Wikipedia Knows Nothing

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Chris Bateman

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For my parents, Albert and Pat, who are no longer with us, and for my children, Soren, Leto, and Blake, who will still be here after I have gone.

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Preface

Despite the title, this book isn't intended as an attack on the Wikipedia. In fact, I have been (and perhaps still am) an editor of the Wikipedia, and turn to it often as a convenient reference for topics where consensus is a foregone conclusion, since it is an outstanding aggregator of trivia. What I am arguing in this book, however, is the Wikipedia cannot be a source of knowledge, in part because of the uncertainties that necessarily accompany using it as a source. Yet the deeper claim I am developing here isn't directed at the Wikipedia, since my argument extends to *all* encyclopaedias that have ever been written, and perhaps that ever could be written, since aggregation of facts is radically disconnected from knowledge as it ought to be understood.

The contents of this book do attack something, however, something that I am trying to reform, expose, or even perhaps entirely destroy: anonymous peer review. I write papers for conferences and journals that go through this arcane ritual, and I review papers for conferences and journals and must thus accord with its strange and hierophantic oddities. I consider the entire process to be thoroughly immoral, for reasons that shall become clear in due course, and always append a note to my own reports stating my willingness to be identified to the authors whose work I am reviewing. Masks, despite the mythology of superheroes, do not bring out the best in people. Furthermore, the practice of concealing the identities of everyone involved in an assessment of written work is utterly and inescapably counter-productive, having more-or-less the opposite effect of what is intended. The confused picture of knowledge which makes anonymous peer review seem reasonable – even ethically desirable – is something that I hope that my arguments here manage to bring into question.

Nonetheless, my purpose in writing this book was not to launch an attack on anonymous peer review: that battle has already begun; I am merely joining the growing movement that recognises what a horrendous misstep there has been within the academy in the unthinking acceptance of the rhetoric of secrecy as a road to truth. Rather, I wrote this book, and the blog posts that comprise its earliest draft, because I wanted to sort out, in my own head, the tremendous confusion about knowledge, reality, and expertise that has dominated thinking within my lifetime. My hope, of course, is that other people will read what I have written and see that, as Isabelle Stengers and Philippe Pignarre are fond of saying, "another world is possible", a slogan associated with opposition to capitalism, but which can inspire us without us having to identify a specific 'enemy'. My further hope is that this book will be part of an ongoing conversation, an example of the virtuous discourse I have committed to furthering.

A key claim I develop in this book – that the connection between anonymity and truth is one that ought to be challenged – took an interesting turn shortly after I finished the draft manuscript and announced it to the world. Nine days after this, a Wikipedia Czar called a tribunal, and within a week the page about me had been deleted. While this *could* be a coincidence, after a decade of no interest at all in my page it certainly seems like a retaliatory gesture – and one, I might add, that would violate the values and policies of the Wikipedia if that were its motivation. In a brutal irony, it is this kind of abuse that *Wikipedia Knows Nothing* warns about, while maintaining the inherent value and potential of wikis as tools. It might well be that I am indeed no longer 'Notable', since Wikipedia has undergone considerable notability-inflation in the ten years since I was first declared 'Notable' in 2006. But the implication of what happened to my page, and indeed to many others that have been summarily deleted over the years, is rather far from the egalitarian claims that the Wikipedia is something 'anyone can edit'.

The book is organised around four questions, all of which are concerned with what philosopher's call epistemology, or the theory of knowledge. I wanted to mention this here, in the preface, as I shall be trying to avoid

words like ‘epistemology’ in the book’s chapters, since I hope to write a book that can be read by anyone, and not just academics. I shall probably fail. But I remain inspired by Mary Midgley’s remarkable talent to combine erudition and accessibility in her books, and strive towards this ideal in all my philosophy – for all that the temptation to use some esoteric term (like ‘hierophantic’) all too often leads me astray. Philosophy is a service just like plumbing, and it ought to be there for whomever needs it. Indeed, Midgley frequently compares philosophy to ‘conceptual plumbing’. I prefer to call it ‘nerds with words’.

While I’m airing my philosophical laundry, a short note about my use of the phrase ‘fundamentally immoral’. This may appear to be an appeal to rational foundations of morality that no-one could reject, in the manner of Enlightenment philosophers such as Kant. My position on moral philosophy, as developed in *Chaos Ethics*, does not rely upon this kind of foundational argument: I always assume different moral practices will be in play in any contentious situation. My assertion that anonymous reviewers are pursuing a fundamentally immoral practice is thus based upon the simpler claim that any moral argument that could be used to defend double-blind peer review will be vulnerable either to the epistemic argument I develop throughout this book that a commitment to the truth should mandate transparent, co-operative review practices, or to Kant’s argument for transparency, presented in the third chapter. ‘Fundamentally immoral’ thus means solely that there is no viable *moral* argument for the anonymity of reviewers that doesn’t entail fatal inconsistencies.

To my infinite surprise, I found I have chosen endnotes – and this decision has occurred despite my agreement with my aesthetician colleague Nils Stear that trying to read endnotes “is like eating French fries thirty feet from the ketchup bowl”. The problem he alludes to is one I am equally frustrated with, which is when a subsidiary thought is buried in an endnote, forcing the reader to approach an otherwise linear essay as if it were a *Fighting Fantasy* gamebook (“If you read the pithy aside, turn to page 23…”). Nonetheless, I chose endnotes because I wanted the

prose to read as cleanly as possible and I have long since eliminated in myself the desire to append such subsidiary thoughts: if I cannot get the important ideas into my writing, I have not written as well as I should like. So yes, I have used endnotes, but you should never feel obligated to span the thirty feet to the ketchup bowl since *every endnote in this book is only ever a citation for further reading.* No quips, remarks, observations, or insights lie in the notes section – you only need to go there if you want to see who I am leaning upon.

My thanks are due to a great many people for their contributions to the discussions that led me here, and for their assistance on the road to publication. First and foremost, to my wife for continuing to support my 'philosophy habit', and for helping me create the space in our rather crowded family life for writing. Thanks are also due to José Zagal for hooking me up with Drew Davidson, the editor who has generously taken my thoughts and turned them into a paper-and-print book – and a bits-and-bytes e-book, my first publication with a Creative Commons license. I must offer yet further thanks to Mary Midgley for her continued support – and criticism! – of my work, and to Allen Wood for the same. I am lucky to have such wonderful minds as correspondents.

Then there are those who I have not met or spoken to, but who have massively affected the course of my arguments and investigations. I only recently discovered Jacques Rancière's work, but you will find his fingerprints all over the final chapter of this book. I do not know that I would have had the strength to attempt this without his becoming, for a while at least, my muse. I also offer my grateful thanks to someone who sadly passed away while I was finishing writing this manuscript: Hilary Putnam. He spent much of his career arguing against the picture that this book challenges, and we can all find inspiration in his endless willingness to challenge and revise his own point of view as much as anyone else's.

Enormous gratitude is also owed to those wonderful digital travellers who alight from time to time at my blog and share thoughts upon the

ideas that have eventually been crafted into this text. A few names are obfuscated by nicknames, but none have used it as a mask to deny our equality. Thanks in this respect are owed first and foremost to Chris Billows, without whose interest in the topic this book might never have been written, but also to Peter Crowther, ptermx, Dirk HK, and Bart Stewart, not to mention to Matt Mower for inducting me into blogging in the first place. Similarly, to those who have had brief exchanges with me about this on Twitter, including Ian Bogost, Frank Pasquale, Matt Thrower, Dave Morris, Hilda Hernández, and Petri Lankoski, who has also had to endure my pontificating about anonymous peer review in the context of deploying me as a reviewer. I must also thank translucy, who I met at my blog and whose absence there I now miss, who first suggested to me the parallel between the Republic of Letters and blogging.

Further thanks must be offered for the more obscure or tangential forces that shaped this book, such as Heythrop College Library for loaning me a (new and unread) copy of Hubert Dreyfus and Charles Taylor's *Retrieving Realism*, and the librarians of the University of Bolton for arranging this for me. This was the capstone of this project in many respects, since until reading that particular book I wasn't sure if I wasn't just disappearing down a hole of my own creation – yet here were two philosophers I greatly respected making eerily similar arguments, and also drawing on Wittgenstein's idea of a picture that holds us captive.

I'd also like to offer deep and sincere thanks to those who helped to kept my morale up in my lonely corners of the internet, such as Oscar Strik and Rik Newman, without whom I might have given up hope long, long ago.

Finally, I offer my gratitude to you for reading this book. Without you, it would be incomplete.

1

What Does Wikipedia Know?

Can someone who looks up a topic on the Wikipedia be said to have access to knowledge on that subject? This ubiquitous online reference calls itself 'The Free Encyclopaedia', or at times 'The Free Encyclopaedia that anyone can edit', and boasts, at the time of writing, more than five million different pages that can be referred to. But for all that Wikipedia is recruited by a vast array of different people to look up a great many different kinds of fact, there is still always a lingering doubt in our minds about what the Wikipedia can be said to *know*, and thus whether we can reliably claim to know anything when we turn to it as our guide.

Questions concerning what can be said to constitute knowledge have been the purview of philosophy for as long as this practice has possessed this particular name. The most general formula for understanding what constitutes knowledge is *justified true belief,* and this too is as old as the term philosophy itself. Deriving from Plato's *Theaetetus* dialogue[1], the core of the idea is that we can claim to have knowledge when we hold a belief about the world that is true, and when we also possess a legitimate justification for that belief. I have reasons to question this model, but this will have to wait until later. For now, it is sufficient to ask whether anyone relying on the Wikipedia can be said to possess justified true belief.

It is clear that there a good reasons for doubting that someone whose *only* source was the Wikipedia can form a justified true belief. In the first place, any time we refer to the Wikipedia, we have no way of knowing whether the information recorded there has been mischie-

vously altered by someone, effectively at random. The open editorial policy means that we can never eliminate this possibility, which gives us reason to doubt the accuracy of anything read there. Furthermore, while the content policy means that any claim posted must be referenced to some other source, there are limited standards of quality control regarding this referencing: it is perfectly possible to accurately reference inaccurate claims, for instance. So we can also doubt that the Wikipedia, by itself, provides any basis for legitimate justification. Indeed, the only times we can actually be confident that the Wikipedia has valid content in an article is when we know that topic *from some other source*. At this point, the Wikipedia has ceased to be a provider of knowledge at all, and has become merely an *aide-mémoire*; a means of reminding.

How does the Wikipedia differ from, say, a traditional encyclopaedia? The construction of a reference work of this kind has traditionally involved an editorial team selecting experts in various fields to write articles that summarise topics relating to those fields. Clearly, the knowledge so recorded can still be wrong – examining early twentieth century encyclopaedias reveals the extent at which our knowledge has been substantially revised just in the last century – but where such a book is correct, we have at least a strong claim to justification: the expert who drafted the article text was selected precisely because of their knowledge of the field in question. We can, in principle at least, possess justified true belief if we start from a conventional encyclopaedia to a degree that cannot apply to the Wikipedia. The decisive point isn't the truth of either source: it is the lack of reliable claims to justification on behalf of the Wikipedia.

What can help make this clear is that the way an encyclopaedia is supposed to make its claim to recording knowledge is based upon an appeal to the authority of experts. The problem with the Wikipedia is that the editors are in no way guaranteed to have expert knowledge, and neither are they necessarily qualified to distinguish expertise from its alternatives. This does not make Wikipedia useless: it functions as a gigantic (and highly effective) 'dial-a-geek', whereby you can get an informed

opinion via a random unknown nerd or cluster of nerds. It is likely to be correct when the information is straightforward and uncontested (historical dates, for instance). But beyond trivia, its claims to knowledge become increasingly sketchy. It certainly *could* contain factual information – but you can never be sure that what you are looking at does constitute facts, not unless you have some other point of reference to compare against.

This leads to a rather severe conclusion: the Wikipedia knows *nothing*, or rather, someone using the Wikipedia cannot *know* anything from that alone. Whoever refers to a topic on the Wikipedia cannot be said to possess justified true beliefs (i.e. knowledge, conventionally construed), because no-one who edits the Wikipedia has been credibly selected for expertise, creating a gap in justification. Wikipedia editors have self-selected based on personal interest – which is why there are so many articles about (say) *Star Trek* and videogames. Indeed, a rough and ready search of the contents via a search engine suggests approximately 26,000 pages about *Star Trek*, and about 174,000 about videogames, although these are likely to be overestimates. Still, the last version of the book entitled *The Star Trek Encyclopaedia* contains only 5,000 entries[2] – and a typical encyclopaedia contains none. There's clearly some kind of mismatch in this regard.

The process of looking something up on the Wikipedia *could* still convey expertise – it frequently does about as well as any other encyclopaedia![3] – but we are never certain that it has done so in a subject we ourselves know nothing about. This creates a significant gap in its claim to knowledge, when knowledge is understood on the conventional basis as justified true belief. Despite its policies of 'no original research' and 'verifiability', all sorts of strange and wonderful claims end up creeping into its articles, in part because the attention of its editors is never evenly distributed.

The editors of the Wikipedia inevitably end up spending their time working upon the areas of interest to them, which is quite understandable

given that this is voluntary work. Some spend a great deal of time having discussions with other editors in good faith about what the pages should contain; some spend their time working on pages that are of limited interest and that no-one else contributes to. Some take an entirely negative stance and focus upon bestowing 'badges of dishonour' like "This article does not cite any sources" or "This article needs more links to other articles to help integrate it into the encyclopaedia" on the articles that do not appear to be up to scratch. There's even a name for the practice of dropping such badges without participating in the content discussions: 'drive-by tagging'[4].

For my own part, I became a Wikipedia editor after watching, for quite some time, my own Wikipedia page remain empty. Someone, and I have no idea whom (such is usually the case when it comes to the Wikipedia) created a page for me in connection with my first non-fiction book, and I thus hurdled the site's 'notability' criteria. But years passed, and nobody ever came and added any content to that page. I spoke to other people in the games industry about the Wikipedia, and was repeatedly informed that the easiest thing to do is just to make the edits anonymously and be done with it. But I didn't want to do that. I wanted to respect the Wikipedia's policies, and secretly filling in my own details was clearly not permissible.

Then I found a loophole. While editing your own page is an infringement of the Wikipedia's guidelines on 'neutral voice' and 'conflict of interest', it is not specifically forbidden. So I created an account in my own name, made my 'talk' page correspond to my own entry in the Wikipedia (so that I would be publically identifiable in connection with my edits), added the content that I had drafted, explained what I had done and why on the talk page – and then waited. Sure enough, the article was soon after tagged as 'Conflict of Interest' by another editor, who came to my page assuming malfeasance. However, I had a good and productive discussion with that editor, which ended amicably with the agreement that, since no-one else cared about the page, it was just as well that I had attempted to buff up its content. Later that year, I replaced the original

'badge of shame' with one stating 'Autobiography'. Somebody took it down at one point, but it was back up again soon after, and remained in place right up to the point that a cabal of elite Wikipedia editors elected to delete my page entirely.

