

Stand Up For Science

So the world's complex and it's all going over your head.
We're tired of experts so we're gonna ask morons instead.
Fake facts, fake news, fake people, fake boobs, fake fear...
Where can you turn to make everything you learn seem clear?

If you want to know the truth,
do some maths construct a proof,
conduct your own experiments,
and you can win the arguments with SCIENCE.

A quarter of Americans don't believe the earth goes round the sun.
Half of Americans don't believe in evolution.
Is it any wonder that the modern world's causing them confusion?
When they're 500 years late for the scientific revolution.

You wanna take part,
you gotta get smart.
Don't just bluff,
Learn about stuff.
Listen in class,
so you don't talk arse.
If you spout claptrap
you're gonna get a slap
from SCIENCE

Stand up for science
Stand up for science
Show your defiance and stand up for science
Stand up for science
Stand up for science
Join our alliance, stand up for science

We're not particularly political but watch out because we're fast learners.
We're going to storm the Whitehouse armed with our Bunsen Burners.
Evidence based politics would truly be magnificent.
We're going to make our voices statistically significant.

If we ignore what science says
We'll be back in the dark ages
Hanging up in metal cages
Copying out bible pages
Dying of bubonic plagues

Chorus

If you want to know the score
knock on a professor's door
they'll tell you what's going on
but still admit if they were wrong
that's SCIENCE

Chorus

In April 2017 there was an international march for science. The aim of the march was to "Stand up for science" and protest against anti-scientific fake facts and climate denial. The march was pointedly in protest against the anti-science stance of right wing populists such as the corona victim in chief.



MARCH FOR SCIENCE

EARTH DAY

APRIL 22, 2017

There was a call for a song to sing on this march, I thought an anthem for science would fit right in with the usual stuff I write, so I thought I'd try and make something. So this song is hopefully a positive counterpart to the pure anger and negativity of the previous song "A Win For The Stupid".

So presumably what they were asking for was something earnest and sincere. Sadly, as a person with a fundamentally British sense of humour, I am culturally incapable of being fully either. In fact, in making these kinds of songs, I'm being "ironic" in an "ironic" way. That sounds revoltingly decadent and vacuously meta, but I propose that it's not. I'll try to explain this.

Being a singer, or indeed any kind of artist, is a form of acting. Even the most earnest, sincere and soulfully authentic singer songwriters are still acting (*especially* them, the slimy gits). Even if the song is, in fact, absolutely sincere and your absolute best attempt at expressing what you believe to be your deepermost soul, you still have to record ten takes of the damn thing, and you still need to do the thing with some semblance of professionalism at gigs when you've got a shit crowd and you're in a bad mood. No matter how "real" you want to be, you need the ability to be unreal, otherwise your realness simply won't scale. So having accepted the necessity of unreality, you can then have the further insight that what you thought of as "realness" was only ever a means to end in the first place. You can then strategically utilise realness and unrealness as you see fit in order to achieve your artistic goals,

whilst being mindful that this game doesn't confuse you so much that you lose touch with what is really real. One of the many reasons I love Gary Numan so much is that his music is clothed in the slick, artificial, soullessness of futuristic modernity, and yet is essentially about human vulnerability. He uses unreality to express the real. Numan is the exact opposite of people who sell vast amounts of, on the surface, "soulful" sounding music that is at its heart hideously soulless.

So, meet our next "unreal" vocalist character of the album. Ever since I wrote a song about the Library I've had a kind of sporadic alter ego of a kind of science educator type person who writes songs for kids to get them into vaguely educational topics. This character is neither extremely hip (probably wears tweed jackets with elbow patches) nor especially morally upstanding (I imagine he may have got caught sharing a spliff with some GCSE students once). He's a bit chaotic and generally fails to maintain discipline amongst the kids. Peculiar off-message bits keep finding their way into the songs. Like with the homemade surreal children's TV shows made by eccentric hippies in the seventies, adults often question what *exactly* is going on in these songs. They wonder whether their children's minds are being somehow warped by this somewhat discomfiting material. Similarly, the music isn't actually anything to do with the kind of pop music kids usually listen to. It's more or less completely out of touch, and happily so. This is just some weirdo with a studio in his shed who doesn't really know what's going on in the world, or what real kids would actually listen to. So he tries to be both cool and educational but is in the end a failure on both counts. A lot of my favourite music is a failure, so why should mine be any different?

The idea of making pop music educational is such a silly one that you have to intentionally mess it up somehow. So this is the character I wheeled out again for this song. Maybe not appropriate, but it was the only guy I had. That's all I got, OK? Jeez.

In fact the inspiration for this whole silly strain of my music I think came from one single track - the Fire [Safety Song](#) on the compilation Celebrity Fog Donkey on the label Spymania. Library was basically a copy of that, and once Library was out of the bag I felt the urge to keep doing that kind of thing.

I realise that it's somehow silly, and the "earnestness" of making educational songs should somehow be tempered with a bit of a knowing wink... the impossibility of simultaneously being edgy and educational (edge-ucational?) becomes part of the fun. Alongside this prankiness I'm also trying to be both reverential and referential in that there are some true moments of beauty and genius in the things made for kids that can transcend the world of adult culture. Children have their cultural filters wide open, and judge things in a very pure and immediate way, and this surely is what an artist wants from an audience. If a child likes a piece of music, then you can bet that there's something actually good about it. Children's music is something I'm quite fascinated by, unfortunately I do not have children of my own to experiment on, so I basically rely on my own infantile mind to do what it does best.

Whilst children are somewhat concerned with being cool, they are far less concerned about that than teenagers or young adults. And then one of the great things about entering middle age is that you get back to those days when being cool didn't matter. If you can somehow preserve your fun loving childishness, getting old can become a kind of second childhood of unsophisticated silliness. This is one of the perpetual sources of embarrassment for teenagers - their parents are far more willing to be childish than they are.

So if your musical alter-ego is uncool, i.e. you are pretending to be uncool, then you shed the *pressure* to be cool, and that's intensely liberating.

I had to redo the vocals for this song too. Again, Tony shouted at me. This is because the vocals were recorded when I hadn't practised them properly. They were just out of time enough to make the energy of the track sag. It was sagginess all over again. It is actually surprising how much the voice acts as a rhythm instrument. It's super obvious in hip hop of course, but the timing of the syllables is vital for almost anything. The only way to get it right is really bloody darn well go for it. Anything less than 100% commitment and I find the timing and enunciation turns to mush. I find I have to really hype up and move my body around quite a lot to sing in time. I need to tense my muscles, I need to flap my hands around, I need to adopt the ridiculous legs-wide-apart stance of [those Shakesperian actors in Blackadder](#). And practise. I find I have to sing something an absolute ton of times before it takes shape. Especially for these lead vocals in particular, the lyrics, because they were quite complicated, were really hard to fit to the rhythm. The original vocals had

chutzpah, but only with 95% confidence, and that's really not enough. The other tricky thing about this is that there's not actually a melody. The melody is more dictated by the content of the lyrics than anything else. This means that for a line like "when their 500 years late for the scientific revolution" I tried to sing them as if I were an impatient, exasperated, party host opening the door to the scientific revolution to a bunch of dunderheaded American latecomers. This involves slightly camp higher notes on the "five" and "years", kinda like how you might say "ooh myyy god! What tiiiime do you call this?". This was not exactly a conscious move, it more sort of evolved from singing the whole thing with progressively more and more emphasis, gradually morphing and smooshing the parts of the line into the places they wanted to go. So I had to learn each of these shapes individually.

Sometimes I'll actually just loop a single bar of the song and record the same line over and over and over again until it seems right. I imagine decent singers don't have to do this kind of thing. Freddie Mercury, for instance, could record a single take with all kinds of flourishes and nuance, and then immediately double track it with another copy so precisely identical that together it sounded like one take but with a slight flange effect on it. Kinda depressing isn't it. I double track these vocals but there's all kinds of scruffy bits that don't match up. Hey ho.

Actually, there is somehow a bit of a Queen influence in the harmonies in this track, particularly the line "and you can win the arguments" which has a huge stack of pompous sounding voices across quite a few different octaves. I don't think of myself as a singer. I don't know why I do vocals. I have no idea why I ended up here, I just did. Bit of advice: if you're actually shit at music don't fall in love with it and make it your life's work. Don't do what I did, kid.

The Irony of Irony

The affectionate aspect of irony is often lost on people I think. There's one kind of irony that is largely cynical. This flavour of irony was extremely prevalent in the nineties and early naughties, and became rather nihilistic and wearisome. Some people trying to be cool are so anxious about not being seen to be "fooled" into liking something uncool that they distance themselves from everything.

Actually *caring* about something makes you intensely vulnerable. Irony provides you with a kind of ejector seat from this vulnerability. If your thing turns out not to be cool after all, you just pull the rip cord marked "ironic" and parachute to safety.

But then the ironists then have to get into *something*, because otherwise their lives would be culturally empty, and they'd never leave the foetal position, so they then get into the funny, crappy cheesy parts of culture so that it's *obvious* that they're being ironic. The trouble is that if you hang out with this scene for long enough you start to feel that the stuff you're actually *really* into is a bit simplistic and crass, so then you have to constantly crank up your cynicism to keep up with them. At which point you have an irony arms race, all aesthetic bets are off, and you somehow end up weeping openly, but ironically, at the Eurovision song contest.

Everyone becomes so distanced and alienated from things via their own increasing sophistication that they are unable to enjoy themselves in a simple direct way. Incidentally, this is also one reason why drugs can fundamentally change music - people's cultural defense systems fall away when they're high.

My guess is that the cynical form of irony emerges from being immersed in a world that is saturated with marketing and attention traps. If 99% of the cultural material you are exposed to is designed to manipulate you in some way, it's no wonder the default attitude is one of defensive cynicism. It functions as a kind of cultural immune system. Irony defends your mind against exploitative memes. At least that worked until the crafters of these memes got wind of it, I'm thinking around the time of "Oh, Mr Ambassador, with this ironic marketing you are really spoiling us!".

There's another form of irony that is far more affectionate. Where you really love the things you parody, but send them up anyway for sheer delight. In order to do a great pastiche of something you really need to understand it, and in order to really understand an art you need to love it. Maybe what I'm talking about falls outside of the definition of irony, but then the term has been so abused already that [broken windows theory](#) tells us that it will inevitably be abused further so what the hell.

It's necessary to maintain enough distance from something to make it funny (like a parody), but also essential to keep involved enough to craft it with all your heart.

