of our ‘primordial’ being-in-the-world, we thereby fail to appreciate a fundamental truth about our existential situation, about the unique sorts of creatures we are. Such concerns are, again, expressed in different ways by different existential humanists, as in Husserl’s warning that falling victim to a dualistic picture of ‘nature…alien to spirit’ destroys

 our sense of intimacy with the world, replacing it with a sense of estrangement, one so radical it can precipitate a slide into cultural ‘barbarism’ (Husserl 1970: 390, 121ff). Our dualistic and disenchanted existence, for these critics, encourages a calculating, exploitative stance on the world and feeds painful feelings of alienation, hence Heidegger’s characterization of the contemporary human condition being one of ‘distress’.

 A second aspect of the existential critique of science concerns the tendencies of these scientistic attitudes to gradually occlude other ways of experiencing and making sense of the world. The world, recall, is a rich theatre of possibilities lit up by virtue of the myriad practices and projects of human life – the pursuit of religious conviction, say, or appreciation of beauty. When scientific ways of thinking prevail, warn existential humanists, this experiential richness gets dimmed down and treated as superficial, ‘primitive’, or ‘confused’ (cf. Cooper 2002: 337-345). As the later Heidegger famously put it, ‘ways of revealing’ the world central to scientific enquiry start to ‘drive out’ other ways, even to the point that the fact that it is *a* way of revealing a particular stance – one among others, suited only for certain purposes – gets forgotten, hence its ‘monstrous’ character (Heidegger 1987: 26ff). Nature, for instance, gets narrowly ‘revealed’ in relation to human concerns: ‘the earth...reveals itself as a coal-mining district’, the Rhine as ‘water-power supplier’ (Heidegger 1977: 14ff). The possibility of alternative ways of experiencing places, creatures, and things is therefore gradually driven out, dimmed down, until one sees cattle as meat-on-legs, chickens as ‘egg units’, and human beings are talked about and treated as ‘human resources’ (cf. Zimmerman 1990). Crucially, this expresses a corrupted variety of humanism which ‘explains…whatever is, in its entirety…in relation to man’ (Heidegger 1977: 133). In Paul Feyerabend’s evocative term, it is a ‘conquest of abundance’, a process of experiential impoverishment made possible by the entrenchment of inflated conceptions of the nature and significance of science (Feyerabend 1999).

 I hope that even this sketch confirms that existential humanism is a complex doctrine with distinctive conceptions of the epistemological, cultural, and existential status of science. It is also a genuine form of humanism: our distinctiveness lies in our unique ways of being-in-the-world as existentially concerned creatures, ‘condemned to meaning’, who experience the world as a theatre of possibilities. In most of its forms, there is no theological dimension, even though some responses to its intrinsic sense of epistemic and existential frailty are expressed in religious terms. The French Catholic and existentialist, Gabriel Marcel, for one, urges us to cultivate an ‘ontological humility’ (Marcel 1949: 132).

Whatever one makes of existential humanism, we must recognise it as a contemporary variety of philosophical humanism which offers distinctive critical accounts of science. Indeed, it is one of the latest in an ongoing history of diverse forms of humanism, which offer different ways of understanding and evaluating scientific knowledge and ambitions. Ironically, what we find in the history of philosophical humanisms is what we ought to expect of creative, self-expressive creatures: endless variety.

**Acknowledgements**

I am grateful to the Anjan Chakravartty for astute comments and for inviting me to contribute to the volume, to an anonymous referee for probing criticisms, and to David E. Cooper and Craig French and Ellie Robson for helpful encouragement and discussions.

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