If it seems strange that I am not permitted (without a 'scarlet letter', at least) to be a reliable source upon myself for the Wikipedia, it is worth reflecting that no traditional encyclopaedia would *ever* let someone write an entry upon themselves, since bias would be assumed in such a case, and that would be taken to undermine any claim to knowledge. In this regard, the fact that it is at least possible on the Wikipedia to do so is a sign that it might be doing something *more* than being 'just' an encyclopaedia, a point that we will have to return to at a later juncture. For now, we must reflect upon the strangely disconnected quality of the discourse lying behind the contents of Wikipedia articles.

For many articles (but not all – recall my own page), there are a community of diligent nerds working behind the scenes to try and uphold the Wikipedia's policies and provide text that both captures the truth, and attempts to justify it with reliable sources. This community is honourably striving to meet Plato's requirement for knowledge by presenting justified true belief, to the extent that some pages are tagged as deficient precisely because of a lack of expert testimony among the cited sources. But try as we might, the editors of the Wikipedia can never quite manage to fully bear the burden of knowledge in the conventional sense… we may be able to *assure* ourselves that we have found a suitable justification for a claim, but we can never *insure* that content in a way that gives anyone looking at one of its articles the requisite confidence in its justifications.

Even when Wikipedia provides correct information we cannot know it has done so, and thus can possess no justification for claiming that we do. I say this as both a user and an editor of the Wikipedia, and as someone who appreciates both its remarkable virtue as a public database, and the incredible efforts expended in the maintenance of that data. It is not this particular resource that I am trying to bring into question here, but

the very idea of databases as a means of knowing. Knowledge, whatever it might be, becomes tainted with doubts when it is compiled using the kinds of techniques that lie behind the Wikipedia – and this in turn raises interesting questions about all our knowledge.

Factual Knowledge

What does it mean to say you have knowledge of something? Either that you know the facts, or that you know how to do something. In some cases that you know the facts, *because* you know how to do something – the practical skills of mechanics give them many of the facts about engine maintenance, for instance. But in what sense does merely *remembering* a fact constitute knowledge?

By 'facts' we mean those things that are known to be true – irrespective of how this is ascertained or justified. This wider question of justification was precisely what led me to suggest that the Wikipedia knows nothing, based on the usual construal of knowledge as justified true belief. Yet knowing a fact does not mean we are able to reproduce the conditions by which it is known to be true; this would be rather difficult in many cases. How exactly would you demonstrate that it was true that the city of Constantinople fell in 1453 AD, or for that matter that the city of Istanbul was captured in 857 AH? Knowing the facts by themselves usually means little more than remembering something that you heard was true, and continuing to assert it as true.

Around the turn of the twentieth century, the school of philosophy that was soon to be termed 'analytic' was keenly focussed on logic, since this was the aspect of philosophy and mathematics that dealt with truth, which was taken to be fundamental largely on the basis of Plato's work. Bertrand Russell's concept of logical atomism, first expounded in 1911, but later influenced by the early work of his pupil Ludwig Wittgenstein, was based on the idea that the world could be understood as being comprised of facts, about which we could have beliefs that would be (logically) true or false[5]. The relationship with Plato's thought is clear, and

logical atomism in effect shored up the construal of knowledge as justified true belief, already discussed.

A key text in respect of early twentieth century ideas of knowledge is Wittgenstein's *Tractatus Logico-Philosophicus*[6]. It influenced Russell's later work on logical atomism, and inspired a group known as 'the Vienna circle' into a project of elevating the sciences above all other ways of knowing, which I have criticised elsewhere[7]. But Wittgenstein himself seems to have been rather horrified by the direction his work was taken, and it seems clear he himself had not intended his philosophy to be used this way. Not only was he thoroughly unsatisfied with his mentor's introduction to the *Tractatus*[8], *but on the few occasions he interacted with the Vienna circle he found their misunderstanding of his work to be so painful that he turned his chair to the wall and began reading the work of a renowned Bengali poet aloud rather than talk to them*[9].

It seems that Wittgenstein's own view of his early philosophy was as an attempt to lay out the limitations of conventional philosophy, and to elucidate the mistakes that philosophers are apt to make by building theories to address problems that are at root problems of language. His claim in proposition 1.1 of the *Tractatus* that "the world is the totality of facts"[10], and similarly in proposition 4.01 that "a proposition is a picture of reality"[11], were thus not meant to *endorse* the stated ideas (as Russell and the Vienna circle did) but to explore the problems that would follow from doing so. The implications of this have still not been taken entirely seriously by the tradition of analytic philosophy set in motion at this juncture, and Wittgenstein spent the rest of his career trying to undermine what he had inadvertently set in motion.

The final line of the *Tractatus* states: "About what one can not speak, one must remain silent."[12] To the Vienna circle this was a call to arms to flatly reject what philosophers call *metaphysics*, the untestable suppositions and presuppositions of thought and being, which form systems I call mythologies or *mythos*[13]. For these early twentieth century thinkers, inspired by Wittgenstein, such matters were to be dismissed as nonsense.

For Wittgenstein himself, the spiritual ideas, moral convictions, and ethical values that could not be tested were far from worthless: they were the most important concerns in life[14]. His point about remaining silent about them was not intended to be a dismissal, but a recognition of the limits of philosophy as it was then understood.

Regardless of Wittgenstein's own views on the *Tractatus*, a great many people would support his proposition that "the world is the totality of facts", at least in principle. To have the facts is thus to have knowledge of the world, and some subset of all the facts that might be asserted constitute what is called in English 'general knowledge'. While any catalogue of general knowledge might contain any number of different facts, for every cultural context the truth of the vast majority of the propositions in circulation is not really in doubt.

Factual knowledge is thus cultural knowledge, a point that comes out clearly in French and Spanish which render the concept as *culture générale* or *cultura general*. The fact that Everest is the tallest mountain in the world is certainly a part of the general knowledge of Great Britain, whose colonial surveyors measured it and named it thus; it might also be true in Nepal that Sagarmāthā is the tallest mountain in the world, or true of Chomolungma in Tibet, but anyone in English who replied that Chomolungma was the tallest mountain in the world would need to provide the additional explanation to demonstrate that this fact still accorded with general knowledge.

Factual knowledge like this is precisely what an encyclopaedia aims to collect and present, as indeed is also the case for an almanac. In such cases, we trust in the authority of the people who have compiled the reference book or database when we take the propositions they contain as facts. That trust is part of our justification for accepting them as true; it is why our belief in it is considered *justified*. But in each such case, the production of the fact itself – the height of a mountain above sea-level, for instance, or the history of a city – involved the application of very specific *skills*. Every fact was derived by a practice, or a collection

of practices: geometry and the use of a theodolite provided the height of Everest; calendars, record-making, and the interpretation of records provide the history of the city at the mouth of the Bosphorus alluded to above.

This being so, it would seem as if there are not two kinds of knowledge at all, since factual knowledge rests at its core upon practical skills. It is these practices that have the authentic claim to knowledge – knowing 'the facts' without the practices that underlie them is only trusting that you are connected by a chain of reliable witnesses to those who do possess the relevant skills. Furthermore, the extent to which we truly share in the knowledge being conveyed in such a way will always be limited by the extent we understand the relevant practices. If the world is understood solely as the totality of facts, we will miss the more important point that *being in the world* involves far more than mere facts, which are merely the residue of the skills that provided them. Factual knowledge is nothing but *repeating*.

Knowledge as a Practice

The break with the conventional conceptions of knowledge implied by the preceding discussion is significant enough that it is quite possible I have failed to make the idea sink in with sufficient force to dislodge our engrained habits of thought. For despite knowledge usually being understood either as the recall of facts, or as the application of skills, I am suggesting that *every fact* was produced by a practical skill, or a cluster of such skills. This proposal reduces factual knowledge to mere repetition, and suggests that *all knowledge can be understood as a practice*. This, not coincidentally, aligns with what Wittgenstein attempted to demonstrate in his later philosophy: that our languages and propositions could only be understood against a background of understanding, and that at the core of our being in the world is the notion of a practice[15].

The idea that factual knowledge is merely repetition also means that my case that the Wikipedia knows nothing is even stronger than first

suggested: not only are there questions about justifying any claim that was taken solely from a wiki, but any mere database can only collect facts and cannot adequately provide skills. Indeed, *no encyclopaedia is a source of knowledge* since facts are not in themselves knowledge. That said, Wikipedia editors *do* possess knowledge: the practices of the Wikipedia itself. These are methods for composing texts that will possess justified true belief, i.e. for repeating factual knowledge. There is a skill here – although it should be clear that the practice in question is always different from the knowledge that the Wikipedia articles are *claiming* to present, which belongs solely to the people whose work produces the 'reliable sources' being referenced.

This way of understanding *knowledge as a practice* completely replaces the scheme of philosophical thought concerning knowledge that originated with Plato, namely that it can be understood as *justified true belief*. This principle alleges to be a means of explaining why a *fact* constitutes knowledge: my counterpoint is that all facts are merely a residue of the knowledge that produces them, and are not in themselves knowledge, as such. A proposition that can be said to constitute a fact does indeed attain that status via justified true belief – Plato's scheme is not incorrect, it is just misleading. It suggests knowledge is a question of the validity of *beliefs*. But the important point is not 'true belief', but *justification*: knowledge is that which can provide a justification.

The clearest cases can be found in considering the sciences, although we should not construe from this that the *only* knowledge-practices are scientific. Consider, as a starting point, Einstein's famous energy-mass relationship[16]. If you know that E=mc2, you do not have knowledge unless you possess at least one of the practices that relate to this formula and its derivation. For instance, I have some basic knowledge of Einstein's mass-energy equivalence because I can derive the formula in question from a simple thought experiment using Newton's equations of motion. I have some mathematical knowledge about this subject. There is much more than maths entailed in providing the justification for the equation,

however. The equation was merely an idea in Einstein's head until its implications were experimentally verified.

In 1932, John Cockcroft and Ernest Walton bombarded lithium with protons and produced data that is widely taken to prove mass-energy equivalence[17]. Curiously, however, they were not testing this: they were merely testing the hypothesis that the lithium atoms would disintegrate into two alpha particles when struck with protons. Here is an odd case: the evidence produced as proof for special relativity's most famous formula came from a special practice, that of the design of a voltage multiplier to use with a discharge tube, intended for another purpose entirely. Who has knowledge in such a case?

I find it helpful to deploy the conception of the sciences developed by Isabelle Stengers, that successful scientists learn how to make inanimate objects form *reliable witnesses*[18]. Cockcroft and Walton's experimental practices made lithium atoms into a reliable witness. Bruno Latour adds to this idea the concept of a *spokesperson*[19]: Cockcroft and Walton were spokespeople for lithium atoms after their experiment. Using these terms we can see that anyone who understands the mathematics of special relativity has knowledge of physics that involves recruiting Cockcroft and Walton and lithium atoms in a chain of reliable witnesses. In an odd yet perfectly understandable way, their practices regarding electrical equipment form part of the knowledge of mass-energy equivalence, broadly construed.

What this example illuminates is that when we conceive of knowledge as a practice, that knowledge is rarely if ever the result of individual capabilities. Knowledge is sustained by networks of practices, chains of reliable witnesses (especially in the sciences) or lineages of techniques (especially in the arts) that distribute what we can be said to know between all those whose practices contribute to that knowledge. Frequently, we cannot even adequately elucidate everyone thus entailed: if we look at a contemporary painting influenced by impressionism, we

may be able to name impressionist painters, but what of the practices that made the oil paints, the canvases, the paint brushes?

Knowledge is not just a practice, it is created and sustained by networks of practice that cut across history. Facts are merely the residue of these networks, and remembering them is not having access to the knowledge behind them. And yet, the act of remembering is in itself a kind of practice – especially in subjects such as history, where the facts are connected by causal relations and influences that must be carefully distinguished. Perhaps, then, the facts can still constitute knowledge – provided there is a practice involved in their relation. But we should give up the idea that to know is to repeat propositions that are both true and justified as being so: isolated claims mean nothing. To possess knowledge, we must engage in practices – our own, and those of others too numerous to count.

Notes

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10. Wittgenstein (1921),p25.

11. Ibid, p38.

12. Ibid, p90.

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2

How Many Real Worlds Are There?

A premise of modern thought is that there is only one real world, and that knowledge can be equated to access to this singular real world. Against this are various forms of relativism that would claim that knowledge is always contingent upon circumstances, and thus there are no worlds that could justifiably be called real. But there is a third option between the two: there could be many real worlds.

I need to be clear that these many real worlds are not the ones that physicists call a multiverse, having borrowed the term from novelist Michael Moorcock[1]. In the physicist's multiverse there is one *real* world and many *possible* worlds. What I'm talking about here is what William James called a multiverse[2], half a century before Moorcock: that rather than a universe, an 'all-form' of reality, our existence is better understood as comprised of multiple 'each-forms'. It is an idea that I have developed, using both James' and Moorcock's work, as a way of understanding our common existence and addressing our ethical disputes without treating morality as fundamentally 'unreal'[3]. We live in the same multiverse, but there are many real worlds that comprise it.

Immediately we hit an impasse, because our very notion of 'real' gives us reasons to expect one and only one real world. We are, to use Wittgenstein's phrase, held captive by a picture[4]. In particular, if what we think of as 'the real world' is a gigantic, universe-sized box full of vacuum and atoms, it can be hard to see how there could be more than one real world. But even if there were only one real world, it could not possibly be like this image of space and matter; the physicists of the early twenti-

eth century showed that extension was not absolute, but relative, and that existence was about which possibilities occur. Relativity and quantum mechanics call for a new understanding of the physical universe, since our current model descends from the era of Newton and begins to seem implausible. We must look again at what we mean by 'real'.

Consider, as a stepping point, what happens if we replace the idea of a box of matter as the basis for what exists with the idea of a set of events and their relations. This is a concept that comes from Alfred North Whitehead's wrestling with the philosophical consequences of early twentieth century physics[5]. What immediately comes into play is a capacity to distinguish relationships between specific events from relationships that will apply to all events of a particular kind. To say what happens when we burn wood (the general claim) is different from talking about a particular tree that burns after a lightning strike (a specific claim). Our sense here is still of regularities: the general claims constrain the specific claims; the relationships between events behave in an orderly fashion. We can see immediately that we do not need the box of matter idea to conduct empirical research. The web of events can serve the same role.