Some people who manage this affectionate pastiche to great effect, and that have been massive influences on me, are The Dukes Of Stratosphere (a homage to 60s psychedelia by XTC in the 80's), Gary Le Strange (a stand up comic who did exquisitely crafted mash ups of 80s new Romantics, Numan, Bowie etc.), The Mighty Boosh, The Rutles, John Shuttleworth and Flight Of the Conchords. All of these artists are doing something that could appear to be a parody, but they never look down on their targets, indeed the parody could be said to be more of an homage. They also create songs of such brilliance that you have to say that they often completely go beyond the target of the homage. These are some of my favourite songs of all time. In fact, I would say that an unserious song can work on more levels than a serious one, because there can be serious sides to the unserious, but there is rarely an unserious side to something serious... The other great thing about pastiche is that you can tap into what I call generator ideas, or meta-ideas. Generator ideas are ideas that produce other ideas, and are the best ideas of all, of which more later.

I once tried to make a parody of a naughties R 'n B song. But it was horrid and it didn't work, because I can't stand Rn'b¹, so ultimately I don't get it. I don't understand how it works musically or culturally, so the track came out really wrong, unfunny, and just basically mean-spirited. In other words, if you don't understand something, you're not in a very strong position to criticise it. Which brings us, neatly, to Anti-Science.

Anti-Science

Let me admit, I've been there. I suffered from superstition like everyone else. I still do. Superstition is more or less our default method of thinking about the world. It takes great effort to compensate for the warped biases in your head and clearly see how the world works, as opposed to how you would like it to work.

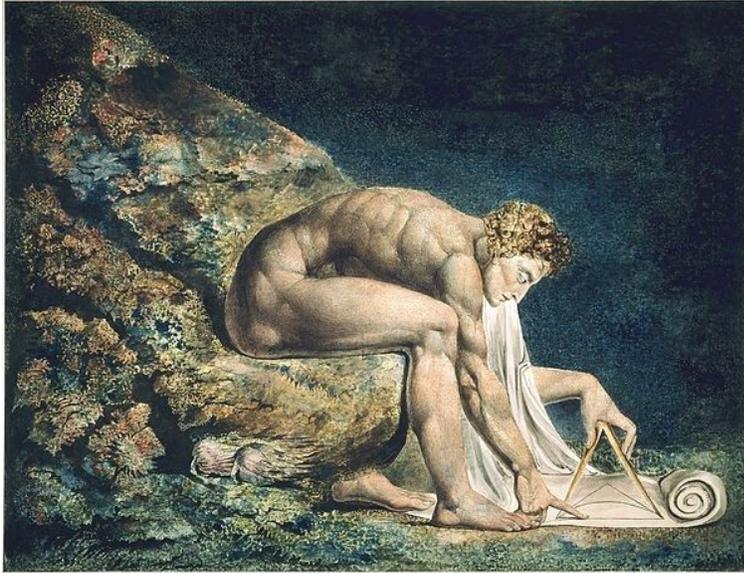
There was a time when I figured science was "incomplete". I felt that there were other ways to gain knowledge - introspection, mystical experience, imagination, maybe even just blind faith and conviction. Studying Physics didn't seem to really give me what I was looking for: the meaning of it all. I swapped degree courses to

¹ I don't even know how to spell it. RNB? 'R N 'B ? rN'B? Ah, Unbee? What style of music do they play on pirate radio? Aaarrrrhhh! and B.

Physics and Philosophy and that gave me a bit more depth, but the academic institutions charged with teaching me Philosophy seemed sadly devoid of anything that would give me my own path in life and find me real meaning. I only really found that meaning in music. During my first foray into higher education I would say that I was 90% committed to music and 10% committed to what I was studying. This reversed for my second foray.

Furthermore, with the destruction of the environment, various technological disasters and rising levels of mental health issues such as depression and anxiety, it can seem to a casual observer that science has had more negative effects on human well being than positive. But, in case you hadn't heard, the casual observer is an idiot. The idea that scientific progress has made our lives worse is one of the most pernicious and misguided ideas floating around at the moment, and I will come back to it. Repeatedly.

Having a full blown "mystical" experience around that time opened up in me a great interest in eastern philosophy. It seemed as though, instead of needing to find the truth via a rigorous, dry process of gathering evidence, I could instead perceive it directly and viscerally - via insight. This experience expanded the range of what I considered knowledge, and what could be considered "real". There seemed to be a whole deeper level to reality that didn't have anything to do with objectivity, measurement or materialism. I read stuff about William Blake's critique of reason and I dug it.



William Blake was highly critical of the cold, narrow focus of scientists such as Isaac Newton, who, whilst seeming in this picture to be pretty damn fit, badly needed to ergonomically rethink his working environment.

I was into the usual techno-hippy buzzwords: “holistic”, “distributed”, “holographic”. I was, I suppose, a Romantic. There was a massive divide in my head between the boring limited materialistic world view of my physics lectures, and the playful, deep, open, mind expanding worldview of the scene I was getting into, which was the kind of cyberpunk-hippy world of Mondo 2000, the exploding Techno/Trance scene, and typical sixties counterculture heroes such as Aldous Huxley, Herman Hesse, Timothy Leary, Alan Watts and so on.

Unfortunately, as soon as you get into the Spiritual, you get exposed to a whole heap of what I would politely call "unorthodox world models" but some would less charitably call "bullshit". So I picked up some bullshit along the way, some of it was actually helpful, but much of it is simply incoherent, and some of it I now consider quite harmful.

Root Not

Around 2003, I attempted to start my own religion. Based on science. Yeah, I mean everyone tries that at some point, right? I wanted to produce a synthesis of eastern wisdom, rave culture and modern physics. I wrote pages and pages of insights,

diagrams, slogans, symbols, all just plucked out of my own head with no reference to any evidence and very little reference to previous philosophers' thought. I thought it was genius. I felt like a genius. Tons of inspired far out stuff poured out of my head every single day. It was entitled "The Root Not Foundation For The Advancement of Humanity", and I still have all that scrawly paper stashed away somewhere.

What I came up with was mostly worthless piffle, why? Many reasons. And not because it was "crazy". There's nothing wrong with crazy as long as the crazy meets certain criteria. Root Not didn't.

In retrospect the essential problem was that I was more enamoured with the sheer sensation of inspiration than I was with its product. The *feeling* of being inspired was my drug, and I spent all my time attempting to get my brain to synthesise this drug. Or indeed, taking actual drugs in order to obtain insight. To be inspired was my *raison d'être*, and I would do anything to maintain that inspirational feeling to the extent that all the other boring, necessary aspects of creativity got elided. I judged the value of what I was making purely on the basis of how inspired I felt when I was making it. Why? Because I had the idea stuck in my head that the feeling of inspiration was the signifier of some kind of direct communication with deep platonic structure in reality, and that if you are "seeing" that reality you couldn't possibly be wrong. If you can just get inspired enough, everything will turn out awesome. It's a nice idea, but, alas, you can feel fantastically inspired and feel like the universe is revealing herself to you in all her glory, and still be quite spectacularly wrong.

Having said that, I did make bloody loads of tracks, and probably all my best known and most well received tracks came from that period. So maybe I was right about artistic inspiration, if not the philosophical.

What I didn't really get back then was that it wasn't a case of coming up with a world model that *included* all the best things from scientific research, artistic expression and spirituality. If you just bundle all these together what you end up with is exactly the mess you started with, but put into a new bag. What I think I really needed to do is use the core of each of these disciplines to get rid of the unnecessary bullshit in each of the others (in boolean logic terms an *exclusive* or not just an or... or the square root of not?).

Every discipline, without rigorous attention, accumulates bullshit over time. Stuff that somebody famous and important said becomes enshrined as sacred. Random Memes get glommed onto bodies of knowledge. Misreadings and misunderstandings become more famous than the sources of knowledge that they misunderstood. Tacit knowledge gets lost. Disciplines become unfashionable. Discipline becomes unfashionable. Fads spread, and the essence of the signal gets drowned in noise. Art is full of bullshit, science is full of bullshit, spirituality is packed to the gills with bullshit, but nevertheless there's *something* meaningful buried in there, right? So then the idea would be to get rid of the bullshit and find the places where these overlap self-consistently. This is not really what I was doing. I was just picking my favourite bits of everything and then adding some of my own bullshit into the mix.

Nevertheless, I still think I was onto *something*. I still think that there is something fundamental located at the Venn intersection between science, art and spirituality that touches at the core of all three disciplines, and could be the most important nexus of human thought over the next century.

Whilst most of Root Not was dreamy vagueness, with no testable predictions whatsoever, I did make one quite radical prediction. This was that Physics' GUT (Grand Unified Theory) that encompassed both General Relativity (the physics of the very large) and Quantum Mechanics (the physics of the very small) would *never* be found. Not because human scientists were too dumb to find it, but because the universe was fundamentally dualistic, not monistic, and that the universe comes into being as an interaction between two mathematically incompatible principles. Indeed, no such theory has been found in the intervening seventeen years. Hurrah! Genius me, or what? Hmm. Would I stand by that prediction now? Hell no. I don't even really know the reason why QM and GR are incompatible according to present theories, so the chances of me making any meaningful prediction on that basis of something I don't fully grasp are pretty slim. One of the things that made me stop this whole nonsense was that the internet came along and revealed quite clearly that there were thousands upon thousands of wannabe Einsteins - physics crackpots spouting unfalsifiable bullshit that they had "seen" in a moment of stoned inspiration and had then set about spamming every single physics forum and pop-science documentary comment section with it. It is far easier to see the failings in others than yourself, and it is painfully transparent that these GUT cranks are

merely deluding themselves that they have “solved it all” in order to make themselves feel special. I saw that I was in danger of becoming *exactly* this kind of twat.

The internet helped me to see the ugly side of inspiration. Thanks internet, you depressing buzzkill, you. So I vowed to knock all that bollocks on the head and determined to actually study this stuff properly. I would pay attention in class so I didn't spout arse.

Eclecticism

So you could argue that the problem with my eclectic Root Not religion was exactly the same problem as with this track? It's a bunch of influences dumped into a bag with to real coherent connection between them. Drum 'n Bass, 90s punk metal, 80's pop, Van Halen style tapping, Queen, Gregorian chants, Monty Python, The B52s, They Might Be Giants, kid's TV music, and the bloody Beatles again. Is this an incoherent mess? I don't know, because I've been sitting in the middle of this mess for several decades and it all looks perfectly reasonable to me. I guess to another person without these exact cultural touchstones it looks like an amphibological pile of bric-a-brac. It probably looks to them rather like my wife's system of organising her clothes looks to me, i.e. the aftermath of a suicide bombing at a jumble sale.

A Czech Drum n Bass DJ once said something I found interesting. When I was describing a particular mix of influences, he said that this was exactly what British producers always tended to do: try and combine different styles that shouldn't necessarily be combined, and he sounded as though he wasn't particularly down with it. Despite the fact he produced music in a multitude of styles under different names, he would only ever do one style at a time. He seemed of the opinion that people should just make music in a particular style, and make it as purely *that* as possible. This kind of exploded my head a bit, as my philosophy, and that of many of my British buddies is that you should always try and mix things up, or rather you shouldn't let "Da Rulez" hold you back. Indeed, I would claim that the history of British music, and the thing that has enabled the British music scene to punch so far above its weight, is precisely this melting-pot smashing-stuff-together philosophy.

Whenever I go to a club night and they play exactly the same genre of music all night, all weekend even, I get incredibly bored². This is what I liked most about the London scene I was a part of, and by extension festivals like Bloc and Bangface, there was always a great tolerance for many different styles, and none of those styles is taken so seriously that they become dogmas.

I have to say there is a tiny part of my brain that still thinks British music is the best in the world. There was a point in time where this was uncontested in my mind, and indeed that was the general feeling across Britain, but we've grown up a bit since then, and probably lost our arrogance... Or just lost our edge. British music is a bit like British cuisine. All the best bits usually aren't actually "British-British", but because we've been willing to absorb so many cultural influences, and we have the ability to pick the best of things, over time it just became an eclectic stew of brilliantly tasty stuff. We are discerning kleptomaniacs. Germany could learn a bit from that.

But actually I can kind of sympathise with this strict demarcation. If you're making a jungle tune, then why not make it as jungle as it could possibly be? Why not be the Junglest Junglist in the Jungle? I guess there is a craft to absolutely nailing a particular style... there's nothing intrinsically "anti-creative" about adhering completely to a pure set of stylistic constraints. But I strongly suspect that if *everyone* was that categorical about this, then music would get very boring indeed. There's not a single style of music that didn't evolve from a multitude of previous styles. I also believe that some people *have* been very categorical in their scenes, and verily, their music has got very boring indeed.

On the other hand, if everyone mixed genres all the time, then genres wouldn't even come to exist, and that would come to be a boring world as well, because without distinct styles, where would be the fun in mixing them? Without anyone taking their niche seriously, there would be no one left to parody. It points to creativity being a balance of divergent and convergent processes. So, I say, some poor imperial lackeys have to do the manual labour of assembling a strict set of musical tropes so that we Brits can come along and gleefully smash, mish, mash, and appropriate them all up again for our own amusement, what? No Rules Britannia, old fruit!

² This did not apply in the early days, when I could happily dance to pure unadulterated techno for tens of hours straight. But that was when it was utterly *new*.

So in the spirit of mixing genres, we're going to ask ourselves if science can really be mixed with art. If spirituality can be mixed with science, and if art can be mixed with spirituality. Whilst the Root Not Institute For The Advancement Of Humanity may be defunct, the actual advancement of humanity is not. Not just yet.

Truth Seeking In Science, Art and Spirituality

I would describe myself as a "truth seeker". Phewee! This smells cheesily pretentious, doesn't it? But anyone who has a desire to really know what's going on, and a willingness to invest time and effort into learning things, is a truth seeker. I have spent my life veering between seeking subjective truth in art and spirituality, and seeking objective truth in science and engineering. These things don't always sit together comfortably, but they share many traits.

In fact, I would say that the fact they don't sit well together is one of the things that is valuable about trying to do both. When I'm in an extreme objectivist mood, or an extreme subjectivist mood³, both these states of mind are more limited than being able to hold both these things in your head at once.

Truth seeking is not necessarily a matter of sorting everything in your head so that it's all perfectly self-consistent. Whilst enforcing self-consistency is an important part of coming up with a world view that is likely to be correct, it may be that the best way to keep your mind flexible enough to arrive at that point is to keep lots of contradictory thoughts floating around at the same time. Since we can say with some certainty that our species is still some way off arriving at a wholly self consistent philosophy of everything, the likelihood is that hedging your philosophical bets with a few pet inconsistencies is a reasonable strategy.

In my music there's lots of contradictory influences floating around. For instance extreme melodic complexity is very much at odds with rhythmic power. But, damnit, I want both. It's no coincidence that James Brown's funk stripped out most of the chord changes of soul. Staying in the groove seems to entail stripping out the tune. If

³ You don't wanna be around me in either of these moods.

you try to apply an intricate chord sequence to techno, you will end up with something awful (I'm thinking something like that trance version of Barber's Adagio. Ugh.). Me, I've tried, unsuccessfully, to push back on that, and this is a tension in my body of work that, hopefully, makes it different. It's a fight between different modules in my head, and the best tracks seem to be the ones where every module has had some kind of influence. I think if I just allowed one of these tendencies to win then the music would be more boring. Maybe easier to sell, but more boring.

Equally, when writing any kind of polemic, it is helpful to keep contradictory positions alive, properly alive. If you're arguing against something, then you need to be arguing against the strongest version of that thing, steel-manning. When you argue against the best, most faithful version of the contrary view, the one that your opponent would really hold, you are steel-manning. If, through your own skill and good faith, your own steel-man argument turns out even stronger than your real flesh and blood opponents ever provided, then so much the better! Because after all it's not about "winning" - we want to get to the truth, not just destroy people we don't like. I do hate those "Debates" where two opposing viewpoints are pitted against each other like a boxing match, and even more I hate the reposted YouTube videos that just take a 30 second snippet from the debate and title it "so and so⁴ destroys such-and-such-ist". I have christened these clickbait debates "de-baits".

You can go even further with keeping contradictions alive. Your brain is not as inflexible as you might think. You could hold one view in the morning, and really really believe it, and a completely different one in the evening, and really believe that. Beliefs can be like different colored sunglasses. You can pick them up and discard them as the occasion demands, depending on what color you would like to see the world in. You can also have different concurrent musical personalities that you keep running simultaneously. I have done this for as long as I can remember. I once just assumed that all these personalities would fuse at one point, and my final

⁴ 99% of the time "so and so" is Jordan "Feed Clogger" Peterson. Full disclosure, I do find some of what Peterson says interesting and insightful. His [Jungian analysis of Disney's Lion King](#) is undeniably entertaining. And let's face it, the fact that over a million viewers have watched his degree-level lectures on psychology is surely some kind of achievement. However, he does seem overly infatuated with his own ideas, and he is just plain wrong about quite a lot of stuff, but hey, that's not actually a crime. The question is whether he will accept *any* responsibility whatsoever for the arseholes who use his stuff as an excuse to be arseholes. Thus far I haven't really seen that.

style would then emerge, like a magnificent unified theory of everything... but that still hasn't happened. It's still a dualistic mess. Sorry.

Belief is one place where science and religion really diverge. Science says the more deeply a belief is held the more likely it is to remain wrong⁵. But then *if* there is only subjective reality, and what you believe shapes your actions, and thus your reality, then the more deeply you hold a belief the more it will shape the reality you live in. See, I can think both these things in the space of one paragraph, and both compel me. I'm fine with that. but I think "deeply held beliefs" are destructive and limiting. What we need far more of are "delicately held beliefs". One should hold a belief as one would hold a vintage china tea-cup, little finger held fastidiously aloft. One should practice believing six impossible things before breakfast, as the Red queen recommended to Alice. That's not to say there's absolutely no way to find out which belief is the least impossible though. There is. It's called science.

I notice a great tendency for people to be generally nice about other people's music. In other words, objectivity is sacrificed on the altar of protecting our feelings. This is nice, but doesn't make for better music. This niceness stems from two sources. The first is just the fear of hurting someone. Music is such a deeply personal thing, telling someone they're shit might just break their heart. Best just to tell a white lie or two. The second is a more tricky philosophical viewpoint - that since music is a purely subjective thing, then all music is equally valid. Some would claim that there is literally no way to say one piece of music is objectively better than another. If this is the music you choose to make, that's fine. If you enjoy it, who am I to say its shit? Who am I to say Mahler is more masterful than Minaj, or that the Beatles beat Biber? And who am I to say the first song I ever wrote was worse than the last? Can there ever be objectivity in the arts? Actually, I say yes.

Science and Art

Iterative Experimentation, Objective Functional Music

⁵ To fully get into why that is true we need to get into Bayes Theorem. Hopefully we can do that in a later chapter, or you can just watch the excellent [3blue1brown video](#) on the topic.

Science and art and spirituality share many things, not only in what they seek to achieve, but more the kind of mindset it takes to do them well. Many of these traits are also somehow contradictory. [Maintaining contradictions is an ability that has been found to correlate with being highly creative.](#)

- Questioning yourself, questioning the process, questioning authority and what's gone before. Faith in yourself, faith in the process, faith in your heroes. Absorbing influences, transcending influences.
- Eliminating ego-driven bias. Being hugely ambitious.
- Transcending the mundane. Patience. Sweating the small stuff, but yet keeping your eye on the big picture.

The astute among you may notice that self-consistency is one of the most important properties of the scientific world view, and yet maintaining contradictions is one thing you need to do it well. Which is itself a bit contradictory. But no, there's a difference in what you are aiming to achieve and the tools you use to get you there. We don't point at collections of scaffolding and cranes and scoff that the architecture is crap, we understand that the scaffolding and cranes will go away after the building is finished. It is similarly stupid to scoff at the contradictions and grey areas within our current scientific world view. No one is pretending it is entirely finished.

Your attitude to your own thoughts is important in determining how those thoughts develop. In science you must be deeply non-attached to your own thought processes, in meditation too, and in artistic practise. You think that this thing is a certain way, but is it really? Is that your ego talking?

Perhaps the most important thing in scientific debate is getting over yourself to the point that you can admit that you were wrong. Not just "that thing I said the other day - that was not completely true" but "That thing I spent ten years working twelve hours a day at the expense of my social life, marriage, health and sanity - that was an absolute crock of shit. I have basically wasted my life". If that's not a call for ego-loss then what is? Science calls on us to abandon the obvious reality we see before our eyes - because the "obvious" turns out to be what our brains dress up as obvious for reasons of their own. What's going on in your head has as much to do with reality as Star Wars has to do with real Stars, or real War. Of course, real human scientists are

biased and ego driven like the rest of us, but it is the striving to get better, and the systems by which this bias and egotism is transcended that is the crucial thing.

Getting out of our heads is going to take a long time, but we *are* getting there.

At the same time as skepticism, it takes faith. Whilst admitting everything you are currently thinking may be bullshit, you also need some kind of faith in yourself as a truth seeker, and faith in the truth seeking process, otherwise what's the point?