Now imagine a confrontation between two alien races who have different images for existence along these lines. The *Boxers* look at the universe as a vast container of atoms, while the *Eventers* see it as a network of events. Both species find that their equivalent to scientists can, all other matters being equal, make accurate predictions wherever their theoretical models are strong – yet the actual models might be quite different in their concepts and terms. We would still expect that, where a mathematical model could be produced, that the numbers would come out the same for both species, but the kind of things either is thinking about would still be radically different.

The conventional way of explaining this situation is that the subjective worlds of the Boxers and Eventers 'track the truth' of the objective world. The objective world here is essentially a superset, within which

all subjective worlds are nested (as dependent upon the objective world for their existence). This objective world is a comfortable concept for the Boxers, because it equates to there only being one 'true' configuration of the atoms in the universe. You could focus on some smaller region in space and time, but the Laws of the box would remain the same.

However, what is the objective world to the Eventers? The superset of all events is not a single object like the universe-box, because each event is in itself a cluster of events, as encountered by anything else according to its own unique conditions for its existence. There are, in fact, many different ways of understanding the sets of events, and hence many true configurations of events. Indeed, it is possible to 'stitch together' a completely consistent tapestry of events that includes all the space and time within the Boxer's universe and *still* have a vast reserve of consistent event-sets 'left over'. Eventers are not so likely to talk about 'an objective world' at all: they are far more likely to recognise that there are 'objective worlds' for every conceivable kind of entity.

This shows just one way of understanding the idea of multiple real worlds. The key point is that what makes one singular real world seem plausible is the image of a box to be filled in; of knowledge as a jigsaw to be completed, piece by piece. The image of a network of events instead suggests different possible 'stitches' between sets of events, and patterns between events that depend upon the particular focus in each case. The view attributed here to the Boxers is how we talk about the work of the sciences, but the view attributed to the Eventers better describes what scientists actually do. This is a point made, in different ways, by Whitehead, Bruno Latour, and Isabelle Stengers, and its implications take some pondering.

What the Boxer-view gives us is a reason for faith in the processes of the sciences being capable of rendering reliable witnesses out of the different entities we encounter – it helps us understand the motive behind the work of all scientific researchers, namely to allow inanimate objects to 'bear witness', and to find ways to assure the reliability of their 'tes-

timony'. It reflects the truth of the idea that what happened could be definitively settled once it has occurred. There is a way to put everything together coherently – but we always have to bear in mind that we don't ever actually have a grasp of this coherent totality, and could never know we had even if we did!

What the Eventer-view gives us is a better understanding of why scientists are able to produce reliable witnesses – it brings into focus the tremendous work of not only establishing what to examine, but devising methods of translating the observed events such that they can secure this reliability in the eyes of anyone who cares to join the investigation. As Stengers notes, when we talk about what is 'objective', we are referring to the questions that can be answered reliably by a certain experimental apparatus, which then open up new questions[6]. Understood this way, there is no need to invoke an 'objective world' to explain the work of the sciences: they are objective precisely because they are *concerned with objects* and the difficult challenges involved in making them 'talk' reliably.

However, the Eventer-view also hints that scientists might not possess the only skills capable of producing reliable witnesses. In many cases – electrons, distant galaxies, DNA – scientists and their tools have the best chances of producing an adequate translation. But when it comes to, say, living in the Amazon rainforest, methods of observation must share the stage with the practices of living, which can bear upon a real world without that world having to be that of the Boxer-view – nor necessarily contradicting the state of perfect knowledge that image implies. Even a monkey who lives in the rainforest knows more of the relationships between its events than can reasonably be dismissed as 'not real', even though their knowledge in that regard might be limited.

The picture that holds us captive becomes visible when we imagine what is real and comprehend it as a single consistent arrangement of matter, and a single consistent set of propositions that accord with it. But relativity and quantum mechanics don't suggest this kind of configuration

for the physical elements of existence, and perhaps more importantly our intense focus on *real* distract us from the fact that this singular real world is *imagined*. It is precisely because it is imagined that a plurality of worlds need not contradict the inviolability of events: once we see that worlds are situated in their conditions, and cannot easily be totalised (and certainly not by imagining matter as a basis for doing so), it makes less sense to be talking about a singular world as the locus of the real. The real always exceeds us, no matter who or what we are, a point made in a rather different fashion by Alain Badiou[7].

It is because of this excess that reality possesses, and because our vision of a universe can only ever be an imagined unity, that we ought to be more cautious than we are about letting this idea guide our thoughts. Mary Midgley makes the point that what we call 'the real world' is the totality of existence and is at best, as Immanuel Kant suggested, a necessary element of our thinking processes – it is not the name of something we can directly encounter[8]. Furthermore, she points out that if we have understood the way the sciences work, we must appreciate that the different kinds of questions we ask will result in different kinds of answer. They must be compatible (the Boxer view must always be possible to imagine) but different 'stitches' between events can create impressions that seem incompatible. She uses the example of a Swiss roll (or jelly roll): sliced downwards, you find a spiral; slice lengthwise, you see stripes. You cannot reduce stripes to spirals or vice versa, yet these patterns *can* be related once their relationships have been properly understood[9].

If there was only one real world, we would have to conclude that no-one could actually know it, although they might be inspired by the possibility of something eventually knowing it. If there was no real world, even the possibility of knowing would be extinguished. But from a perspective grounded upon events or processes, everyone (everything!) can know something of the real without anyone ever possessing the whole of it. This is why we will find multiple real worlds if we look closely at what actually happens rather than focussing on the question of how

all witnesses can be made to tally with a hypothetical ideal universe of knowledge. Of course, from any one single perspective, it can still be tricky to ascertain which aspects of your world are real and which are otherwise without seeking reliable witnesses, of any kind. But this ambiguity doesn't detract from the reality of each world, nor should it. There is no universe, and never was. The fact of our living together in our different worlds should have made it clear that it was always a multiverse.

The Subjective Knowledge of Squirrels

If you startle a grey squirrel who is foraging on the ground, they will immediately dash towards the nearest tree, run up and around it until they cannot be seen by you, then climb upwards as much as needed to in order to feel somewhat safe. If you pursue the squirrel, they will shoot up the tree, along the branches, and head for the point in the foliage of the canopy where another tree overlaps, or is at least fairly close by. When the neighbouring trees do not touch, the squirrel who is avoiding your unwanted attention will leap from its original tree across to a branch on the next one – sometimes arriving on nothing more than a twig, which may bend worryingly downwards under its weight. The squirrel, while visibly perturbed by such an event, quickly clambers to the secure footing on the other tree and can be gone from your sight before you even noticed it was there.

Now the squirrel's capacity to negotiate trees not only exceeds our own, but their knowledge of trees and their surfaces exceeds even our ability to conceptualise an adequate parallel. Next to this arboreal labyrinth, our flat pathways and roads are positively dull exercises in trivial navigation, while the world of the tree squirrels is one of possibilities and intersections along fractal routes they can traverse with consummate skill. It is something that we can only barely imagine: like Thomas Nagel denying we could know what it is like to be a bat[10], the squirrels' experience of trees is fundamentally barred to us. We would not, it is clear, want to describe the sure and certain agility of squirrels as being objective knowledge, no matter how assuredly they traverse it. Yet if the capabil-

ities of squirrels are to be understood as subjective knowledge, we are forced to admit that such knowledge can be every bit as reliable as what is produced by the sciences – and a damn sight more applicable to everyday life!

Suppose we understand objective knowledge in the manner proposed by Isabelle Stengers, as something produced through the painstaking creation of methods of investigation. When scientists manage to produce something that can resist all objections, it forms a reliable witness on some rather narrow topic. Objective knowledge necessarily tends towards this kind of partial quality, and would not by itself be a plausible way of being part of any world: someone who solely understood gravity, quantum mechanics, organic chemistry, and cell mitosis would be thoroughly ill-equipped for life. Such a narrow field of vision inevitably follows from the complex compositions of things that must be coaxed into developing an objectivity for those who are working with them.

Accepting the myopic quality of our various and impressive scientific apparatus makes the contrast between objective and subjective knowledge feel rather claustrophobic… the vast majority of knowledge lacks this quality of objectivity, of belonging to networks of objects that give a voice to something that cannot speak without us. Yet these other, subjective knowledges, while lacking the robustness of their artificially created cousins, are still capable of being reliable witnesses too. We can trust a builder to know how to construct a house, a mechanic to know how to repair an engine, a chef to know how to bake a soufflé, an artist to know how to blend paint to make a certain hue, or a musician to know how to harmonise. Likewise, we can trust a squirrel to climb a tree.

We have all been inculcated into an understanding that subjective knowledge is *unreliable*, a situation that comes out of contrasting it with objective knowledge, which is deemed reliable, essentially by definition. We should not trust our own judgements as they are *merely subjective*, but we should trust what is reported by scientists as this is *objective fact*. (We'll get to facts in a moment). But if reliability is our purpose, sub-

jective knowledge is just as capable of producing it as its cousin, and furthermore the methods that produce objective knowledge are just as capable of error as anything else. Aligning objectivity with reliability, and subjectivity with error, is to simultaneously misunderstand the core qualities of skilful practices while artificially canonising scientific techniques with an unwarranted infallibility that is thoroughly undeserved. As Hilary Putnam was keen to note: "No sane person should believe that something is 'subjective' merely because it cannot be settled beyond controversy."[11]

This dichotomy between the subjective and the objective has been handed down to us over nearly four centuries from original ideas in Descartes' *Meditations on First Philosophy*, first published in 1641, which imagined a thinking subject ("I") and contrasts it to the world of extension and matter it is situated within. Mind is thus contrasted to matter in Descartes proposal, and the fingerprints of this Cartesian dualism are found everywhere today, as Hubert Dreyfus and Charles Taylor observe, even among people who claim to repudiate Descartes[12]. For instance, those who turn against the dualism of mind and matter that was core to Descartes' account often do so by deflating the significance of mind, thus raising matter to centre stage by suggesting mind simply emerges from the action of matter. Such materialist apples have not fallen far from their dualist tree. But then, as Allen Wood suggests, when it comes to philosophy of mind, we are all 'recovering Cartesians'[13].

Drawing against the work of the two pivotal figures of twentieth century philosophy, Martin Heidegger and Ludwig Wittgenstein, Dreyfus and Taylor offer an alternative understanding of our relationship with the world – one that is not based upon our being trapped inside the disconnected mind implied by the famous image of a brain-in-a-vat. They propose instead that we should understand ourselves as *in contact* with the world we live within. Rather than our minds forming images of an 'outside' world that they are forever separated from (the Cartesian mythos of mind versus matter) they suggest that we have a direct encounter

with reality that utterly straddles the supposed divided into subject and object[14].

This *contact theory* (as they term it) is strongly rooted to Heidegger's idea of being-in-the-world[15], and leads to a sense that at the base of those experiences what we usually term 'subjective' is a co-production between a being and the reality it lives within. It certainly counts in favour of this view that it aligns with work in numerous scientific fields, including cognitive science, neurobiology, and artificial intelligence, all of which are drawing away from Descartes and towards Heidegger's perspective under umbrella terms such as 'embodied cognition' and 'enactivism'. Our minds, in the contact view, are engaged in transactions with reality at the centre of which can be found not just our brains but *our entire bodies*. Hence the phrase 'embodied cognition': our minds are not just in our heads, they are in our worlds.

Accepting my understanding of knowledge as a practice, we can see that the kind of subjective knowledges I have suggested here i.e. building, repairing, baking, painting, harmonising – not to mention tree climbing for squirrels – are genuine knowledge practices. They have the reliability that is the sign of knowledge, they produce facts as a side-effect of this reliability, and they are sustained by networks of practitioners. Having come this far down this line of approach, it begins to seem as if the adjective 'subjective' has become empty and vacuous: the knowledge of beings *is knowledge*. Objective knowledge – the knowledge teased from objects – is just a special case of knowledge, not its paradigm case.

If this leads us to a conclusion that feels surprising, or even alien, this is only because we are unaccustomed to recognising knowledge as a practice, and even less comfortable with admitting that other animals can possess knowledge. Still, the squirrels' adroitness with trees must be understood this way if we are honest about their capabilities. Dreyfus and Taylor suggest that blind spots like these come about because we treat subjective experience as if it were a picture generated internally of an external world[16] – the Boxer picture of reality I rejected as incom-

plete on different but parallel grounds above. When we think this way, we are ignoring all the intricate perceptual practices of our living body that Maurice Merleau-Ponty drew attention to[17]. Just seeing an object clearly is a knowledge-practice: we routinely underestimate the skill we possess in such matters, which requires us to pick out an object in a cluttered visual field, bring it into focus, and often to move our body to gain an optimal vantage point.

One objection may spring to mind: that rather than 'knowledge', we should understand the squirrel's competence as *instinct*. But this is to make another of Descartes' errors – to think of animals as mere machines, and thus ignore the way that beings other than humans also possess minds that influence their existence in the short term and, via the chain of inheritance and persistence of advantages, alter their biology in the long term. In this regard, I call to the witness stand the humble rock squirrel, a denizen of the desert plains of Mexico and the south-western United States, whose primary interest to us is their biological similarity to the grey squirrel I recruited as an example above. Despite the rock squirrel being about fifty percent bigger and heavier, the overall physiologies of the two species are notably parallel.

Rock squirrels are perfectly capable of climbing trees, but they seldom do so because they live in arid flatlands. Instead, their elongated claws (which are what help the grey squirrel with its arboreal escapades) are used for digging burrows. The same biological blessing – claws – supports two very different worlds, the climbing world of the tree squirrels and the burrowing world of the ground squirrel. It is not that the grey squirrel and the rock squirrel possess radically different instincts about how to use their claws – they are biologically similar in every key way, and are clearly close relatives. What differs between them are their knowledge-practices and the worlds that these lead to, or – equivalently – the worlds they live in and the knowledge practices that these lead to. It is the grey squirrels' life in and around trees that gives them their competences, just as it is a life around rocks that give their cousins theirs. These lives and worlds are not fixed by biology, awaiting a chance mutation

like a miracle from heaven; there is *always* a new world to be discovered when you leave the trees for the ground, or vice versa.

Knowledge-practices belong to the worlds they are embedded within – that they are embodied within – and to share a knowledge-practice is to share a world. Grey squirrels live with trees, and trees are as much a part of their world as cars, roads, and shoes are to us. Rock squirrels live in yet another world, with different knowledge-practices that belong to that world. Dreyfus and Taylor, developing arguments that parallel mine but proceed upon a thoroughly different line of attack, conclude their investigations by suggesting that realism must be connected to the worlds we are embodied within. Since there are multiple ways to describe nature, any or all of which could possess truth, the only viable realism available to us is what they call a *plural realism*[18]. They took a different path, but one that still ends in what I have called, following both Michael Moorcock and William James, a multiverse. We live in different worlds, we practice different knowledges, but all of us – including the squirrels – live in the same multiverse.