This balance between faith and skepticism is also precisely what you need to apply to music. You need faith in yourself as a musician, you need to have faith in the thing you are making, and yet you also need to question everything. Can you be better? Is what you're doing just a result of habit? What is the useless crud in this track you're making that you can clear away? Is what you're saying the truth, or is it just posturing? Is your judgement of music biased in some way? How could you transcend those biases? When you collaborate with other musicians are you really listening to them or are you just doing what you normally do but with other people in the room, and actually learning nothing? When you're practising technique, are you actually closely and attentively listening to the sound you're making or are you just going through the motions and actually just getting better at playing something badly? Are you being willfully blind to deficiencies in your own creativity? All of these challenges require some kind of careful data gathering to detect and some kind of ego-loss to overcome.

The most important application of this intellectual honesty to music is in developing an effective practise routine. The major difference between self taught musicians who end up incredible, and self taught musicians who plateau and stagnate, is how effectively they practise.

I would categorise myself in the stagnating category - but then everyone stagnates occasionally. Indeed, practise is such a demanding thing that it is impossible to not be stagnating at *something*, right?

The key to effective practise is honest listening. It's easy to kid yourself, especially on guitar. Guitar is such a nuanced sensitive instrument that it is perfectly possible to kid yourself that you "can play" something, when you really can't, or at least you

can't play it so as to make it sound good. It's possible to play all the right notes, in the right order, but still produce an absolutely awful noise. I am only now admitting to myself, after thirty years of playing guitar, that I really suck at quite a lot of things. That's not an interesting observation, what's interesting is that

- I believe that it was only by studying science that I confronted the levels of intellectual honesty that's required to be able to face up to my biases and technical failings, and correctly diagnose my faults and propose practise regimes to fix them.
- It was only by making extremely detailed minimal electronic music that I gained the precision of auditory perception to judge the sound of my guitar playing at a microscopic level.
- It was only by understanding the trance-like states induced by repetitive music that I gained the patience, immersion and focus to really practise repetitively for long periods.

I learned guitar very quickly during the initial three years of learning guitar, and became what I thought of as competent fast, but then I got stuck. I think I made a number of major mistakes: I was not seeking out areas of weakness to improve, because to admit to weakness is an insult to one's ego. So much of my self esteem was tied to my guitar playing that to admit that I wasn't that great would have been too destructive to my fragile sense of self. At some points music was all I had. Besides, trying to play new things you can't currently play is actually painful and hard, and makes you feel like a loser. Now if I try something that makes me feel like a loser then I seize it with both hands as something to work on, slave away for months, and only then when I have proved to myself beyond all scientific doubt that I suck, only *then* do I give up in exasperation.

In fact the sensation of hitting a wall and wanting to cry and give up *is* the door handle - the repeated turning of which will lead you to excellence. I could play the solos of my heroes, but this was perhaps more a question of overtraining. I could memorise and play *those* solos, but not the space of all possible solos at that level. And, as I listen to my old cassettes, the thing I want to scream backward in time to my 18 year old self: NONE OF IT WAS IN TIME. Practice your goddamn timing you moron!!!

The second mistake was that I was focussing on the physical act of playing guitar, and not focussing my attention on the actual *sound*. You would think this would be the easiest thing in the world. But it's not! It's hard to really listen to yourself, and the trickier then thing you're playing the harder it gets, because there's less headspace available for listening. As I say, the most shocking thing of all was how out of time I still play. I am now recording various simple things along to a click track and I'm seeing some timing errors of about 35ms. This is huge, and to my ears, uber-precise-techno-trained as they are, it sounds like shit. So now, I have designed a practise routine to improve it. It involves trying to play techno on guitar, and strangely this seems to be evolving into a little micro genre in itself, which is kinda cool.

And YouTube lessons are a veritable gold mine of tips. There are some superb teachers to be found on there, my favourite right now being [Guthrie Govan](#), who is not only mind meltingly incredible at almost every aspect of guitar playing, and not only an engaging teacher, but also has laugh out loud comedic timing and wryly humorous turns of phrase. Even if you don't play guitar there is some great advice.

Strange to say, but I think I might have made more strides in getting better at guitar in the last few months than in the previous twenty years, and that's almost entirely due to bothering to look at resources on the internet and actually heed their advice.

Conduct your own experiments

The artist must carry out experiments, tests of hypotheses, both as means of creating novelty and also as a means of finding their own opinions, styles and feelings. Experiments must be run to test and practise technique, but also to try out statements and ideals, "I believe I can do this with music" is a belief that is constantly tested. "I believe music should be *like this*" is something that can be tested. Like science, music is an iterative process, you try something out, you see if it works. If yes, you make it routine, if no, it goes in the dustbin.

The longer term goal of my art has been to experiment with my sense of self, my ideals, my place in society, to develop my sensibility to sound, structure, culture,

nature and other people. I see music as a kind of microscope or telescope by which I can better see inward into my own soul, or gaze outward into the cultural cosmos.

These are lofty ideals, and I've by no means lived up to them. But it's worth stating them again, and it's worth repeatedly measuring oneself up to them. You should not be afraid to aim high, and you should not be afraid to fail. It is better to spectacularly fail to do something spectacular than it is to trivially succeed at doing something trivial. I see an awful lot of people being extremely competent at banality. Very few people really conduct serious experiments, as in experiments with who they can be. They just stick with how they seem to have turned out. The best musicians are like beacons of what can be done in this regard. Everyone has an imagination, the hard part is liberating it.

One of the things that drew me to dance music, and it is for this reason that most of my live shows were dance-oriented, is because a club environment is an *objective* experimental test of your music. You can see immediately: people respond in a very honest way. They either move or they don't. People either join the dancefloor or they leave it to do something else (and even your best friends will be *ruthlessly* callous about that). The *way* they are dancing tells you directly about whether the music is doing what you want it to do. It's not like more passive listening, where people were stuck in their seats and you get polite applause at the end whether or not anyone was paying attention. The body is slightly more honest than that.

Aside from the shallow self-gratification of seeing sexy people doing sexy moves to the music you make, the deeper point is that dance music, because of this link to the body, provides an artist with a route to integrity through the process of producing something that is purely functional. Techno is a machine for dancing. It can get away with having no stylistic frills, no baroque ornamentation, no empty posturing or cultural in-group signalling. If the beat is good, people will dance. I seriously believe that danceability is a fundamental, objective property of music, one that could be experimentally tested. It might be evolutionary in origin, it might even be some platonic feature of embodied conscious information processing. It is telling that our very distant musical cousins, birds, also dance. Another pet theory of mine is that what happens when we dance is also linked to using tools, and working as a team. Almost all tool use needs some kind of repetitive movement. You can imagine the physical synchronicity of working with your tribe on difficult tasks like building a

dwelling or preparing food would need a special state of mind to help people coordinate and feel good about doing something that normally would be exhausting and unpleasant. I dunno, it's one of those embryonic theories I haven't got very far with, and is probably wrong, like the platonic thing.

The objectivity of dance music may be one of the reasons that dance music genres do not come and go as quickly as other popular music fashions. The genres of House, Techno, and Drum and Bass have more or less been consistently popular ever since they were born. This staying power is both a blessing and a curse. In a way the objectivity of it drives the sound into a stylistic cul de sac, over time it seems to have become optimised such that any experimentation will take you away from the optimum beat.

In addition to being minimal in the basic sense, in that it doesn't have many different noises in it, minimal dance music is also minimal in a cultural sense, in that it doesn't have much extraneous cultural baggage. The only stuff that's there is what is necessary for dancing, everything else is stripped away. Minimal techno is like a kind of end-game for music. It is like a subatomic particle. You could imagine that a completely separate parallel human or alien society would also discover techno, and it would sound roughly the same, in the same way that they would also discover the electron, and the science of that would be roughly the same.

Perhaps due to this anonymous "objective test" aspect, techno performers feel no need to dress in interesting ways, play with notions of performance, put their souls, their voices or their bodies on the line. There is no flamboyance, no exposure of oneself, personality is superfluous. There is some personal courage required to stand on stage with a laptop and bang out thunderous kick drums, but far less than standing on a fifty meter tall doric column in a skintight flashy LED-sequined suit singing about masturbation (random example, feel free to ignore that suggestion). This type of flamboyance is seen as unnecessary, perhaps part of mainstream celebrity culture, where the flamboyance of the artist distracts from or even takes the place of the art. Whilst this is a fair criticism, it also means that we miss out on a huge arena of experimentation, we miss out on a whole realm of artistic possibility. In a nightclub, the music is one component of a bigger picture: fashion, visuals, social contact, hedonism, sexual display, altered brain chemistry, escapism, tribe forming... the music itself is only a single layer of sauce in a much bigger cultural

lasagne. To eliminate these as unnecessary distractions from the music is to miss out on much of the full stack transformative experience that musical events can bring about.

I miss the clubs of the nineties that really went out of their way with decorations and environment. Many of the coolest clubs now seem to make no effort in this regard, they pass off their lack of decoration as industrial wasteland chic. Things have become so stripped down and "functional" that we have lost a lot of colour and playfulness. The mainstream UDM⁶ festivals seem to have completely monopolized bright colours, pretty lasers and decorative nonsense, and that's a shame, because they do it in a really crass way, and in a way that is completely devoid of any conceptual content. There's just a dude behind the decks waving his arms like a twat, surrounded by a massive multi-coloured swizzly-wizzly light show and fireworks and confetti and random inflatable shit everywhere. Why are we watching this again? Imagine what an incredible stage show you *could* have had with that budget if the performer actually, you know, had some ideas. Maybe you could actually have a show that meant something. We'll never know. Wagner and his ilk may have been Nazi windbags, but I do imagine they'd rustle their shit together to make better use of all these lasers and screens for their Gesamtkunstwerken. At least Wagner's stage shows had *some* conceptual integrity. Or maybe he too would just be chucking the crowd loads of inflatable norse helmets, swords and plaited wigs, miming tweaking 'too hot to touch' knobs to his prerecorded build-up to his [Tristan Chord](#) drop which rather than resolving after four hours resolves every fucking five minutes ad infinitum... like all these other superstar DJ cocks.

Where were we...? So would you say that the experimental method has a place in music as well as science? Yes I would, and thanks for asking, as I think I may have briefly lost my train of thought there. In addition to the experimental method, I think the idea of *explanations* is also a deep and important link.

Explanations in Science and Music

Part of science is the act of communicating new concepts, and this goes for music too. Music is peculiar, in that the "core" of a piece of music i.e. the good bit, is often

⁶ Unintelligent dance music

not necessarily present for most of the entire temporal duration of the music. Whilst a painting is always "there" the main point of a piece of music is not always "there". In dance music, like Tristan and Isolde, quite often most of the music will be preliminary preparation work, a build up to something later, or a breakdown that moves you *away* from the core. The real "point" of a piece of music could even be a single moment in time, a single nugget of experience with no real duration at all. A mere transition from one state to another. The rest of the piece of music is in fact just a vehicle by which this nugget is "explained" to the listener.