The Seduction of Facts

There remains one thorny and dangerous subject in connection with this idea of a multiverse we all live in, namely the matter of facts. We all, one way or another, have a love for facts of at least some particular kind, if not for facts of all kinds. Indeed, there is an entire genre of games dedicated to our ability to recall them, aptly entitled 'trivia contests' in English. Setting this form up in a box led to one of the most successful boardgames of all time, *Trivial Pursuit*, while dramatising the agonising uncertainties in the face of such questions gave rise to one of the most successful TV game shows of all time, *Who Wants to Be a Millionaire?* Clearly, we love facts. So what could be dangerous about them?

I have already made the case that understanding facts as knowledge is misleading since all facts are the residue of the practices that produced and justified them, and further that it is better to understand knowledge

as a practice, or rather, a collection of practices. Nothing in this arrangement gives us reasons to be suspicious of facts, since all I've done is change the context for understanding what a fact is, and cast doubt that someone who can repeat facts (who has 'general knowledge') is genuinely in possession of something that could be justifiably termed 'knowledge'. Yet there is something significantly misleading about our love of facts whenever it emerges in a political context: facts are invoked as a means of ending discussion, and this is toxic to politics.

The problem is so subtle it would be easy to miss it, and rests with the way we have constructed the relationship between politics and the sciences, a topic repeatedly explored by Bruno Latour[19]. Democratic politics, in the sense of the political practices of the ancient Greeks, was about every citizen having a chance to be heard and decisions being made in a manner that renders everyone equal. Contemporary democracy, needless to say, offers neither of these things. We vote for a representative based upon geographical criteria, and every citizen has the opportunity to speak, but only the famous or those accredited as experts have a chance to be heard, since we have largely eliminated public debate and replaced it with the circus of the abnormal we call 'news'.

What facts offer to contemporary government is a means of circumventing politics, because where 'the facts are known' there is no need for discussion – or so the standing policy goes. This is a tremendously convenient state of affairs for politicians, because they do not need to engage in politics at all (at least, not with the electorate) whenever they have a convenient fact at hand to short circuit any discussions. To make matters worse, those in opposition feel compelled to act as if politics were only a matter of establishing the correct facts, and not about discussing the meaning of those facts, let alone taking into account the practices involved in producing facts in the first place.

Facts are seductive because they remove the need to think, or to talk, about anything. The policy conflicts over climate change circumvent any actual political discussion since it has been reduced to a simple 'battle

for the facts': either human activity has tangibly affected the global climate (fact!) or climate researchers have misrepresented the data (fact!). It's facts versus facts in the arena of public derision, and nobody seems to be quite aware how the focus on 'which facts are true' removes any productive discussion on the topic. We have successfully managed to turn politics into a game show, a sport – and the news, in its commitment to ignoring the familiar and reporting only the unusual, facilitates this narrowing of vision.

As someone who feels very strongly about our worrying relationship to our own world, I've spent a decade watching on in horror as 'climate change' replaces 'global warming' as a means of reinforcing a partisan conflict that is hugely effective at blocking any discussion of the problems of human exploitation of our planet's resources. To make climate change the issue is to pick out one conflict over the facts and fail to have a discussion about the interrelation of dozens of related issues, such as fires in Indonesia that only Al Jazeera paid significant attention to, or the shocking rate of extinctions in our time, which doesn't even qualify as news any more because it's all-too-familiar.

I have suggested that part of this problem comes from continuing to think, as Plato did, about a single real world, when the vast range of knowledge-practices might better be understood as a multiverse, as many real worlds that overlap, or (to use Stengers term) as an *ecology of practices*[20]. There are always different possible maps, Midgley reminds us, and the plurality of knowledge is actually more effective at grasping existence than being able to somehow boil it down to a singular reduction[21]. Facts, in this understanding (as the products of objective knowledge-practices), are what can be translated between maps, or stabilised between worlds, whether through the tremendous work of scientists to produce apparatus that resist objections, or through the deductive work of historians, forensic police, and many more practices besides. What these disparate practices have in common is only that they work with networks of objects and either make them speak or translate what

has been said – this, I'm suggesting (following Stengers) is what we should now understand by the term 'objective'.

Yet the *meaning of facts* is not objective knowledge, and never can be so. That 'smoking causes cancer' is not a reason to stop smoking in itself; you have to start bringing in moral judgements about death, or life expectancy, or perhaps economic judgements about healthcare spending before this fact acquires so specific a meaning. These meanings are not 'mere opinions' that the facts can simply brush aside. The vast open spaces of meaning are something we have to negotiate for ourselves, both individually and collectively, and this process is utterly separate from those practices that give rise to the facts.

Part of this negotiation of meaning is what is, or should be, called politics, and we seem to have lost sight of this. In the fervour to recruit facts that will short circuit discussions and precipitate actions, discussion and debate fall by the wayside. Very convenient for politicians, who alas (like the rest of us) are all-too-readily tempted by quicker and easier paths, but disastrous for politics itself. The politics of our multiverse require very different approaches to those we are used to in part, as Latour suggests, because we have a problem bringing the sciences into discourse with politics.

A concern may appear here about who and what we might be allowing to live alongside us when we accept that we live in a multiverse and not just a universe. Regardless of the ethical standards we use to make the judgement, we judge some ways of acting as evil, and even if there was a knowledge-practice entailed (such as bombing civilians, whether as a terrorist or as a nation-state) we might find it abhorrent and refuse to honour it. But if we exclude those *people* who are acting in these ways from being part of our politics, they can have no possible reason to change what they are doing and will thus continue doing evil. Diplomacy is far harder than violence and precisely the problem with the collision between the factual and the political is that diplomacy ceases to be an option at all. Worse, our horror at the abominable acts of others becomes

our justification for behaving horrifically. Every time we exclude even the possibility of conversation, the radical potential for politics to change our worlds is lost.

Facts become weapons in your arsenal as soon as politics is conceived of as warfare; an enemy to defeat, rather than fellow citizens with whom we are sharing worlds and knowledge practices. This *Politics-as-war*[22] blurs the lines between violence, morality, and right, and thus destroys all political possibilities entirely if by 'politics' we mean the discourse that establishes how we will live together[23]. The fact wielded as a weapon forces our fellow citizens to be either 'with us or against us' – they have no choice but to be either our ally or our enemy. What would they be if instead we acknowledged our common residency of a multiverse?

You could be forgiven for thinking that I am against facts, that they don't matter to me, or that I want to make all facts entirely relative. But I am actually intensely serious about factual knowledge, for all that I recognise that it is often, as the phrase 'trivia' implies, trivial. It annoys me when my son's picture book mislabels a newt as a lizard, or his book about sea creatures has a picture of a red-eared terrapin, which only lives in fresh water. They got the facts wrong, and that bothers me, just as it would bother any other nerd who has ever edited a Wikipedia page in earnest, or written an entry for a paper encyclopaedia. But it bothers me far more that we get politics wrong by thinking it is a solely a question of establishing the facts. The facts by themselves aren't enough: we need to establish the *meaning* of the facts. And that is something that cannot be done on our behalf; we must do it ourselves, and ideally, we should do it together.

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3

Can Experts Make Reliable Judgments?

If an expert is someone whose knowledge makes them a reliable witness on the subject in question, what happens when experts disagree? The image of a universe suggested that one must be right and the other wrong, but the idea of 'stitching' together different accounts, and the corresponding image of a multiverse of different-but-relatable real worlds, offers an alternative solution to dissenting claims. Two accounts might appear to diverge yet still become compatible when their context had been fully understood, once the facts revealed by the relevant knowledge-practices can be properly related. Yet how can an expert simultaneously claim reliable judgement and a capacity for disagreement with other experts? Surely somebody must have the rightanswer!

While some clashes between experts happen publically, in news programmes, for instance, the majority of situations where a conflict of expertise occurs today are hidden from public view. Such disagreements occur behind the veil of secrecy that has been erected over the assessment of written scholarly reports, a process that is known as *peer review*. The majority of the judgements being made occur with anonymity – the identity of the people making the assessment are concealed from the authors in question. This anonymous peer review is supposed to have the effect of rendering more reliable judgements. But there is a confusion here that mirrors the problems already revealed about knowledge and real worlds.

Earlier this year, I received a notification from one of the conferences for which I act as a peer reviewer, raising the important issue of disclos-

ing any potential conflicts of interest. Much of the content of this message merely laid out obvious instances where my judgement might be impaired by bias – a colleague I work with, for instance, or a former student. But the eighth and final clause made a much wider claim about possible conflicts of interest, asking that I must declare a conflict if the author of a paper I was reviewing was "someone about whom, for whatever reason, their work cannot be evaluated objectively."

I immediately wrote to the person in charge of the conference track I was reviewing for and asked:

> Since I do not believe that humanities work can be evaluated objectively (and I have severe questions about whether scientific work can), clause 8 applies for me to *all* possible people. Do you wish me to recuse myself from peer review on these grounds?[1]

The argument I have been advancing in this book makes it clear why I would balk at being asked to vouch for my capacity to objectively review a humanities paper. Since objective knowledge, following Isabelle Stengers, is the result of getting an object to talk through the development of a suitable apparatus (i.e. the creation of spokespeople for objects), the idea of objectively evaluating any piece of human writing is farcical. We could count the number of words, but beyond such trivial facts the assessment of written discourse is not something that can belong to the domain of objective knowledge – and this claim is not dependent upon Stengers' understanding of objectivity.

One of my principal concerns about acquiring a doctorate, which I did a few years ago on the basis of books I had already published, was that assigning some people the rank of 'doctor' seems to undermine the basis of equality. If some of us are doctors and some of us aren't, we no longer seem to be equal. We have created 'superior' and 'inferior' people, at least in the context of knowledge. If this seems an overly paranoid perspective, it is worth extending this concern about equality to the entire notion of an expert: most of us are committed to some kind of ideal of human equality, but as the preceding discussion of facts makes clear, our

political equality is undermined if not everybody is recognised as having a grasp on the facts. Against that, our entire concept of knowledge unravels if we do not recognise that some knowledge-practices provide a reliable grasp that is not available to everyone.

There are two different problems to address here. The first is the question of whether experts can be equals to one another, whether or not the concept of an expert leads us to a ranking of expertise that undermines our notions of equality, or equivalently whether experts can make reliable judgements about each other's work, and if they can, under what conditions this is reliability encouraged. This is the problem I want to examine in this section. Related to this, however, is the wider problem of whether the very existence of experts creates inequality between their 'superior knowledge' and whatever we wish to call non-experts. This latter concern is one that I will attempt to address in the final section of the book.

To begin with, we must think through the question of how any two experts within any given field of enquiry or practice might be considered equal. Equality, a mathematical concept, is based upon the idea of sameness of quantity, degree, or value, and the idea that two things are equal suggests an equivalence. But if we take any two experts, the knowledge-practices they have acquired will be different in a vast number of ways – even if their expertise is putatively on the same subject. The issue of whether experts can make reliable judgements then suggests another question: if knowledge is a practice, and if there are many real worlds, how can two experts be judged equal?

Our interest in equality is a gift that we have inherited from the preceding centuries, but like the Golden Apple that Eris rolled into the marriage of Peleus and Thetis, this gift is also a source of discord. The problem here relates to the fundamental fact of existence that *no two beings are equal in the sense of being the same* – if they were, they would not be different entities. So the ideal of equality requires on the one hand that we understand the sense in which we can claim two utterly different things are equal, which is always open to dispute, and on the other the recogni-

tion that all equality comes by collecting some things and not others, that equality is always simultaneously inclusion and exclusion[2].

In the context of expertise, this hornet's nest becomes even more complicated since, as already noted, to be recognised as an expert is to gain a capacity to speak that surpasses that of everyone else who is not famous. I'm going to suggest that it is fame that is the point here; a *famous* expert will be listened to more readily than one who is unknown, an observation that seems trivial until we begin to consider how fame relates to the possession of knowledge-practices. We seem to face impossible contradictions within the ideal of equality: experts are not equal to one another, because some are famous and some are not, and what's more the whole concept of an expert seems to undermine equality, since an expert is someone whose judgement we should trust, and thus there is an inference that the judgements of non-experts either cannot be trusted, or cannot be known to be trustworthy.

I hope it's clear why we might have cause for concern in this regard. If we are committed to equality, we need to spend some time understanding what we mean by it and determining which equalities are worth defending. In this regard, it is worth remembering that not all philosophers are in support of equality – Nietzsche in particular found it offensive, suggesting it was "the most profound levelling down to mediocrity"[3]. I have great respect for Nietzsche, but concur with James Wilson that his concerns about morality as resentment do not rule out a moral equality of affirmation[4]. We can learn from Nietzsche without agreeing with everything he says – as indeed might be true of everyone else, perhaps even everything else.

To unravel the question of equality between experts, and to begin to consider whether this equality could occur without the exclusion of everyone else, we need to look at the ways that experts talk to one another, and we need to compare this to a situation where discourse occurs *as if we were equals*. We have to ask: if we are indeed equals in some as-yet-undefined sense, where do we succeed in communicating with one

another in a manner that supports that equality? For this task, I want to compare the discourse which aided the development of our contemporary notions of equality with a form of conversation that is as unique to our time as the Wikipedia.

A Republic of Bloggers

During the Enlightenment, at the end of the 17th century and the start of the 18th, a disparate group of intellectuals in Europe and the United States engaged in a long-distance discourse that became known as the Republic of Letters, or *Respublica Literaria*. It was one of the first transnational movements, as well as one of the first opportunities for women to come into intellectual congress with each other and with men[5]. Scholars have endlessly debated its relevance and influence upon the dramatically proclaimed Age of Enlightenment it heralded. Personally, I feel no need to explain this in terms of cause and effect – the Republic of Letters was simply the written discourse of a disparate community bound up with a transformation of the way people thought about their relationship with their world and with each other.

It is a seldom noticed fact that while anyone who can read and write *could* write a letter, very few actually do – and fewer still in our current era, what it is tempting to call the Age of Distraction. Letters, rather than (say) postcards and other friendly waves expressed in writing, involve a kind of engagement that has become rather rare these days. A letter invites a response, asks us to think about something, requests insight from another perspective… Letters are conversations at a slow enough pace to allow the correspondents to think about what they are saying. I would like to suggest that it takes a particular kind of introvert to engage in letter writing in this sense – a quiet soul not content to bury themselves in just their solitary activities, but willing and able to reach out in words to another, similar person. I love a good conversation in a pub or bar, or at a conference, or even on a long journey, but as enjoyable as these forms of discourse may be for me they cannot adequately substitute for the pleasure of letters.

Up until 2000, I wrote letters extensively – to old school and university friends, to my lover (now my wife), to family… After this, I began to fall out of the habit for various reasons – partly reflective of a change in my circumstances (to that of both husband and company-owner), but also mirroring the gradual replacement of pen-and-paper with email and text messages, and the demise of the post office as the bastion of communication in the wake of the digital connectivity of homes. The supplanting of the letter by these other digital forms of writing almost escaped my notice precisely because I had never stopped *writing*, even though I was starting to lose touch with *communicating*, at least in a written form.

Yet in 2005, that all changed. A friend of mine from my time in London insisted I should try blogging. He could not give me any well-defined reasons for my doing so, it was more of an intuition. In July, I took the plunge and began writing a blog most mornings, more or less stream-of-consciousness. But in no time at all, I was engaging with other bloggers – discussing shared interests, exchanging ideas, and (perhaps most surprisingly) arguing productively – something the UseNet forums of the preceding decade had never managed to deliver. When you trap a bunch of geeks inside a virtual room, sparks soon begin to fly, and before you know it it's bedlam. But the blog was a more personal format – it clearly belonged to one voice while being open to everyone to participate. While vicious arguments did occasionally break out, the blog owner could draw these away with new posts, and disgruntled visitors did not have the equal territorial claim of a forum and thus eventually fell silent.

I had joined what I came to term 'the Republic of Bloggers', but it was already there when I arrived. I cannot even take credit for the name, since one of the regular voices at my blog explicitly drew my attention to the connectivity between blogs and the Republic of Letters. A scattering of intellectuals across the globe, engaged in discourse on almost every conceivable topic, listening to and speaking their minds. It was an incredible, heady experience, one that I still treasure to this day. I have taken to calling the exchanges we had a form of *virtuous discourse*, to mark

not just the demeanour of our discussions but also its openness – anyone could listen into our conversations and, if so moved, join in.

However, over the years I began to move away from discourse and into monologue. The blog became a place to draft material that would end up in books and papers, and the sense of an exchange of letters fell away. This was doubly unfortunate for me, since at this point I had also ceased to write letters, except to my favourite aunt, who sadly passed away a few years ago. Although I have blamed the decline of the blog clusters upon the rise of more immediate (and shallower) forms of communication such as Facebook and Twitter, there was another factor I had not considered: we just stopped talking to each other. We were seduced by the simple validation that the social networks gave us, we began scoring shares and retweets instead of communicating for the sake of the discourse itself.

This idea, of discourse for its own sake, is one that has become alien today. This is especially true of academics, who are amongst those people who are paid (at least in part) to write, but who are uniquely tasked – particularly in the UK – to *justify* their writing, to make a case that their discourse is worthwhile. The idea that it might be good for a society or culture to have those of us who have developed the knowledge-practices associated with books to actually talk to one another, to have a discussion, a debate, an opportunity for an exchange of ideas has been pushed out of consideration by a demand to prove the benefits of scholarship: to humanity as an abstract, to a nation, or to an institution – whichever rhetoric happens to be demanded.

Yet might not free discussion in itself have a value – a virtue, present in its exercise? This idea is close to forbidden, even though most academics already earn their keep through teaching students, and their writing and reading serves to further this aspect of our jobs. Indeed, this prohibition is not unique to the academy, for free discussion is actually terribly hard to find these days. I have already mentioned the problem that unless you are certified as an expert or happen to have acquired the double-edged

sword of fame, your voice is not one that is likely to be heard outside of your local context. In this regard, those who can write letters, or can hold a written discourse, are the keepers of something precious – the inheritors of the Republic of Letters. Both of these communities are a locus for virtuous discourse, and this is something worth both defending and encouraging, especially at a time when it has become painfully rare.

The virtuous discourse of the Republic of Letters in the eighteenth century represented a free and anarchic process that can be contrasted quite dramatically to the discipline and order of the Royal Academies of the same era. Indeed, there were some attempts in Paris to subsume the former into the latter, although this was not at the time successful[6]. The contrast appears even more drastic when considered in the context of the foundation of these learned societies in the preceding century. They appeared at a time when the publication of books was subject to direct scrutiny and censorship from the crown, and the Royal Academies were in fact the first institutions to be permitted to publish books independently of such oversight – but only because the texts in questions were reviewed by the societies for suitability. Even this allowance was only granted because the discussions in question were considered politically marginal, and of limited interest[7].

This is the origin of the aforementioned practice of peer review. It grew out of the conditions of censorship under royal rule, which gradually transformed into a risk-control process to protect the Royal Academies from the potentially disastrous consequences of publishing something that might cause their charter from the crown to be withdrawn[8]. 'Peer' in these original situations is more closely related to the concept of a 'Peer of the Realm' than a supposed equal. In this respect, the peer review process at the time of the Republic of Letters is radically disconnected from today's academic peer review, the rhetoric of which is more concerned about claims of objective assessment of content that my preceding discussion has hopefully already rendered suspect.

Throughout its history, peer review has never lost its role in disciplining

the discourses that fall under its purview, a matter that connects to the questions concerning the exercise of power raised by Michel Foucault[9]. These issues remain relevant today, for reasons that warrant closer examination. At stake here is the question of whether 'peer review' really does imply a community of equals, and if it does who is included and who excluded. Against even the possibility of academic peers being considered equals is the risk that peer review might never have lost its genealogical connection with the censorship it grew out of. There is a possibility, perhaps hard to bring into adequate focus, that academic peer review even now, in at least some of its forms, might be using an implausible rhetoric of objective truth in order to apply a nefarious kind of censorship that prevents it from being a form of virtuous discourse.

Hiding Behind Masks

While the origins of anonymous peer review practices are still a matter of some uncertainty, there is a general consensus that it appeared and spread after World War II[10]. We can see in the peer review guidelines I mentioned at the start of this section something of the motive for bringing anonymity into play: the idea that knowing the identity of the author might bring in bias. If you know that a paper was authored by Einstein, you might be unwilling to criticise the work for fear of the consequences of impugning such an august figure. That said, the only time Einstein was submitted to peer review, the reviewer in question had no problem providing ten pages of criticism, a situation that offended Einstein and caused him to withdraw his paper from the journal in question and never write for it again[11].

There are two kinds of anonymous peer review practices in use today for journals and conferences. *Single blind peer review* occurs when the reviewer's identities are hidden from the author – this is what happened to Einstein. *Double-blind peer review* occurs when the author's identity is also hidden from the reviewers – this is what I was involved in when I read the note about 'objective evaluation'. While both practices are in widespread use, the later is particularly common and none of the jour-

nals I've worked with, and only a small number of the conferences I've attended, use anything other than double-blind peer review. If double-blind is justified by the rhetoric of bias, single blind is justified by protecting the reviewers from influence or recriminations by the authors. Either way, anonymity is predicated on the idea that peer review is either more objective, or fairer, when it occurs under a veil of secrecy.

It is easy to imagine some possible intuitions that might set up these kinds of thoughts. If humans are naturally biased because subjective knowledge is inherently unreliable, and if academic discourse aims at truth, we ought to take steps to offset that bias. From here, we get to the idea of peer review as a system of checks and balances, and from this the idea that anonymous review will necessarily be fairer – a rhetoric that almost always appears wherever double blind review is defended. As recently as 2014, the high profile science journal *Nature* was quoted as saying: "It makes the review process a bit more scientific… Removing the opportunity for subconscious bias is a good thing."[12] It is worth remembering that scientific *experiments* had already adopted double-blind procedures to help eliminate bias in their results: adding this protocol to publishing probably seemed like a logical extension.

The anonymity is far harder to justify in the context of the humanities. Whatever reasons might be given would seem to depend upon copying the justification provided within the sciences, whose methods are very different in form. This entire line of reasoning seems to run on the assumption that we will not give an honest appraisal of work by someone whom we are dealing with in the manner of a face-to-face exchange, but we will talk honestly behind their back – that gossip is more candid than conversation. There might be something to that intuition… we often lack the courage to confront those around us on certain issues, and it is certainly easier and safer to mouth off when the people being spoken about aren't listening. The comparison with gossip ought to give us pause, though: the other thing we gain when we are talking *about* someone and not *to* them is a freedom to unleash our petty hatreds.

I study play and games, and I have another perspective to bring to bear on this issue. From the text-based worlds of the MUDs in the 1990s[13] through to the competitive communities around gun games today, online worlds afford their players an anonymity that permits the most atrocious behaviour to occur[14]. Shielded by a virtual mask, we feel disconnected from consequences and more free to act on our impulses. This is by no means a certain consequence; it is more of a risk. But anyone who has played online will have seen that the treatment of other players is frequently harsh and unpleasant when anonymity is in play. What offsets this is when players form their own communities, as happened in the MUDs and happens now in their successors, graphical worlds like those of *World of Warcraft* (Blizzard, 2004). Identifying with a group helps stabilise cordial relationships. When nothing like this occurs, the power relations become unstable and we get what is called in games 'griefing'[15] and in social media 'cyberbullying'[16].

The Wikipedia has a parallel story to tell. Anonymous accounts have consistently been shown to be responsible for the majority of the vandalism upon its pages[17]. Anonymous editors "constitute a controversial group within the Wikipedian community"[18] precisely because those that wish to cause harm to the project are bound to use the mask of anonymity to do so. This situation has resulted in considerable animosity towards anonymous editors, but eliminating this possibility not only undercuts the promise of being a text that 'anyone can edit', it actively precludes involvement from anyone whose circumstances make it dangerous to be identified (e.g. political radicals living in oppressive regimes). Paul de Laat argues against eliminating anonymity precisely because "Wikipedia is founded on a social contract that considers registered and non-registered contributors as equal citizens"[19]. This is a point that will have to wait for the next chapter.

There is a somewhat romantic aspect to the way we view masks today that can be seen most clearly in our superhero mythos, where the protagonists wear masks to protect their identity. If they do not (the internal story logic claims), their families and loved ones would be at risk from

reprisals from the supervillains (who are also masked). These stories descend from the pulp novels of the early twentieth century with masked heroes such as Zorro and the Scarlet Pimpernel. Prior to this, masked characters are ubiquitously outlaws, such as highwaymen. It is noteworthy that while we have plenty of masked criminals today, we have no masked heroes, and law enforcement officers and judges are always publically identified. I doubt this is a coincidence. Fictional masked heroes are imbued with a mythological degree of virtue that allows them to act as heroes despite their anonymous circumstances. Real humans find behaving virtuously to be far more challenging.

Anonymous peer review might be the only widespread situation where the romantic idea of the protection of a mask distracts us from the risks of bad behaviour that goes with a concealed identity. Yet it is not that we have failed to recognise the problems with these masks. Indeed, there is a growing sense of concern about the situation we have let happen, and of the problems that secrecy engenders, almost all of which rest on the lack of accountability that occurs because the reviewer has all the power and is shielded from the consequences of their actions[20]. There are reports of reviewers intentionally blocking work they disagree with, disproportionately approving the work of researchers with similar agendas, and even stealing ideas from the work they have been assigned to review[21].

The concerns about anonymous peer review have been growing for some twenty years now, yet change is slow to come. The atmosphere in this regard is reflected in a recent report by the British Academy that concludes, without a trace of irony, that despite the current arrangements being time-consuming, costly, and biased against innovation, there are "no better alternatives". This kind of statement is what Stengers and her chemist colleague Philippe Pignarre call an *infernal alternative*[22]. These are situations where a prevailing state of affairs cannot be challenged except by merely noting that, yes, it's a bad arrangement, but what choice do we have? Whether we are talking about representational democracy, welfare reform, free market economics, capitalist production, or indeed anonymous peer review, we are only offered infernal alternatives.

I cannot hope to address all of the issues that this question of infernal alternatives raises, but it is clear that it not only kills politics by accepting the status quo as 'inevitable' but it also denies our creative imagination with respect to the challenges we face. Indeed, the central difficulty with the masks of anonymous peer review is precisely that we *do not* face its problems at all, but rather refuse to look those others we are engaging with in the eye. Once we understand that objective knowledge is not a plausible way of understanding human judgement, we have to question those practices that invoke this mythos to justify their continuation. We should be especially suspicious whenever decisions are being cloaked in secrecy.

While the British Academy may have offered an infernal alternative in respect of anonymous peer review, their failure of imagination is not universal. Economists were one of the first disciplines to investigate what others merely assumed, and concluded that double-blind peer review's main effects were lower rates of acceptance and more hostile reports on what had been submitted[23]. Anonymity did not affect the acceptance of work by women (an alleged benefit of concealing the author's identity), and in slightly under half of the cases it was possible for the reviewer to establish the identity of the author despite the blind protocol[24].

The British Medical Journal recently conducted its own research into the topic and explored what happens when reviewers are told that their signed reviews will be publically available for scrutiny. They found that this provision had no significant effect on the quality of the reviews offered, although it did cause many peer reviewers to decline to participate, and increased the time it took to write reports[25]. These side effects are surely to be expected (it certainly takes longer to understand an author's argument than to dismiss it!) but can hardly constitute a reason for refusing to take this path. If the mask of the reviewer creates the conditions for indolent or scurrilous behaviour, we should expect fewer reviewers to want to participate. Yet a failure of courage on the part of the academic community should not be used to shore up the infernal

alternative: it should demonstrate the importance of exploring a different approach.

There is now a growing resistance to anonymous peer review that carries with it the hope of escaping the infernal alternative and restoring to the academy the concept of community and the possibility of virtuous discourse. The aforementioned British Medical Journal report concluded that the ethical arguments overweighed the disadvantages[26], and this view has been mirrored elsewhere. Digital journals like *Kairos* have developed review methods that entail protracted discussions about submissions that are not publically shared, but the identities of its board are at least provided and thus not protected by a mask of anonymity[27]. This is another form of virtuous discourse, in this case *about* the submissions, and those that are judged as suitable for publication are assigned a 'coach' to work with the author to bring up the quality of writing or otherwise address issues without the exchanges being veiled in secrecy.

Similarly, Kathleen Fitzpatrick has not only recognised the problem of the infernal alternative that accompanies reform of peer review[28] but has suggested an alternative system of peer-to-peer review as an open, digitally-empowered alternative to the prevailing practices[29]. Drawing on the work of Bill Readings, she suggests that the anonymous peer review model is oppressive, bringing about a forced agreement about standards and an ability to hide behind concealed notions of excellence[30]. She makes the case that if scholarly discourse claims to value openness, we have a duty to enact it. Aaron J. Barlow goes further: "Blind peer review is dead. It just doesn't know it yet."[31] While the forms of *open peer review* that might be adopted are still being invented and discussed, the process of supplanting the immoral practice of anonymous peer review has already begun, putting academics back into virtuous discourse, and thus onto equal footing with one another.