Science necessitates explanations, not just in explaining to bewildered students what the hell a tensor is, but the actual fundamentals of science are explanations at heart. Most of the process of explaining General Relativity is providing a mathematical framework that is designed to eliminate previous concepts of what space and time *are*. The theory itself is just a single formula, but it takes weeks of training in the mathematical tools in order to understand what the hell that formula is meant to mean. The theory is not *just* the formula, it is the structure of the *explanation* of that formula. Einstein himself had to go through the process of explaining what spacetime was to himself as he worked on the theory. It's basically all just a big breakdown and build-up, it's just an explanation, and by some linguistic serendipity, it is an explanation in both senses of the word.

Dance music *explains* itself by displaying its building blocks, hiding and revealing its structure. Most of a track could be simply wiping away the past, eliminating the existing information about what you think you might be listening to, clearing the dancefloor's collective mind in preparation for something else to be constructed. Without the clearing, there is no space for the delicate atemporal musical moment to flourish. The peak experience of non-linear time in a top class club night similarly takes hours and hours of dancing to really understand. If you turn up late and just waltz into the room at that peak point, not only are you doing a weirdly old fashioned dance in the wrong time signature, but you also have absolutely no idea why everyone is getting so excited about the music at that particular time, which to you, the dance floor newb, sounds more or less the same as any other bit of any other track.

So much of the effort of making music in the studio is spent working on "presenting" or "building up to" an idea. There is the idea, which can take a few hours to discover

and nail down, which could be a single two second loop, and then there is the dressing up of the idea into a digestible form, which takes days and days of work. I really wish that wasn't the case because it's a royal pain in the butt. I wish I could just have an idea, dump it down and expect people to bear with me a bit and give the damn thing the benefit of the doubt, but no, that's not how music works it seems. Another related pet peeve of mine is that one's piece of music will, in general, be judged on its weakest point not its strongest. You could produce the most incredible idea, but if you screwed up just one or two of the notes then people will immediately categorise you as an incompetent failure, and dismiss the whole thing as a piece of crap. A single moment of imperfection can ruin an otherwise spellbinding piece of music. It sometimes feels to me as though the vast majority of time I spend in the studio is just me trying to wriggle out of any accusations of incompetence from this imaginary jury of nitpicking pedants.

It would be so much better if the heart of things was just instantly understandable by people, but it's not. Great efforts need to be made, and seemingly all that effort must be made by the artist, and none by the audience. The entire onus of explaining the music is now on the artist, and the listener is expected to expend zero effort to comprehend. If something doesn't give you payback in five minutes, you switch off. This is why dance music has degenerated from being an eight hour epic journey up to the transcendent pinnacle of atemporal sonic experience, to being a series of miniscule over-hyped buildups and drops every few minutes, which is roughly like riding a mini-tricycle over a series of molehills, or accidentally taking a fairground ride designed for children. Whenever I involuntarily find myself at "mainstream" UDM events I feel like a fully grown, miserable adult man squeezed into in a fibreglass teacup with my knees round my ears, juddering slowly around a tinkling contraption of flashy lights and tinnily tooting organs... with the parents who put their more appropriately-sized toddlers on this ride giving me the evils. Cheap Dubstep, Trance and Psytrance, I'm looking at you.

I have exactly the same feeling watching bad science documentaries. When people try to "popularise" science, they dumb it down in order to explain it. Every single step of the argument has to be understandable by a six year old. Anything that might be tricky is side stepped, to the extent that the chances of grasping anything valuable at all fall to virtually zero. The thing is, you don't have to do that. You really don't. Yes, it would be great if the six year old could get something out of your talk,

but it would also be great if a scientifically literate person from a similar field could too. Not every part of the talk has to be understandable by everyone. It is perfectly possible to dump something super dense and hairy into an otherwise gentle introduction. As long as you can bring the talk back on the rails again, and people can continue to follow the entire narrative, it doesn't actually matter that you lose a few people temporarily. In fact it actually *helps* those people's longer-term process of learning, because you've given people a glimpse of a few rungs up the ladder, something that they've not quite attained but could be within reach for them if they stick with it. It's absolutely fine for people to have a few WTF⁷ moments, because those are the moments that will spark their curiosity, and that they will come back to and dig into again. Your responsibility is not only to give people some information to take away, but also keep them coming back for more. The WTF moments, correctly delivered, are the moments that will make them think they need to go on with the learning process and up their game. It is the incomprehensible that is the carrot for those who have a real desire to comprehend. When I listen to a podcast about something, the bits I don't understand are the *most* interesting.

Similarly with music. Music doesn't have to be dense, incomprehensible intricacy from start to finish. Neither does it have to be blinking obvious noddy duplo beats for dum dums. It can actually be both. It can swim in and out of focus, it can be gratifying and elusive at different points, or even have understandable and incomprehensible layers going on at the same time. It's OK to lose people, as long as you find them again. In fact I would say you should always have at least one moment in a performance where you "act out" and throw a bit of a musical tantrum in order to put the audience in their place. I usually put this tantrum in the middle. As opposed to Aphex, who puts his tantrums at the start and the end. It doesn't matter, but you need at some point to show the audience that you don't need them. Treat 'em mean keep 'em keen.

"Experimental" music is not just people being deliberately weird because they hate humankind⁸, it is actually experimental in the same way that science is experimental. You make a change, and you see what happens. As with all experiments, there is some risk that things will go awry. To experiment with music is to run the risk that you will lose fans. To experiment with your own artistic

⁷ WTF: Want To Find out.

⁸ It is that, but not *just* that.

personality is to run the risk of losing your real artistic personality. But someone has to take the risk, otherwise we learn nothing.

Surely no one, these days, seriously believes that the latest genres are fundamentally, objectively better than previous ones. Nobody seriously believes that fashionable clothes look objectively better than unfashionable ones. No one seriously believes that Jazz is intrinsically just more valuable than Rock. Or vice versa. Right? It is no longer "betraying the faith" to switch from acoustic folk to amplified rock, as Bob Dylan did. It's generally recognised that Bob Dylan did it because he felt like it, and that's fine, we say now. It doesn't matter what style you make as long as it is good music. This enlightened view, I think, really only emerged in strength during the mid-nineties. I think it was basically my generation that tipped the idea of having "eclectic taste" into the mainstream.

It's an odd coincidence that my de-genrefication of my music taste occurred roughly simultaneously with the de-genrefication of music culture in general (not gentrification, genrefication. Or?). When I liberated myself from the here-and-now of a single sound, into the then, then and everywhere of plundering the entirety of recorded sound, so did everyone else. Some things got lost in the process. But it's a necessary stage on the road to objective reality.

What's happened is that people's assessment of the value of music has moved to either deeper or more shallow levels, depending on whose side you're on. Authenticity, vs. pure subjective momentary pleasure. Many of us have decided that we can judge the quality of many different styles of music, and hence moved to a more objective stance than simply saying "if it's not Thrash Metal then it's lame". And yet quite often it's only by restricting your value system to a single scene that you can really say what's better than what. I *know* that Pantera were definitely better than Megadeth. But were Pantera better than Autechre, or Wagner? All of a sudden it's a question without an answer. Bringing that back to Relativity, you might say that musical space somehow has a local metric but not a global one.

On the one side people are saying that their music is *the best* music, and on the other people are saying that no music is better than any other music. Surprisingly often it's the same people. Both these ideas are wrong, and I will illustrate why in a subsequent chapter, One Dimensional Man.

On some level we know that art is pointless and subjective, and yet it simultaneously can hit us with a more powerful impact than almost anything else. Why is that? Why would treating something as important when it's blatantly not be a useful thing to do? Why would the most meaningless activity seem the most meaningful?

My hunch is that it is precisely the fact that Art *doesn't* matter that makes it so important. We shall get back to this when Mike discusses the phenomenon of the Kumpo, but also I wonder: could it be a step on a journey to ego-loss? The most important thing you have - your self - may just turn out to be meaningless. You construct yourself according to the latest trends and in reaction to those around you. Your self is maybe your own most authentic work of art. The superstition of art could be a training ground for the de-superstition of the self. What in hell's urinals do I mean there? Well, as I discussed before, music has very much played a part in constructing my own personality. Who I am has been influenced by music. With music you can construct alternative worlds and alternative personalities. Who I am when I make a track, or perform on stage is not who I am normally. I feel I become a higher being, I move a certain distance toward an imagined me.

Daily mundane reality drags me down and tells me I am dull and limited: I am an employee, I am a passenger, I am a consumer, I am a body that needs feeding and cleaning and defecating. Music frees me from all these things⁹. I can sound however I want, I can be outrageous, I can dance however I choose, I can wear what I want, I can surprise people, I can sing about the weirdest shit I can think up. I can be magical, I can be wrong, I can shine, I can twist my mind into impossible knots, I can let my imagination out of its cage and let it scamper around with a squeaky toy in its mouth. I can think up a character and be that character. I can use bits of my favourite other people to make up that character. I can then let that character influence the real me. You can, in theory, do all of this in real life, but somehow music provides a space in which these transformations become easier, more fluid and maybe most importantly - more socially acceptable.

Art as a practise seems to involve *treating* something as objectively important when it's clearly *not*. It seems to make no sense, but maybe that's the whole point?

⁹ It's funny, but I hardly ever need to defecate on stage, though I know some artists have incorporated it into their act.

Precisely because Art has no objective value, this liberates our minds, because as soon as something is objectively valuable then all of a sudden too much is at stake and you have to lock your own personality down to whatever will most optimise that value. People are depending on you, shit gets too heavy and the wellspring of freedom dries up. You cannot play too many games with identity when you are a police officer or a surgeon or a pilot or a politician, or even a programmer. You *must* mould your personality to do the job, because important shit depends on it.

I see the notion of "Rock Star" as being an ideal state of self actualisation which could be a model of how future humans, freed of mundane employment and social strictures, would eventually behave. When nothing matters, everything is light, you are free. Instead of doing what you *should*, you do what you *can*. For me, being a "Star" is not about being famous, it's more about shining with your own light. This light being a result of the freedom to change yourself to express your deepest desires, highest values, and wildest imagination. More about remaking yourself into a more interesting being. At the moment, it seems to be the rule that you need to be famous to be a star, that you first need permission from the whole of society to be what you want. This is a bunch of tit. You shouldn't need permission from the whole of the world to be who you want to be. For one thing, that permission will never come, as the more famous you are, the more people want you to be what they want you to be, not what you want yourself to be. In my utopian future, everyone will be a star. Everyone will be the designer of their own lives. Everyone will be their own art form. No one will be allowed even 15 minutes of fame, because fame is a trap. Rather they will be allowed a lifetime of stardom.

This future was the one I saw club culture and rave culture striving towards in the 90s. Then something went wrong. [DVS1 explains this](#) transition well. One thing that went wrong is that the person on stage became the thing that you went to "see" again. Rather than being the person you went to hear. The people you went to "see" being the clubbers dancing. And you were one of them. You went to see and be seen. You went to see yourself. You went to see your best self, your most interesting, open, joyful self. Now you go to take videos of what's going on on stage.

Another thing that went wrong is that people started taking opinions too seriously. There has been a marked tendency in recent years for second albums to be shit, I believe this is related to the point above about art needing not to matter. The usual story is that people break through with an exciting first album, and then all of a

sudden they're successful, they're widely known, and people are depending on them. All of a sudden everyone has an opinion. All of a sudden people's wages depend on the sales of your new album. All of a sudden their music is objectively important. All of a sudden you have to deliver, and that can be very bad for creativity if it preys on your mind.

On the other hand - pressure itself can be very good for creativity. Nothing like a deadline, after all... So I wonder if this contradiction can be teased apart somehow...? I suspect there are two different things here: pressure to raise your game and deliver something *great*, and then the pressure to conform to an ungainly bunch of random acceptance criteria that have originated outside yourself. These external, static acceptance criteria are what kills creativity, not the pressure itself. My best gigs have been the biggest, when I'm most nervous I engage the most, I rise to the occasion. My worst were when I went in with a preconceived notion of what people wanted and played it safe. Different things!

What you need to do with opinions is see them for what they are, limited perspectives from a certain position. In the same way a sculptor must walk around the sculpture and look at it from many different angles, you must walk around what you're making and view it from many angles. And other people's opinions can be these angles. The thing with those opinions is that each person thinks that it is the "one true angle", and that the rest of your sculpture should be optimised for being seen from that one angle. You need to learn to take it onboard, take a long hard look from that viewpoint, and then walk away. In spite of being made up only of subjective, limited viewpoints, the sculpture is a real objective thing, has objective presence, has a real shape and has real objective value. Since there are so many simultaneous viewpoints that you need to take on board simultaneously, this means that it *cannot* be done consciously. The only way to optimise this multivalued utility function is by using the subconscious. We'll get back to this in One Dimensional Man.

A similar discipline to practising detachment from other people's opinions, is practising detachment from your own. One phenomena that has become the subject of many memes is the difference in how a track sounds the night you're making it, and how it sounds the morning after. It's literally like night and day. What appeared to quite obviously be a stonkingly massive banger at 3am will sound like a flaccid, toothless sock drained of all vitality the next day, very much how DIY party

decorations will look on a badly hungover New Year's Day. Both these viewpoints are valuable, take them on board as feedback. Try to dissect what it was that made you feel both these ways. Try and explain what made you feel so different. Absorb it. Move on. Continue the search for objectivity whilst admitting that it is impossible to attain in any particular moment. Ride the waves of elation and disappointment! Each one of these viewpoints is like a new way of testing your hypothesis of what good music consists of. Each fresh listen is a new experiment. This is why it's good to listen to your music in many different contexts. Does it work in the car? Does it work in a forest? Does it work at your parent's house? Does it work at a brilliant club night with loads of people there? Does it work at an awful club night with no one there? Would it work at a wedding? Would a five year old child be into it? You can test your music out in the real world, but not only that you can also test them out in your imagination: does it work at the bottom of the Mariana trench, or in space, or at your own funeral? Would it work if a meteorite was shortly about to hit the earth and this was the last track you and your loved ones were ever going to listen to? If a species of intelligent rats that had evolved a hundred million years after that meteorite struck, when the rat archeologists unearthed your hard drive and listened to what was on it, would it still slap? Would it work if it was played on a protest march against anti-science?

In other words, I believe that art can learn a hell of a lot from science, and excitingly, this process has barely begun.

Science -> Spirituality

Science and Spirituality are compatible

Science and spirituality...? Do they overlap at all, are they even incompatible? You can't just say they're incompatible world views - this is something I refuse to accept because:

1: Science emerged from spirituality, without dedicated christian monks and alchemist fruit loops we would never have had science, the original *motivation* was the same. The urge to understand and transform the world is a spiritual one.

2: We live in a single, unified cosmos built from simple processes - it would be decidedly strange if part of that universe was incompatible with another part (this is a subtle but powerful argument, search for "separate magisterium").

3: I love each one and find immense personal value in them. It would be rather dismaying to live in a world where one was falsified by the other. This isn't a reason to decide one way or the other but it is certainly a deep motivation.

We could get into the crusty old debate about whether there is or is not a God here. But that would be to waste my and your time, because that debate was done and dusted over a hundred years ago. The more essential question is how we find meaning in this world. God is provided as a solution to this question, and that has worked for many people throughout history. My hunch is that there are actually better solutions than God out there that could give people just as much meaning, but yet do it in a more persuasive, more self consistent and less divisive fashion.

I require meaning in my life. I have a deep yearning for something profound. But I'm not willing to compromise on the quality of my reasoning to obtain it. I'm not willing to accept something that makes no sense just to placate that yearning. And actually it's exactly that refusal to compromise that indicates to me that I have a sense of meaning that is deeper than the one organised religions provide. It is precisely that lack of compromise that indicates that I have a value system that connects me with the universe in a deeper and, yes, more spiritual way. I find the scientific view of the universe gives me way more meaning than the religious one. It inspires awe in me. It inspires wonder in me. It sometimes sends shivers up my spine. It turns the world from a meaningless, limited rat race of incessant social power struggle into a fantastic unfolding universe of curiosity and intricate pattern. It makes me feel small, humble, yet immensely privileged.

Science is repeatedly portrayed by its detractors as being "arrogant". This is an astonishing claim. In fact science exhibits far far more humility than religion ever does. How arrogant is it to admit that we are limited creatures that must be very

careful when we observe reality in order not to let our own biases distort our perception? How arrogant is it to admit that we can't do everything ourselves and require large teams of our peers to check our work? How arrogant is it to admit we have a huge way to go to understand things better, and must continually update our knowledge as new data comes in? Is it not humility to admit that we are miniscule lifeforms that exist purely by chance in a staggeringly vast cosmos? Is it not humility to admit that when we die, we really do die? On the other hand, isn't religion tremendously arrogant? How arrogant is it to assume that the creator of the universe thinks we're really special and watches our every move with intense interest? How arrogant is it to assume our belief system is perfect and will never need to be updated for the rest of time? How arrogant is it to assume we are the only lifeforms in the cosmos which has been designed for us? How arrogant is it to assume that this wondrously immense and beautiful universe is simply a kind of morality exam designed to sort us into yet another binary good/bad category, categories that when we die will forever define us?

Now, poor parodies of postmodern philosophy have gone mainstream. Via a peculiar and torturously ironic cultural twist, Christian conservatives have appropriated cultural-relativist arguments to defend their faith. Science, or "Scientism" is claimed to be "just another religion", based on faith, and therefore just as biased. Funnily enough, this argument doesn't even justify what people want it to justify. If everything is "just another religion" why should I now switch to yours (Christianity), in particular, rather than carry on with mine (Scientism), or why not flip over to Raelism or Scientology or Mormonism or something even more bizarre? If you claim your faith to be better than mine, why? If you then give me reasons, then surely those reasons will be an appeal to some meta-belief system that is not based purely on your faith, otherwise you have given me full licence to ignore everything you just said...

Trying to devalue science by saying it's just a religion doesn't exactly make religion look better - it sounds like you're trying to drag science back into the mud in which you're sat, it sounds like what you're *really* after is a better version of science. Which is, uncoincidentally, exactly what science itself *will* provide via continual self improvement.

I used to feel that Science's obsessive focus on objective reality was draining the world of subjective meaning. It is this clash between the objective and the subjective that creates a tension between science, art and religion. We sometimes have a nasty hunch that if we look at our feelings too closely they will become unreal¹⁰. If we explain a piece of music then it'll lose its worth. But fears about science 'ruining' spirituality are themselves just superstitions. Likewise fears about spirituality ruining science. If your quest for spiritual truth is running against how nature really works when you look at it closely, then it's not much of a truth you're finding is it? And similarly, if your scientific picture of nature cannot account for transcendent spiritual experiences, then that's not a truly whole picture of the world either. I think science and spirituality are really just invitations to one another to up their game.

Something similar to this attitude has been termed "poetic naturalism" by Sean Carroll, whose podcast and books I recommend highly. One of the things I most like about Sean is his gentle approach to reasoning. Carroll's calm avuncular tone is great - it's how open minded friendly debate about big ideas should be. He gives every viewpoint their fair dues, and argues for each side as carefully and as faithfully as he can, and admits honestly wherever things crop up that we really don't know. Yet he isn't afraid to draw strong conclusions and come firmly down on one side or the other at the end.

Me, I have come firmly down on the side of atheism. But that's not to say that I think everyone should be an atheist, regardless of where they are in the world, or where they are in their own spiritual journey. Indeed, one of the things that the psychedelic experience gave me was renewed faith. Psychedelics became a kind of religion for me, through that I got interested in Buddhism, and that gave me some vital guidance. The fact that I have passed through that stage and ended up somewhere else doesn't mean that I was wrong to have ever had that faith. Faith was a lifeline that was exactly what I needed at that time, because I was excessively cynical and borderline depressive. A sudden transformative experience that revealed a deeper spiritual reality got me out of that hole, so who am I now to say that faith in God could not provide to others what faith in the psychedelic experience provided for

¹⁰ If your feelings are intensely negative, then insight into their unreality might actually be immensely helpful.

me? Every one of us is at a unique point in our own development, and different approaches to truth can be valuable.

Bad Science

Many of the criticisms of science are based on misconceived or outdated versions of it - a science that claims that subjective experience is not real, that we're *just* atoms, nothing means anything, we're *just* robots spreading our genes, etc etc. These panics are misunderstandings of naturalism. Just because a piece of music is a string of digital numbers doesn't mean it is "just" numbers, does it? Similarly, just because something is built out of atoms doesn't mean it is "just" atoms. Just because my live set is made of binary digits doesn't mean my audience stands there motionless complaining that they can't dance to "just" ones and zeros¹¹.

There's no "just" in nature - that's something our own superstition has painted on top of it. Rather, at different levels in nature there are different patterns, and scientific investigation attempts to reveal and understand those patterns, whether it be the behaviour of electrons in chemical reactions or the behaviour of large masses of air in weather systems, the behaviour of supermassive black holes, or the behaviour of someone's brain under the effects of drugs and music¹².