The Justice of Transparency

We are not equal if we are hidden behind a mask of secrecy: anonymity

affords power to the reviewer and curses the author with a powerlessness stemming from the lack of accountability shielding their judge. Masked or not, we cannot count upon humans to make perfect judgements because the deployment of our knowledge-practices to make *decisions* is never a form of objective knowledge, never the result of getting objects to talk. Indeed, those who think that reducing a situation to, say, numbers, is a way to think objectively are confused: such people are exercising a particularly narrow and dangerous kind of subjectivity. If we want our experts to make anything close to reliable judgements about each other's work, we must expect those judgements to be open to scrutiny, however this is to be achieved, because it is only through responding to appropriate challenges that reliability can be successfully attained.

This was a point raised, in a radically different context, by the Enlightenment philosopher Immanuel Kant, himself a part of the Republic of Letters that pursued virtuous discourse long before blogs had even been conceived. He spoke of a 'principle of publicity'[32], but since publicity now has a different implication it might be clearer to think of this as Kant's *transparency principle*. Domingo García-Marzá clarifies Kant's idea by suggesting it requires institutions to commit both to a minimum requirement – that no policy be pursued in secret if making it public knowledge would provoke inevitable objections (the negative formulation) – and an ideal to achieve, namely that just policies should pursue a search for agreement that must take place through communal discussion (the positive formulation)[33]. As García-Marzá explains, the purpose of the transparency principle is the pursuit of trust, which all just institutions must work towards or else violate Kant's moral demand for mutual respect[34].

The negative formulation offers a clear indictment of anonymous peer review. According to this version of the transparency principle, any action that could not be viably conducted if its motivations and purposes were made public is inherently injust. Kant's own point concerned the secret activities of nations – a matter that is even more important today than it was in Kant's time – but his principle applies just as saliently to

peer review. We know that the masks of anonymity are being used, in at least some cases, to act in ways that would not be tolerated were they to be made public. This is a clear violation of the transparency principle.

It is worth noting that there *could* still be a case for offering anonymity to the author and not to the reviewer – since it is not entirely clear that the author has any capacity for abuse in concealing their identity. Someone who felt that they could not be judged fairly because (say) they were from an institution with a bad reputation, or who feared their race or gender would provoke misjudgements, might have reasons to choose anonymity. But one of the problems with double-blind peer review in practice is that because it *requires* the mask, it asks the author in many situations to *lie* about their work. To make a paper anonymous means to erase the connections between previous publications and current work, and this creates a strange logic whereby deception is supposed to lead (according to the prevailing mythos of peer review) to objective truth. If the transparency principle is accepted, the *choice* to submit a paper anonymously could be just, but the *requirement* for anonymity appears to go too far, and for the peer reviewers (as already noted) even this choice ought not to be offered.

Some objections ought to be considered. Doesn't this demand for transparency just render all secret activities illicit? This is not the case. The transparency principle only asks that we consider thought experiments regarding the effect of making policies (Kant says 'maxims') public. A secret ballot rests on a policy of allowing individual voters to keep private whom they wished to support: making this policy public has no effect on our judgement of secret ballots. Indeed, we know full well this is the policy being pursued, and we endorse it. The concept of a secret ballot supports trust, rather than undermines it; there is no inherent conflict with the transparency principle here. Along similar lines, optional anonymity of an author in peer review might be something we can accept since we might judge it fair that they can choose this option, but hiding the identities of reviewers invites abuse and ought to be excluded from consideration.

Axel Gosseries suggests a rather different kind of problem: if Kant's principle is a test for justice based on whether transparency is self-defeating for a policy, isn't it odd that a police raid on a criminal organisation occurring on a specific day would fail the test, since it would be self-defeating to publicise the date that such a raid were to occur?[35] Here, the problem (as Gosseries recognises) is that the policy has been made too specific. But it would be rather odd to declare a policy of secret raids on criminals that came with a fixed list of dates. The purpose of the transparency principle is only to set a minimum bar for actions conducted in secret: that public knowledge of the *policy* would not produce objections. That said, we should always be careful when using the kind of formulations Kant provides as a 'sausage machine' for calculating ethics, as Allen Wood has warned[36]. Just institutions, as García-Marzá explains, come from the search for agreement, and never from mere calculation.

The moment I began to suspect that anonymous peer review might be a fundamentally immoral practice, I began to append to my own reports a notice to those who had asked me to conduct the peer review stating my willingness to be identified to those whose work I have assessed. Knowing this was even a possibility encouraged me to work harder on my peer reviews, to ensure I understood the authors' arguments, and to make certain that my report would make a reliable judgement of the suitability of the paper in question for the respective journal or conference. More than this, it all but guaranteed that I would have to treat the authors with respect, that we would work together co-operatively for a better outcome. Even in the sciences, where double-blind peer review remains popular, the evidence demonstrates that co-operative, open review produces greater co-operation and reduces the risk of reviewing errors[37]. Anonymous peer review has the opposite effect: it permits inequitable power relations between those involved, and undermines trust in its own policy of secrecy every time an unreliable judgement has been rendered.

The principal counter-argument that can be mounted against open peer review depends upon the idea of bias being prevented by concealing

identities. Yet it is only concealing the author's identity that could help eliminate bias, and anonymous peer review is currently based around anonymous *reviewers*. Besides, we have already seen that bias can thrive under the mask of anonymity. Demanding reviewer secrecy to prevent bias is like asking the fox to guard the hen house: even if we could find a fox virtuous enough to resist the inevitable temptation, we'd still want to keep a watchful eye. Open peer review may be harder for academics to accept – it means their evaluations will be available for scrutiny, which is certainly more unsettling than making judgements in private. But if a scholar is not virtuous enough to write reports that can be made public in this way, we can scarcely expect them to be on their best behaviour when their assessments are kept secret.

Although it may not be readily apparent, our image of a universe is once again what has got us into trouble. For as long as the application of knowledge-practices is to be assessed against a single real world, everything appears to have a single right answer. But even if every question *had* a single right answer, it would not be the case that a single *method* would provide the sole means of establishing that answer. What's more, given the recognition that meaning is something more than mere objective knowledge, every question of meaning can have more than one correct answer. Objects have facts to give us, but meanings are what *beings* provide to facts – and the worlds in which these meanings find their sense are just as real as the imagined world of facts that intersects them. To think otherwise is to misunderstand what meaningfulness entails.

We can count upon those who have worked on perfecting their knowledge-practices to be reliable witnesses who can provide answers to questions of the kinds they have learned how to answer. But we should expect that different knowledge-practices that have distinct methods for answering those questions will sometimes disagree, even when the subject matter is identical. In a universe of brute facts, this situation was untenable and intolerable. But in an ecology of practices, a plurality of realisms, or a multiverse of real worlds, disagreement is always a first step in a new discourse – it is never its end.

Notes

1. Personal correspondence with Petri Lankoski, 11th February 2016.
2. Bateman (2014), section "Equality as Exclusion", pp208-215.
3. Nietzsche, Friedrich (1887). *The Gay Science, 2nd Edition*, translated by Walter Kaufmann [1974], New York, NY: Vintage, section 377.
4. Wilson, James (2007). "Nietzsche and Equality" in *Nietzsche and Ethics*, edited by Gudrun von Tevenar. Oxford: Peter Lang, pp221-240.
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4

Where Can We Find Equality?

Our ideals of equality are among the most important moral and political concepts today. Appeals to equality are used in attempts to defend against prejudice and discrimination, to demand better treatment in employment or education, and even to indict the existing state of affairs as intolerable and in need of overthrowing. These ideals are simultaneously deployed to bring about horrendous injustices – as when war and extermination are conducted with a justification of pursuing human rights[1], which are founded on a concept of equal treatment. The stakes of misunderstanding equality can literally be life and death. We ought to be as clear as we can which kinds of equality are worth pursuing. Where, in the chaotic disagreements of contemporary politics, can we actually find equality?

My father was a tremendously practical man, and I was always a great admirer of his competence. He had served as a mechanic in the RAF, and had serviced the great Sunderland flying boats at Castle Archdale, although long after their pivotal role in locating the Bismarck. After mustering out, he serviced vans for the post office and also worked for a while as a butcher. When I was growing up, he ran a handyman service, and indeed to my knowledge he never once had to hire a tradesman to work on our house because he could act as builder, joiner, plumber, electrician, and painter and decorator – not to mention grow his own fruit and vegetables, make jam and wine, farm chickens, maintain and rebuilt all kinds of mechanical device, and probably many more skills that I have forgotten.

I, on the other hand, have spent my life with books and games of all kinds, and almost all my competences have to do with the manipulation of words and ideas. I can write and edit documents at a level of skill that has allowed me to make a living from doing so, and I have also acquired considerable experience of different kinds of play and games, having established myself as an expert game designer, writer and consultant. In the last two decades, I've read so much philosophy that I find it difficult to remember what it was like to think non-philosophically about certain topics. I acquired a Bachelors and a Masters degree in computer science, and on the basis of my books I was able to be declared a 'doctor', adding a PhD to the end of my name.

My father and I could not have possessed more radically different knowledge-practices. He was the quintessential generalist, able to thrive in any practical situation, and far less dependent upon the support of others than I am on a day-to-day basis. I am the archetypical expert, specialised in my own peculiar topics, and certified by the education system all the way to the top of ladder. My father was proud of my academic achievements – he was more thrilled about my university graduation than I was, and would have been delighted at my earning the doctorate if he had lived to see it. But I was also extremely proud of my father's achievements, both in terms of his self-sufficiency, and also as a dedicated family man and a respected member of his community, whom he loved and who loved him.

When we think about equality we tend to think of it as applying to the social world that exists between us – as requiring our common treatment (equal rights), as providing open access to life options (equality of opportunity), or perhaps as ensuring we all get a fair share (equality of outcome). Equality on these kinds of understandings is a political concept, something that shapes the way we inter-relate. Political equality entails a fundamental recognition of *inequality*, that we start with different capabilities, different resources, different liabilities, and thus the drive for equality (in its various forms) serves to offset the differences and create a state of equality. So, for instance, the support given to people

who are deemed 'disabled' is often justified as levelling the playing field, adding equality where previously there was only differences.

I want to offer a radically different understanding of equality. I want to suggest – as strange as it may sound – that my father and I were *equal in intelligence*. This runs utterly contrary to the way we have learned to judge intellectual capacity. After all, I have every academic qualification available, while my father did not to my knowledge possess anything other than basic school certificates. Surely, I must be judged to have a superior intellect – everyone tells me I'm incredibly smart, after all – and thus (although we politely decline to say it aloud) that my father had an *inferior* intellect. That is the order of the world we have been placed within (this line of thinking goes), and thus why we must commit to building an equal society – so that these advantages and disadvantages can be balanced away in the pursuit of fairness.

No, I cannot accept that. My father may have acquired different skills, his knowledge-practices may have been very different from mine, but to suggest that the way he used his mind and body inherently means he was *less intelligent* than me is to take a very specific concept of intelligence and make it into a mythos, a metaphysical picture, an untestable postulate that has become unchallenged precisely because we have lost our ability to recognise it, much less question it. Our entire education system, from nursery to school, from high school to university, is built upon the idea that there is a hierarchy of intelligence to be uncovered, one which requires us to sort our children according to their innate mental faculties. Whether we're talking about grammar schools in the UK or grading curves in the US, the mythos of intellectual inequality pervades the very concept of education today.

Against the prevailing mythos, I want to offer a different picture, one that I take from the philosopher Jacques Rancière, who in turn was inspired by an eighteenth and nineteenth century French educator named Joseph Jacotot[2]. Jacotot is another figure from the Age of Enlightenment, the era which has bequeathed us this intense interest in equality. He was

an advocate for what he called ‘intellectual emancipation’, which was founded upon the idea – the discovery, really – that education need never involve explanation, and that when it did, there was always a risk that the ability to understand the specific form of explanation (the teacher’s method of explaining) would outstrip the importance of any actual learning. Jacotot discovered that it was possible to teach anything – even what you yourself do not know! – provided the process of learning was properly understood.

Rancière is acutely aware of the sense of madness that accompanies the suggestion of *equality of intelligence*. Considering the performance of children in schools as alleged evidence for unequal intelligence, he notes that the key objection is voiced by saying that it is a fact that one child succeeds better than another in school, and that therefore the child who enjoys this success must be more intelligent. But, Rancière shrewdly observes, this ‘therefore’ implies a causal connection between two different facts, and here we have only one[3]. ‘More intelligent’ is not an explanation for success in school, it is merely another name for academic success, and renaming facts is not even close to objective knowledge. It is at best a metaphor for them, and at worst an empty assertion.

What we have here is merely circular reasoning: to be intelligent means to succeed in school, so anyone who does not succeed in school is not intelligent. But we already have our doubts about this formula, because we have long since realised that ‘standard testing’ ignores the immense differences in our worlds[4], and we also suspect that everyone learns in different ways, even if every attempt to formulate this recognition has fallen down against the challenges involved in teasing out objective knowledge when it is about beings like us[5].

Far easier to turn an electron into a reliable witness than to make human learning a topic for objective knowledge! That’s why psychology has hit something of a crisis of faith in itself[6]: it’s not really worked out what it is supposed to be a spokesperson *for*, what its knowledge-practices can successfully render reliable. It’s not that there have not been great suc-

cess stories in psychology – Leon Festinger's theory of cognitive dissonance[7], Robert Fantz's work in infant perception[8], and Paul Ekman's stunning work on emotions are all among the great research projects of the previous century[9]. It's just that too many psychological experiments have been taken at face value, or have drawn premature conclusions from fairly thin statistical data. Not enough work has been done to make the apparatus resist objections.

Instead of buying into the mythos of 'superior' and 'inferior' people that expertise implies, and that the conventional rhetoric of school education enforces, we should consider the merit of rejecting the whole idea of superiors and inferiors, and denying that inferiors (whoever they might be) are incapable of doing what a superior can do[10]. That way of thinking about humanity can only be a mythos of powerlessness. As long as we must think about superiors and inferiors, those who happen to have power and control can justify their position on the grounds of their superiority, and we are back to the seduction of facts, and politics-as-war. We should not be taken in by this assumption, for we have no reason to accept it and every reason to overthrow it. What if there never were superiors and inferiors… what if there was just equality of intelligence?

Orbiting the Truth

Already the mental barriers are up, the opposition reflex kicks in, and the idea that we might possess equal intelligence becomes something difficult to accept. Perhaps you are proud of your own intellectual prowess and accomplishments, and this newfangled concept feels like a threat to your self-esteem. Perhaps your view of yourself is less haughty, and you find the path to equality of intelligence blocked by your certainty that other people must be smarter than you are. Perhaps you have merely empirical concerns, that (say) surely not everyone can be Einstein. These problems can be addressed, each in their own way, in good time.