So let's be clear what reductionism is, in it's best form. It is not just sweeping the mess of reality under the carpet. It is not a cold, calculating, inhuman, hollowed out detachment. It is the art of working out *precisely* what you can ignore and when. It's the art of ignoring stuff that isn't important for your current investigation, it is the art of shepherding the irrelevant into a manageable zone. If you want to achieve anything meaningful at all, you will absolutely have to ignore quite a lot of other stuff in order to do it. In fact, the brain is an organ that spends a great deal of its processing power on working out what to ignore. This is what attention *is*. Science is a software upgrade for our attention system, in that it uses more sophisticated and strategic methods of ignoring stuff. One more delicious irony is that the people who whinge about reductionism completely ignore this.

¹¹ Some analogue purists *will* tell you can't dance to ones and zeros, and you must use continuous voltages. They are wrong too.

¹² Or the behaviour of supermassive black holes under the effect of drugs and music. Sign me up for *that* research grant.

If, like me, you find physics delightful and meaningful, that's what you have brought to the party. On the flip side, if you find it empty and meaningless, that's your own problem too. To attempt to judge an extremely low-level phenomena like particle physics via a high level concept such as "meaningfulness" is just to be confused. These levels are so far apart that it would be very unlikely that the same emotional toolkit would apply to both. Being afraid of reductionism is just a confusion of levels. Just because a way of talking about a level doesn't apply to another level doesn't mean those levels are "incompatible". Indeed, poetic naturalism says they *must* be compatible.

That's not to say no scientists have royally screwed up in this exact regard. Occasionally reductionism gets a bit out of control, and starts denying the existence of things that are blatantly real. In particular Psychology in the fifties and sixties fell under the thrall of rather terrifying doctrines, I find Behaviourism and Functionalism somewhat dark and weird ideologies. For a long while, subjective conscious experience was considered outside the domain of science, and that, for some disturbing reason, led to people denying its existence altogether. Which is strange because the only things we ever really know about are subjectively experienced. So you are denying the only thing you know there is! Many Neuroscientists and Philosophers, even some of my favourite ones like Dan Dennett, do still claim that [consciousness is an illusion](#). I'm open minded to this possibility, but I'm skeptical.

It's a bit like the people who take the Matrix just a smidge bit too seriously, and who claim reality to be an illusion. I admit I used to enjoy saying this, probably just me attention-seeking again. But it's a pretty silly thing to say. The definition of illusion was, until you came along and confused everything, something that was "not real". So by claiming "reality is an illusion", you've run yourself out of any real stuff to measure the illusion against. Neither the word "real" or the word "illusion" mean anything any more, and you've just uttered a more or less empty statement. Well done, you. But Steel-Friending this argument for a bit, I guess what you really mean is that *some fundamental aspect* of what we consider real is somehow confabulated by our minds. In other words something you think is necessary for a thing being "real" was in fact contingent. And this is often the case.

So, for example, the idea that my consciousness is a singular, continuous thing that maintains some fundamental identity over time, *is* almost certainly an illusion. It feels like the same bit of me that feels aware and alive is also a unified nugget of me-ness that moves through time. A soul, if you like. I go through life under the illusion that my awareness is somehow the same thing as my ego. But this is quite easy to take apart by rational arguments, furthermore one of the goals of many meditative practises is to really *see* through that illusion in a direct, moment to moment way. The self, or ego, is an illusion in that you can actually *see* how the illusion of it is constructed by thought, or *as* thought.

Here we are dealing with some aspect of what we thought of as an essential aspect of consciousness, and then we suddenly find that it is something that is cooked up by our brains for weird reasons of its own. But this doesn't mean that *nothing* is real, or that everything is in the mind. The illusion is real, for a start, in two senses actually: there must be both a real, instantiated substrate that processes the information that the illusion conveys, and a real subjective experience of that illusion.

Saying consciousness is an illusion does not solve the hard problem, because it still ignores the reality of the experience of that illusion. Equally, taking the idealist route, saying the entire material world is just conscious experience doesn't solve the hard problem either, because it fails to account for how the informational content of the illusion is instantiated and processed. It seems the debate is a bit stuck. But it *is* important, it's not just some irrelevant academic game. What we think we are, what we think experience is, is one of the most fundamental philosophical questions of all time, and what we think about that issue, and how people misinterpret that thought, cascades outward into the rest of our culture and affects it at a deep level, and in the end the fate of scientific progress might hinge on whether it can provide something better than what religion provided regarding these questions of what we are, and what gives our lives meaning.

Over the past few decades or so science has swung back from that extremist reductionist stance, the general vibe has loosened up, and psychology has largely rid itself of its behaviourist past. Consciousness research is now cool again. Some really interesting stuff is now going on. Perhaps it took the force of some western psychologists having full blown mystical experiences to dislodge these extreme

reductionist positions? The point is here that the behaviourists were just as confused about levels as anyone else - they thought that the very low level mechanistic explanations of physics should be applied to high level concepts such as behaviour, personality and consciousness. So perhaps in some way it was poor science that created its own backlash. So yes, sometimes science does over extend its current reach, and we should be wary of that.

It is a serious misconception that the primacy of the scientific method implies that anything not measurable is not real. Yes, even some scientists who should know better have this attitude. But this is not what science says at all. This misconception makes for bad science and the knock on effect is that it makes for misguided criticisms of science. There is a tendency for scientists in their early to mid-career to get overly obsessed about things being supported by the data, to the extent that thinking about things that can't be objectively measured becomes taboo, or worse, categorised as philosophy. It always annoyed me that some quantum physics lecturers will dismiss more philosophical questions, such as what is actually *there* in reality, as meaningless or "speculative". This "shut up and calculate" brigade misunderstands how most progress in human thought occurs - not by looking at data, but by thinking about what is, and how it works - by speculating, basically.

Measurement and gathering evidence are simply ways of investigating the real world, and assigning relative levels of believability to different theories. But you can't actually *build* a theory by looking at data. You have to actually *understand* what's going on in some way. You have to have some *insight* about how this data relates to actual, real things, eventually you have to have some idea of what could possibly *be* a real thing, and how that would connect to and be compatible with everything else in reality. This is a philosophy of science espoused by David Deutsch, who emphasises [explanations](#) as the true engine of scientific progress.

Indeed I would say that it is actually speculation that is the engine that drives scientific progress forward, and evidence gathering is simply the way that we stop it slipping backwards. Evidence is simply the means by which we find out which theory we should give the most credence to - it's no substitute for imaginative thinking, no substitute for creativity, no substitute for insight.

Another thing that I'm sure lots of people find slightly distasteful in science is that there is a certain competitiveness that takes great delight in taking some piece of common sense and exposing it as a delusion, or taking some other person's theory and trashing it as being meaningless 'intuition' or woolly thinking. The big jackpot here is taking something that everyone thinks and disproving it. Counter-intuitive results will get more citations than intuitive ones, and this is actually publication bias. Quite a lot of the time our intuitions turn out to be right, but no one wants to read about that, and the scientists who find out those kinds of results can't get publicity (or any feeling of smug superiority) from it.

Motivations can be suspect amongst scientists as much as anyone else, and I'm put off by this combative "my hard-nosed reductionism is harder-nosed than yours" stuff. Nevertheless, some of my favourite researchers do partake in this militant rejection of woolly thinking. But notice - overly aggressive rejection of poor reasoning doesn't *necessarily* mean they're closed minded. It is the opposite: the contrarian disagreeable people are far more likely to be right the more rigorously they have rejected poor logic. They are more likely right the less they feel the need to be polite and tolerant of other people's errors and avoid hurting their feelings. We might not like that vibe, but it's true. Mike Stahlmann, of course, is a classic example of such a dick-swinging intellectual tough guy. He's on his way apparently.

But has science become more "spiritual" at all? Can it? Or is that just a wishy-washy pipedream? Well, to take one example, when I first began meditation (in the mid 90s) there was very little scientific research into it (or indeed consciousness in general). Over the years, to my joy and fascination, this field has exploded. Meditation has gone from being seen as a kooky and pretentious Hippy pastime to being the stuff of respectable Cognitive Science journals, and even daytime TV features. Half the people I know now seem to meditate. Why? Because Science learned from Spirituality the value of subjective experience, and Spirituality learned from Science the value of gathering objective evidence¹³.

Similarly, when I first took a psychology course back in the mid 90's, research into Psychedelics was non-existent, having been made illegal after the initial experiments in the 50s and 60s (which admittedly did kind of go off the rails a bit).

¹³ You could argue that Buddhism was evidence based in that it contained instructions to "try it for yourself", but this was more subjective evidence. Buddhism can claptrap with the best of them, let's face it.

This too has changed, with some very interesting investigations being carried out using modern brain scanners. Furthermore these chemicals are being researched for therapy: clinical trials of using psilocybin and MDMA to treat depression, PTSD, and death anxiety in people with terminal illnesses. A fantastic recent book on this subject is [Michael Pollan's "How to Change Your Mind"](#). A sober, honest book like this would have been more or less unthinkable in previous decades. It is also clear that more and more celebrities are more comfortable about "coming out" about having had psychedelic experiences and having found them immensely valuable. Netflix is chock full of unabashed druggy brain candy. The whole thing seems as though it's almost ready to become sensibly integrated into modern polite society. Legalization is slowly happening, and seems to be fairly successful. Let's not take this for granted.

The drugs debate has really moved on. Not just because the respectable establishment is waking up to the benefits, but also that the advocates are waking up to the dangers. Once upon a time there was one side claiming that a spliff would turn you into Charles Manson, but lazier, the other side saying that smoking a spliff was like priority boarding for a direct Easyjet flight to Nirvana. One side thought it was the Devil, the other side thought it was God. Neither side was correct. Cannabis has all kinds of benefits and all kinds of perils. It's complicated. The important thing is that we're recognising the complexity.

Having ridden out peak hysteria around drugs, it gives one a calming perspective on the current hysteria about... well, literally everything else. Having accepted that both sides were idiotically attached to extreme versions of their arguments, it sharpens how I see the current polarisation in political matters. It's not about picking a side and then thinking everything they think, it's just about thinking. If mild progress can happen over such fraught and tricky issues such as drugs and consciousness, it gives one hope for making progress in other areas. This new effort in the mind sciences to understand the spiritual gives me hope that by the end of this century we will not only have the ability to shape the physical world to meet our desires, but also to shape our own minds such that those desires become less destructive. Furthermore I believe that the journey into understanding ourselves will re-establish the value of subjective experiences, and hence reverse the impoverishment of art and spirituality that has occurred under the

objectivist-materialist worldview. Science could make us *more* spiritual and *more* creative.

With science you can show that meditation is beneficial, you can show that psychedelics can be beneficial, and you can show that homeopathy is not. This does not destroy spirituality, it improves it. For if you truly desire spiritual enlightenment you will not want to waste your precious consciousness-raising time on ineffective rubbish, right? If something doesn't have an observable effect - why do it? And actually this is my main beef with meditation, is that it takes so much time for so little effect. It's 1% inspiration and 99% respiration.