However, whatever the blockade between you and equal intelligence might be, perhaps it will help to invert Rancière's optimistic formula-

tion… if you cannot accept that we possess an equality of intelligence, perhaps you can simply accept that we are all *equally stupid*. This is perhaps an easier pill to swallow: we usually don't have any difficulty accepting the evidence of human foolishness, since it is manifested every way we look. But then, we ought to pause for a moment, since even if we can mentally accept this idea, we may find that beneath this simple supposition we have secretly set aside out own stupidity, perhaps because if we don't trust our own judgement we will be unable to act at all. Under the concept of ubiquitous stupidity might lurk a secret bunker where we ourselves are safely excluded from culpability.

Let us tackle this by going back once more to Descartes, and since so much of this book has served to put him in the role of accidental villain, let us give him the chance to return one last time as a hero. He should, in point of fact, already be a hero to anyone who holds the sciences in high regard, for it was Descartes dedicated enquiry into doubt that created the conditions for a quest for scientific certainty, and who thus initiated "a relentless sifting of the credentials of all kinds of knowledge", as Mary Midgley puts the matter[11]. Our endless desire to point out his errors today is only the child's desire to wriggle out from the influence of their parents… we have to turn on Descartes because otherwise we'd have to admit our reliance upon him. This much is true of so many of the philosophers who went before us – including, of course, Plato's equivalent influence upon Descartes.

From Jacotot's journal, Rancière quotes an extract where the educator has translated a section of Descartes' work into his own phrasing: "Man is a will served by an intelligence."[12] This formula is a secret inheritance from Descartes that Rancière uses as the core of his call for emancipation, but we must be careful to understand it. As Midgley explains, Plato's vision of reason governing our instincts came to Descartes, and was passed on to Kant, all the time honouring the value of thought. But soon after, doubts emerged about whether thought could secure meaning, a crisis that Nietzsche and Kierkegaard passed on to the existentialists. Will came to mean something like arrogance, obstinacy[13]. Conversely,

when we talk about humans as 'a will served by an intelligence', what is meant by 'will' is no more nor less than our capacity to take decisive action towards our goals or desires.

A will served by an intelligence is a means of understanding why we have all acquired different knowledge-practices: we have all willed different things, at different times. When my will was focussed upon understanding games, I learned the knowledge-practice of game design that reliably creates systems for conditioning play in certain subtle ways. When my father's will was focussed upon the Sunderland flying boats, he learned the knowledge-practices of repairing its mechanical systems. For Rancière, learning and understanding is only ever a kind of translation, and every text or system is simply something we will discover how to translate into our own terms, whether we are talking about a philosophy book, a game, or an aeroplane[14].

So while an individual could be anything they want to be – that they *will* to be – they first must want it, that is, they must will it[15]. The inequalities we observe in the ways intelligence is manifested are taken in the old mythos as evidence of two kinds of mind – a superior and an inferior intellect. But there is no reason it has to be understood this way. It is equally viable to understand these differences as being of the *will*, not the intelligence. What seems like stupidity would then be a simple lack of interest, a lack of attention – a failure of will, not a failure of intelligence. This would mean there is no reason for intelligence to be differentially distributed, for there to be a hierarchy of smartness… it might mean there was an equality of intelligence[16].

For this account to remain plausible, we might need some assurance that it is consistent with our biology – that the spokespeople for human anatomy could either reliably report that this is the case, or at the very least could not rule it out. But equality of intelligence, an equal capacity to learn any knowledge-practice, is not something that we could produce objective knowledge for. It would require restarting our lives, setting them back to initial conditions – it would essentially require time travel.

But if nothing else, equality of intelligence does not contradict what the reliable witnesses we have made from our anatomy have to say. Learning, as Rancière himself notes, is partly remembering and partly relating[17]. These are functions co-ordinated by a part of our brain known as the hippocampus – and it is at least a hint towards equality of intelligence that different knowledge-practices affect the sizes of these organs[18]. This is far from proof. But the possibility remains open that our capacity to learn knowledge-practices, our intelligence, *could* be equal.

On this path, we find that the primordial vice must be *laziness*. We exercise our intelligence every time we acquire a knowledge-practice, and this process always entails a phenomenal degree of repetition, which is boring[19]. It is only if our will engages with the relevant topic (whatever it might be) that we persevere and our practice becomes knowledge, becomes capable of reliability. Whenever our will is not engaged in this way, our intelligence never becomes involved. Whenever we do will our intelligence to get involved, we cannot help but learn. Our differences of ability are not, on this understanding, anything to do with differences of intelligence: they are to do with differences of will.

By understanding learning in this way, and choosing to view intelligence as a capacity we all hold equally, Rancière develops Jacotot's idea that you *do not need to know something to teach it*. Because the core of the relationship between teacher and student is not that the teacher translates for the student – when this happens, we make a very risky bet that the two people will understand in the same way. Maybe in a universe that would make sense, but we don't live in such a place. Successful teaching is not about trying to join two *intelligences* together – such an endeavour is always a gamble. It is about joining two *wills* together in the common task of learning. When the teacher is committed to the student's learning, *how* the student learns can be left as something to discover. What matters is that common commitment to learning, a relationship of will-to-will, compelling the student to apply their intelligence *in their own way*[20].

What misled us is the idea that learning and understanding had to be

done in a particular way if it was to be correct, and as beings living in a multiverse this approach has to be suspect. Learning is translation, and I cannot translate for you – if I do, all I will do is add another unnecessary step into the chain of events leading to your acquisition of the relevant knowledge-practice. I can commit to your learning without forcing you to learn the way that I did (although if we *can* learn in the same way, so much the better). It is therefore correct that not everyone can be Einstein – but anyone whose will can be set in the same direction as Einstein's could acquire Einstein's knowledge-practices, and every teacher of physics who does not mistake what learning means can help any student who wills this down that very same path.

Veracity is the name that Rancière gives to the individual experience of truth, noting that we shall not find truth if we look for it solely within what is said. Statements are not truth (facts are not knowledge), although they can certainly indicate our appreciation for it. Indeed, truth is not something that can be given: it is what is experienced, not what is said[21]. Veracity puts us metaphorically in orbit of the truth, and we can all be in orbit of the same truth without being in the same orbit. Indeed, no two orbits will ever be exactly the same, which is why it is dangerous for a teacher to insist on the student learning the same way they did[22].

Truth is not some foreign land of objectivity that we have to struggle to reach, as justified true belief suggested, it is something for which we all possess a uniquely individual familiarity. We each must have our own orbit around the truth[23]. If you did not, you could not have a relationship with truth: you would merely be relying upon someone else's experience of it. Sometimes, we have to do this, because we can't know everything, we can't learn all possible knowledge-practices. But whenever we trust a reliable witness of the truth, or rely upon a spokesperson for objective knowledge, we *don't have knowledge*, because we didn't learn a knowledge-practice from which we can experience veracity.

Veracity is something that is felt, and it is the moral foundation of knowledge[24] because if we do not have a knowledge-practice that puts us into

a viable orbit, we simply *don't know*, and then we can only trust *other people's* experience of veracity. But we *can* trust others to possess veracity precisely because they have their own knowledge-practices, and the intelligence that allows us to acquire these practices is something we *all share equally*. This is the meaning of equality of intelligence, and it is a kind of equality that we can obtain instantly, at the very moment we decide to be emancipated and recognise that we are all fundamentally equal. We are all a will served by an intelligence.

The idea of veracity gives us another path into the multiverse, and explains why there is a truth to be found in this peculiar image whether it is expressed as many real worlds, as plural realism, or as an ecology of practices. Each of these concepts is orbiting around the same truth. Equality of intelligence is the only ideal of equality that we need to complete the work of the Enlightenment, a project that has run aground because almost as soon as humanity decided we could all be equal, it found excuses to make new kinds of superiors and inferiors. But there are no inferiors. There is only equality of intelligence, and will figuring out will.

A Community of Equals

For Kant, what all humans shared in common was our rational capacity to will different ends, that is, to set ourselves towards certain courses of action or outcomes. It is from this that he derives his principle of mutual respect, claiming that once we recognise this commonality we must allow each person to set their own ends provided they are compatible with a similar freedom for all. For Kant, this ability to will our ends bestows an inviolable dignity, and for this reason all beings that possess it (whether human or not) have equal worth[25]. Once again, this is a mythos, a metaphysical picture… but without this or something like it, it's far from clear that there is any basis for human equality.

Rancière puts Kant's idea in a radically different way by suggesting that *equality* and *intelligence* are synonymous, as are *reason* and *will*[26].

But while it's comparatively clear how reasoning and the power of will could be equivalent, it sounds strange to say that intelligence and equality are the same. But this is merely Kant's observation subtly reconsidered: our common capacity for knowledge-practices *is what makes us equal*, because any of us could have learned any knowledge-practice – everyone has the same potential for knowing, and thus the same intelligence. There is no objective knowledge-practice that can confirm this; it is only a possibility. But what a possibility! It is one worth imagining.

What draws us away from thinking of humanity as comprised of equals (whether based on the dignity of a rational mind, or equality of intelligence, or some other mythos) is that we possess a powerful need to level charges of stupidity against others we disagree with. The opinion of inequality that underpins such accusations is what distracts us from the possibility of equality – even (perhaps especially!) when someone is insisting upon equality for all! Rancière suggests that all distraction is at root the opinion of inequality of intelligence[27]. Once the will is distracted in this way, it loses the ability to engage with others as equals, and instead enters into rhetorical battles that pull minds into unstable orbits[28], plummeting from the truth like a fallen star.

This is the doomed path towards politics-as-war, where we no longer need to engage with each other in political discourse because once we know we are right it is simply a matter of enforcing what we know is right. But politics is not the name of a struggle for power, but the configuration of a space of discourse[29]. Inequality of intelligence made sense in a peculiarly two-dimensional kind of universe, one where being right ensured that everyone else was wrong. It doesn't make sense in a multiverse, in an ecology of practices where different kinds of knowledge can put people into different orbits around the truth. "Truth settles no conflict in the public space", Rancière suggests; it is found only in the solitude of individual conscience, and "withdraws the moment that conflict erupts between two consciences."[30]

Despite the commitment to equality for all, the Marxist is distracted

whenever they see in landowners and shareholders only enemies to be defeated, and not fellow citizens whose intelligence must also be respected. The Capitalist is distracted whenever they insist that their commercial success is evidence of their superiority (the circular link between intelligence and success in education once more!), and that everyone else must therefore deserve their poverty. Like the Marxist, the atheist often fights honourable for equal rights but is all too easily distracted whenever they see solely the impossibility of religion producing objective knowledge, and never that the knowledge-practices of religious people reveal their veracity in sustaining communities of care. The theist is equivalently distracted whenever they profess that everyone is equal in the eyes of God, but then insists that anyone who does not agree with them is damned to an eternity in Hell – as if they (and not their Maker) were the ultimate judge of souls. As I said before, this is truly the Age of Distraction!

The sciences, religions, and political systems all have an element of veracity to them, or they would not have their adherents, but they all carry a risk of distraction and the possibility of catastrophic failure as well, something that Alain Badiou has been eloquent in expounding in the context of fidelity to a truth[31]. Religion and political ideology are already widely suspected, for both good and for bad reasons, but we have to be especially careful with the sciences too. The legacy of Descartes that passed to us through the Vienna circle leads to the seduction of facts that is just as poisonous for politics as religious and factional bigotry.

The image of a universe allowed the work of scientists to seem to be a journey with an already established goal, or a building that could be made by adding brick by brick. But as Midgley observes, this fails to recognise that the sciences are a cumulative, living enterprise, where solving one problem always raises others that require new approaches[32]. As Isabelle Stengers makes clear, each apparatus that turns an object into a reliable witness and thus produces objective knowledge (the knowledge of objects) then goes on to create new questions[33]. To pursue

research is to adapt our scientific knowledge-practices to new problems, and this process could potentially go on as long as our species does.

The problem with the seduction of facts is that it prevents politics by making experts into 'superiors' against whom everyone is 'inferior'. Even the experts are judged inferior to each other, as anonymous peer review demonstrates. What lies behind this distraction is a faith that expertise can be purged of metaphysics, as the Vienna circle believed, or that there can be metaphysical views that have no moral or political bias. Midgley justifiably disputes this assumption, and furthermore makes the point that there is no dishonour in having ideals – quite the opposite, in fact. We should not attempt to smuggle bias under the cloak of expertise[34]. That was precisely what went wrong with anonymous peer review.

Equality of intelligence, or Kant's mutual respect, is not some distant goal to achieve, like an equal society (whatever that is supposed to mean), but rather a point of departure[35]. Whichever conceptual route we take to get to the veracity of this vision, it is only through an ideal of this kind that we can truly belong to a community of equals. Rancière dreams of "a society of artists", who would share this emancipated view of our relationship to one another. No superiors, no inferiors. Rather, the superior application of knowledge-practices is recognised as the product of a strong will to learn, while inferior skills are merely the outcome of someone not seeking that particular knowledge, and never evidence of a lesser being[36].

Living together like this is not just an ideal, it is a *practice*, the practice of emancipation, of Enlightenment. Society will always be irrational, but we can still learn ways to 'rave reasonably' together[37]. We just need to learn to be equal in our unequal societies[38]. More than this, we have to learn to cultivate virtuous discourse, because without this our politics – the space where we can talk about how we are going to live together – is impossible. It is equally endangered whenever we attempt to make consensus a kind of fact to be wielded as a weapon, as has

increasingly happened over the previous century. We have forgotten that a genuine politics must always be a discourse of *dissensus*[39], otherwise we are trapped in politics-as-war, where one claim of necessary consensus opposes another, power and distraction reign, and equality is merely another contested battleground between liberal and conservative, atheist and theist, Marxist and Capitalist.

We can now return to the place where we began, the Wikipedia, and ask again: what does the Wikipedia know? When I first concluded that the Wikipedia *knows nothing*, this was based on the old understanding of knowledge as justified true belief. But if knowledge is a practice, then the Wikipedia is something quite different from a conventional encyclopaedia, for all its apparent similarities. Badiou has justifiably used the encyclopaedia as the very image of the received opinions of any given time and place, because the old understanding of knowledge has this static quality that lends itself to being written down. He contrasts this to the intense experience of truth, which punctures through all traditional views of knowledge in events that are impossible to anticipate, or even adequately explain[40]. The truth always exceeds opinion, and can never be reduced to it[41].

On the new understanding of knowledge as a practice, the Wikipedia as a text still knows nothing, because a page of facts is not a knowledge-practice but merely a collection of the side-effects of those practices. Yet the Wikipedia is not solely a vast set of pages recording facts of one kind or another, but also a *community*. Indeed, there is genuine politics between the editors of the Wikipedia, because there is always dissensus, even if occasionally one group of editors, or a lone anonymous vandal, denies the political veracity of the Wikipedia by forcing one vision onto the page through abuse of power or scurrilous deceit.

Jimmy Wales' image of the Wikipedia as 'The Free Encyclopaedia that anyone can edit' has been used as a means of attacking its credentials by suggesting it is driven by a "cult of the amateur"[42]. Yet if all we are doing is collecting facts, why would we need experts? Indeed, in allow-

ing anyone at all the opportunity to edit, the Wikipedia is an authentic product of the Enlightenment, in that it assumes neither superior nor inferior, and grants everyone something close to equality of intelligence. True, not everyone has the will to learn its rather peculiar practices – but everyone is afforded the opportunity to try.

At the same time, the Wikipedia is all too frequently held back by the ever-persistent image of a universe that continually suggests that each page of the Wikipedia has some correct way of being. This perspective becomes suspect in the light of plural realism and the ecology of practices. But this limitation is not a property of the Wikipedia nor of its editorial practices, but rather of the community that edits it, and the political space that it constitutes has to accept this dissensus or else give up the equality of intelligence implied by allowing anyone to edit. In this, it is only a manifestation of the problems of knowledge that we have inherited from Plato and so many other philosophers along the way.

Alasdair MacIntyre, examining the importance that the Victorians placed upon the encyclopaedia as a symbol of the unity of knowledge, demonstrates the enormous difficulties entailed today in maintaining the same kind of vision that made the Ninth edition of the *Encyclopaedia Britannica* a shining symbol of the quest for truth when it was written in the 1880s[43]. In academic circles, a variety of influences – especially Nietzsche's genealogical method, which first appeared (not coincidentally) in 1887[44] – have made the whole project of a universal encyclopaedia questionable, precisely because the idea of a universe of all knowledge has become suspect. As MacIntyre makes clear, encyclopaedias have become "mere collections of facts pragmatically ordered for convenience of reference"[45] since the faith in an attainable unity of knowledge that previously animated such projects has been substantially lost among the community of experts.

The Wikipedia, in inheriting the encyclopaedic project but then 'outsourcing' the referencing work to all comers, inherits serious conceptual problems that its community is perhaps only dimly aware of. Because its

practices rest upon compiling expert testimony, there is no viable synthesis of knowledge possible without editors making their own judgements as to the credentials, reliability, or notability of everything to be included or excluded. Perhaps as a result, it has not worked out in practice that 'anyone can edit' the Wikipedia, since an oligarchy of long-standing editors have the greatest influence on its content[46]. It is perhaps also worth bearing in mind that the peer production of content seems inevitably to result in such oligarchies of control[47]. A great many of the well-established Wikipedia editors are not anonymous, but an authentic transparency of process is still hopelessly difficult to attain in so vast a network, and accountability is notoriously elusive in any diffuse, large-scale community. It is hard to avoid the conclusion reached by Adele Santana and Donna Wood that "Wikipedia has the appearance, but not the reality, of responsible, transparent information production"[48].

If on the one hand the Wikipedia is an embodiment of equality of intelligence, its other hand is constantly wrestling with that emancipation and striking it down in discord. For just like anonymous peer review, the Wikipedia fails Kant's transparency principle by failing to engender trust in its masked editors, and hence in itself. The mask is available in its strongest form through the anonymous, unregistered accounts, but even the identified editors are effectively shielded by the insurmountable difficulty of attaining transparency of process. This editorial obfuscation permits politics-as-war to infest the pages of the Wikipedia as surely as it does our nations and local institutions. How many people have used the mask to sabotage the facts of the Wikipedia, or to manipulate pages to accord with a singular distracted vision?

That many people would not edit the Wikipedia if they had to be identified is no more convincing an argument for anonymity than it was in the case of peer review, although Paul de Laat's suggestion that the social contract of the Wikipedia requires anonymity is more compelling. It amounts to emphasising equality of intelligence, and trusting that this can win out against the problems it must wrestle against in practice. But if editorial power within the Wikipedia is possessed by a community

of the dedicated, we ought to wonder if Jimmy Wales' vision for the Wikipedia as a 'Free Encyclopaedia that anyone can edit' is even plausible. After all, it is not at all clear that the concept of unitary knowledge inherent to the idea of a universal encyclopaedia is attainable by *any* process, whether it is manifested as a wiki or as a book.

The outcast Catholic priest Ivan Illich suggested that we had misunderstood technology if we think it is always beneficial to human well-being and flourishing. Rather, only some of our tools are *convivial* – they foster individual competence and control, and help us create societies where we can be politically inter-related[49]. His favoured example of a convivial tool is the bicycle, which ensures the equality of its users, and fosters individuality in a way that cars do not, since they create a superiority of the road traveller above the local community, not least of all by dividing land with spaces that are impassable on foot[50]. I have argued that this critique runs even deeper today, because we consistently invest technology with a mythic power to save us that it not only lacks in almost all cases, but that also conceals its capacity to destroy both morality and life when we cannot distinguish convivial tools from the alternatives[51].

The Wikipedia is not a convivial tool, but it is still closer to conviviality than any encyclopaedia before it. I fear it can never be entirely convivial while the identity of editors is hidden behind masks of various kinds, and despite the hostility towards unregistered editors amongst its community I have no expectation that this will change any time soon, or indeed ever. But the idea of a wiki as a convivial tool is one that I find compelling, and I cannot help but wonder whether communities of equals joined in political dissensus through convivial technology could be assisted by tools such as these. When a community of Wikipedia editors avoids distraction, the results can be impressive. They can match traditional encyclopaedias in the knowledge-practice of gathering and referencing facts. There is a message here, if we want to read it.

Maybe the Wikipedia does not know nothing… maybe what the Wikipedia knows is that there were never superiors and inferiors, that

we all possess equal intelligence, and that an encyclopaedia can never be completed because that would mean that knowledge was merely an edifice to be built to some pre-existing template. That was what the image of a universe gave us, but this ideal for truth now seems quite hard to accept outside the limited case of objective knowledge. Truth is something we can all experience, but it is not what produces facts. Facts are merely the residue of our knowledge-practices, and it is because our different practices can know in so many different ways that we live in the many real worlds of our multiverse. Yet universe and multiverse are only different names for the same truth, and that truth is that we all live here together. I don't know… maybe it's time we found out what that really means.

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Glossary

Anonymous peer review: either of two kinds of *peer review* where the reviewers' identities are kept anonymous, namely *single blind peer review* and *double-blind peer review* (q.q.v.).

Contact theory: Hubert Dreyfus and Charles Taylor's term for those models of experience that recognise we have direct transactions with reality, and do not need to distinguish between an 'inner' world of experience and an 'outer' world of reality. See also *veracity* (q.v.).

Convivial: Ivan Illich's term for tools that foster individual competence and control (e.g. the bicycle), and for societies in which technology serves politically interrelated individuals.

Dissensus: Jacques Rancière's concept that politics requires the recognition of disagreement or else it cannot be a space for discussing how to live together, but only a politically-empty power struggle to enforce a pre-conceived consensus.

Double-blind peer review: *peer review* where the identity of the writer is kept anonymous from the reviewers, and the identity of the reviewers are kept anonymous from everyone. Compare *single-blind peer review* and *open peer review* (q.q.v.).

Ecology of Practices: Isabelle Stengers' term for the array of diverse human *practices* (q.v.) that impinge upon one another, creating conflicts and tensions, but also widening the perspectives and skills that are available. See also *multiverse*, *plural realism* (q.q.v.).

Equality of intelligence: Jacques Rancière's idea that we all possess equal intelligence, and that our differences stem from how we have cho-

sen to apply our intelligence, and not from any fundamental intellectual differences.

Event: something that occurs, what Alfred North Whitehead considers the ultimate substance of nature.

Fact: an assertion that can be made reliably (and that can be verified), which emerges from the refinement of a *knowledge-practice* (q.v.). See also *seduction of facts* (q.v.).

Infernal alternative: Isabelle Stengers and Philippe Pignarre's term for a situation where the status quo is claimed to be impossible to challenge, and the only possible response is either resignation or ineffectual denunciation.

Justified true belief: a widespread philosophical view of knowledge as a belief that both corresponds to reality and that is held for reasons that are justified. Compare *knowledge-practice* (q.v.).

Knowledge: an understanding of some kind. In this book, the mainstream philosophical view of knowledge as *justified true belief* is contrasted to *knowledge-practices* (q.q.v.).

Knowledge-practice: any *practice* that can be performed with a degree of reliability and that allows for the assertion of *facts* (q.q.v.) as a side effect of its execution.

Metaphysics: the philosophical exploration of that which cannot be tested or proven i.e. claims concerning reality that exceed experience or direct evidence. See also *mythos* (q.v.).

Multiverse: a term coined by William James and popularized by Michael Moorcock for a diversity of realities, a 'many-in-one'. The term can either mean a plurality of parallel physical dimensions, or a plurality of parallel experiential realities, but in this work it is used in the latter sense. See also *plural realism*, *ecology of practices* (q.q.v.).

Mutual respect: the agreement between individuals to respect one another's individuality arising from our shared rationality, expressed in Kant's philosophy as a facet of the fundamental principle of morality. See also *equality of intelligence* (q.v.).

Mythos: a collection of imaginative patterns that underlie a particular perspective on existence. See also *metaphysics* (q.q.v.).

Non-religion: a tradition with a specific *mythos* and shared moral practices that is distinct from the religious traditions, despite having some commonality with them e.g. Marxism, *positivism* (q.q.v.).

Objective knowledge: Isabelle Stengers' concept of the 'knowledge of objects', which researchers access only through the creation of apparatus that successfully resist objections. This makes the object being studied into a *reliable witness* (q.v.).

Open peer review: peer review where the identity of the reviewers is public knowledge. This book uses the term only in this sense, but elsewhere it can be used to mean open-access peer review, where the reviews are made public, or open-invitation peer review, where anyone can submit a review. Compare *blind peer review*, *double-blind peer review* (q.q.v.).

Paper: an academic essay submitted for a journal or conference.

Peer review: the provision of judgement and feedback on written work. See also *blind peer review*, *double-blind peer review*, and *open peer review* (q.q.v.).

Politics: collective discourse about how we live together that is open to question and negotiation. Compare *politics-as-war* (q.v.).

Politics-as-war: a form of political life based upon defeating opposing viewpoints within the legislature and thus enforcing your own political values upon others. Compare *politics*, *seduction of facts* (q.q.v.).

Positivism: a diverse collection of scientific *non-religions* (q.v.) based upon either dismissing all untestable matters, or faith in the sciences as the most reliable (or sole) source of truth.

Positivist: a person who believes in some form of *positivism* (q.v.).

Plural Realism: Hubert Dreyfus and Charles Taylor's term for a view on existence that recognises we are all in contact with reality, but that each means of such contact possesses its own terms. See also *ecology of practices*, *multiverse* (q.q.v.).

Practice: an activity that becomes more reliable through its exercise, and that is shared by some community. All skills can be understood as practices.

Realism: the claim that truth has a meaning that transcends individual differences of perception or being, and thus that it can be established or verified by some means (often in contemporary versions of realism through scientific practices). Compare *relativism* (q.v.).

Relativism: a rejection of the idea that truth can be securely established, or even that truth is a viable concept. The term is often deployed disparagingly against those who reject the meaning of truth in various different ways. Compare *realism* (q.v.).

Reliable witness: Isabelle Stengers' term for a process that allows speaking on behalf of something else, e.g. when a researcher in animal behaviour talks faithfully about the animals they study, the *animals* are a reliable witness, and the researcher is their *spokesperson* (q.v.).

Seduction of facts: the political temptation to substitute the assertion of facts for the space of discourse that is authentic *politics* (q.v.) .

Single blind peer review: *peer review* where the reviewers' identities are kept anonymous. Compare *double-blind peer review* and *open peer review* (q.q.v.).

Spokesperson: Bruno Latour's term for those (particularly researchers) who speak on behalf of other entities (particularly non-human entities) via whatever process will allow those entities to form a *reliable witness* (q.v.) e.g. when a mathematician asserts a mathematical truth, they are a spokesperson for numbers.

Subjective knowledge: in this book, this concept is tautological and vacuous, equating to just 'knowledge': every *knowledge-practice* is conducted by subjects, and even *objective knowledge* (q.q.v.) is produced this way.

Tradition: any human activity with a specific focus, set of methods, and its own values can be considered a tradition e.g. cartography, Chess, chemistry, Christianity, cooperage, crochet. This term is broadly equivalent to Isabelle Stengers' use of the term 'practice'.

Transparency principle: an alternative name for Kant's principle of publicity, which suggests that any institutional policy is unjust if making it known would render it impossible to implement.

Veracity: Jacques Rancière's principle of accordance with a truth that is experienced rather than known with certainty, metaphorically expressed as each person having their own individual orbit around the truth. See also *contact theory* (q.v.).

Vienna circle: the *positivist* movement of the 1920s and 1930s that considered *metaphysics* (q.q.v) meaningless because they could not be verified.

Virtuous discourse: communication between individuals who engage with one another as equals and are committed to understanding one another's perspective, which ideally is also openly available for others to read.

Will: the capacity to act decisively towards goals or desires.

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About Chris Bateman

Dr Chris Bateman is an outsider philosopher, game designer, and author. Graduating with a Masters degree in Artificial Intelligence/Cognitive Science, he has since pursued highly-acclaimed independent research into how and why people play games, and written extensively on the neurobiology of play. In 2009, he was invited to sit on the IEEE's Player Satisfaction Modelling task force, in recognition for his role in establishing this research domain, and in 2013 became the first person to be awarded a doctorate in the aesthetics of play.

Chris works in the digital entertainment industry as an expert in game design, narrative and player satisfaction modelling, and has worked on more than forty published games. As a game designer and writer, he is best known for the games *Discworld Noir* and *Ghost Master*, as well as the books *Game Writing: Narrative Skills for Videogames*, *21st Century Game Design* and *Beyond Game Design*. He also teaches game narrative at Laguna College of Art and Design.

He has a lifelong interest in mythology and religion, and has travelled the world studying religious practices and beliefs. He has taken part in everything from Native American sweat lodges to Pagan solstice celebrations, as well as visiting Buddhist and Shinto shrines in Japan, and witnessing traditional tribal religions in Africa whilst briefly living in the Sahel Reserve near the Sahara desert.

His work in philosophy includes *Imaginary Games*, which explores the relationship between art and play, *The Mythology of Evolution*, which examines the role of imagination in the evolutionary sciences, and *Chaos Ethics*, which argues for the centrality of imagination to morality and ethics. His blog *Only a Game* (http://onlyagame.typepad.com) deals with

both philosophy and game design, and contains a prolific array of articles, many of which have been featured elsewhere.

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