Spirituality and Art

So the final touching point between this triumvirate of tricky truth trials is the one between spirituality and art. The interaction between the spiritual and art is a big topic. Books have been written. Bullshit has been spouted. Nevertheless, like the overlap between science and art and spirituality and science, the intersection touches at the core of both.

One big question is what could possibly replace religion as a source of spiritual solace. If we are rational, and believe in a scientific world view, and if that means rejecting the claims of iron age religions, then what are we left with? Some people think we need to hang on to religion because things will go to hell if we don't, some people think we have no replacement and that's OK. But I think we already have a perfectly good replacement, and that's music.

Personally, music has been my religion. It has provided me with all the classic things that religion is supposed to be good at and science bad at: the close bonds of a community, feelings of belonging, moments of catharsis and release, a higher purpose, a way to work through my own psychological hurt, a sense of ritual, peak experiences of unity, a meaning to my life beyond the materialistic, and even some hope of a continued existence beyond my own death.

Let's face it, a good rave is a religious experience. And the fantastic YouTube genre of [dubbing Drum and Bass over nutty baptist church dancers](#) proves this beyond doubt. It's funny because it's true.

Nevertheless, music in its current form could do a hell of a lot better. If we're really going to bond humanity together using music we need to up the fucking game quite considerably. I think the main thing that is lacking is a lineage of wisdom. The attitude that has prevailed in the spiritual side of music since the 60s is that you just do whatever feels right and ignore what the oldies say. As an oldie I can tell you this won't get you anywhere. You will simply be doomed to endlessly repeat the same mistakes as people made in the sixties, and again in the nineties, and your religion replacement will remain a mess. The other thing that religion has and music never had is the sense of duty. You used to *have* to go to church on Sunday, and that in its boring stultifying way would knit together the community. But you don't *have* to go and see your mate play this Saturday night, and the most flimsy of excuses seem good enough to give stuff a miss, and as people get older and less inclined to go to raves, our musical community gradually disintegrates.

Or maybe the lineage of wisdom could be as simple as an instruction manual: "The Rave Bible". The manual would of course contain basic intoxication strategies, like "sup thee of enough water" or "how long must ye wait before partaking of another one because the first one hath seemingly no effect". Some rough guidance about how long to spend nattering your head off in the smoking area and how long to spend dancing could be useful. It could contain the simple wisdom that the more energy and focus you put into your dancing the better your experience will be. Not rocket science. There could also be higher level wisdom about what the aim of a festival really is, how it's not just about hedonism, you should be helping others to have a good experience too. Some advice regarding respecting your fellow festival goers: "Blessed are the short, for they obstruct not the view of the stage. Blessed are the prepared, for they have toilet roll in their car, and some idea of what acts to go and see at roughly what time. Blessed are the colourfully attired, for they are swift to locate". Etc. Perhaps a few parables, like "the Samaritan who gave his last Rizla to some people that he did not share music taste with". Maybe the astonishing miracles that occur at big festivals should be documented for posterity "the miracle of that time we all got separated with no mobile signal but somehow simultaneously ended up in the queue for the exact same Churros van all at the same time" or "the miracle

of how we thought the weed lost and forsaken, but lo! it was lying untouched on the ground not two meters from the tent". How to notice the virtuous cycle of making others happy and that making you happy. How to summon the spiritual fortitude to carry out the sacred ordeal of getting in a round of drinks, when that round involves an hour-long slog through knee deep mud, barging past impenetrably dense crowds of people. On the first part of the pilgrimage you must wage a seemingly unending mental battle to keep the hallowed list of your freind's drink preferences from spilling out of your chemically-discombobulated working memory, and on the way back a similar (but now physically incarnate) battle must be fought to keep the holy liquids from spilling out of their ethereally flimsy vessels. A few reassuring words from a pocket rave bible might offer the weary pilgrim solace in trying times like these (though good luck getting it out of your pocket whilst still holding the beers). Maybe a few Rave-Commandments wouldn't go amiss: thou shalt not drop litter all over the fucking place, thou shalt not covet thy neighbours nitrous, thou shalt not barge all the way to the front and then just stand motionless looking grumpy. And the prime commandment, the golden rule, the sin for which the hottest pit of rave-hell is reserved for: thou shalt *never* wear a jester hat.

The entire breadth of human morality and spiritual life is present and indeed heightened and magnified at festivals, but seems not to have been set down in the written word. I'm sure old ravers have a huge amount of sacred wisdom to impart, don't we owe it to the kids to teach them a thing or two?

But, as you can tell from the blathering above, in attempting to discuss this, we immediately veer into the silly. It seems impossible to take the spiritual side of festivals seriously without losing some integrity and some humour, why is that I wonder?

Evidence Based Policy Would Truly Be Magnificent

Mike Trollfield

So in the last chapter I ranted for a goodly wee while about Stupid, but what do we actually *do* about stupid, apart from the (perhaps unfashionable) idea of taking their votes away?

Well, either we force people to become smarter, or we change our idea of what democracy means.

What democracy shouldn't be is a generalised decision making system. If you had a life threatening disease, you wouldn't take an internet poll on what to do about it, you'd consult a specialist doctor. If you required a complex invasive surgical procedure, you wouldn't want it performed by a robot grabby hand controlled by a bunch of people who fancied "having a go". If you wanted to publish well researched, well reasoned articles about current affairs you would want a mechanism where *just anyone* could post their thoughts directly underneath. Oh wait.

Complex decisions take complex, specialised knowledge. Again with the elitism you say? Well you can't just say elites are bad without justification, and once you have a justification "Elites are bad because..." the question is how to solve that problem that comes after the because, not eliminate the entity before it.

To be slightly more specific, elites can be bad because they are subject to corruption, conflicts of interest, unfair barriers to access etc. Elites often take decisions in their own interest when those who depend on those decisions cannot understand or oversee those decisions, or measure the outcomes. Fine. So then increase the transparency and oversight, increase the understanding level of the population, don't just declare that elitism is eevil and we should hand the decisions over to people who know nothing.

Another thing to be very wary of regarding elitism is that our primitive brains attach to people notions of authority in an absolute way, again ignoring any specialism. Therefore we somehow think that our "leader" should run everything, get to say what goes on in healthcare, the military, the economy and so on. Democracy is then brought in as a safety valve to remove any leaders who get too hectic. But what, we have one person who's meant to be overseeing EVERYTHING? Are you KIDDING me?

Who on earth would come up with a system like that? I guess people got so used to there being a Monarch with absolute divine right to rule that they couldn't think of any other way to make decisions, and in the heat of the moment they just slapped in a kludge that enabled you to get rid of the absolute ruler once in a while.

We have a system that is only a smidge better than a monarchy that gets guillotined every five years. Oh, and by the way who gets to decide how the democratic process is run? The choice is between a collection of dusty 500 year old documents or the government of course! Thaaat makes sense. At minimum you would have an international body that assesses how successful different institutional processes are across different countries (remember them?) and ensure that the most effective structures are put in place across the board. It amazes me how little we really look at differences in outcomes of policies in different countries and try to work out which ones work best. It's generally assumed that what works in France could never work in Britain. But why?

Even if you don't partition the government into more specialised units, we should at least make some distinction between:

- 1: The values of our society - what people want, how they believe life could be better, what areas we should make progress in.
- 2: How to *objectively* determine whether we are making progress regarding these values.
- 3: The means of achieving this progress (i.e. actual policy).

It seems to me that these three things are hopelessly tangled up at the moment. Which of these should be subject to democratic process? Probably only the first, the other two are technical questions which could be answered by technical means. At this point in a conversation someone who knows more than me will chime in about how some technical set up in some political system is already doing this and has been doing for hundreds of years. Great, that's super, those clever people back in 17-whatever thought about all this I'm sure, but how come no one ever talks about that? Why do we insist on running political gameshows where we *think* we're electing "person who runs everything"?

Someone else will chime in about how I'm a "technocrat", yes exactly, I believe in the rule of Techno... but with a huge caveat that we must stop technology or technique from determining what we want. At the moment it's almost as though we have the exact reverse of the desired situation - we have technology determining our goals and values and misinformed voters deciding how to achieve them.

To illustrate the point, I'm trying to think of a simple example of a political issue that is not utterly fucked, ummm, nope I can't right now, so lets take terrorism and break it down in to values, measures of progress, and policy.

1: Values.

Q: What are our values regarding terrorism?

The Demos answers: We don't want to get blown to bits whilst going about our daily lives.

Great - I think we have a virtually unanimous consensus here. Let's take a brief second to celebrate our joyous political unity! It won't last.

2: Measurement:

Q: How do we measure the risk of being blown up?

The Demos answers: We plaster sensational stories everywhere about incredibly rare gruesome events and broadcast them to everyone. We erroneously describe them as the greatest threat we face in the modern world. (You were 300 times more likely to die in a car accident than a terrorist attack in America *during the year of 9/11*. Let's have a war on cars shall we? Yes, we very much will in a later track...).

Hmm, doesn't sound like a great risk assessment process. How are we going to measure progress if our measurements are wrongly-whipswanked by over three orders of magnitude?

3: Policy:

Q: How do we reduce the risk of being blown up?

The democratically elected leaders answer the Demos: We invade countries that had nothing to do with causing the events in said headlines, and create far more terrorism in the process.

The above example is stupid, yes, and seems a little quaint now the pandemic has made us forget all about terrorism, but it illustrates the point. The point is that the only part that works, democratically, is the first. The stage two and three should be left to people who have been proven to know what they're doing. I know this seems fanciful, maybe impossible, until you remember that billions of people who know what they're doing are actually doing stuff that works everyday, and they weren't elected to do it. Most things work most of the time when people who know how to do them are doing them! Shock! Stop the press¹⁴!

The interesting thing about political polarisation is that the main disagreements are not about values, they are about facts. As opposed to the uppists and downists, who fundamentally disagree about the value of flying, the left and right both agree that we should be flying, but fundamentally disagree about how to do it, and fundamentally disagree about the facts of what is happening in the world. Whilst this is depressing in that it reveals that people are stupid and that social media has fucked everything, it also gives us good grounds for hope, because at least facts do stand a chance of converging, whereas values might not. If one bunch of people thought that being blown up was terrible, and another equally large group thought it was awesome, then we'd have more of a problem.

What we should try to build are iterative mechanisms of evidence-based policy creation. We set a target, we do some careful experiments to see which policy gets us further toward that target, maybe we implement it in many different parts of the world, we gather the data, we pick the one that seems to work the best. That's not easy. These are often, as the saying goes, [wicked problems](#). It's not even easy doing such experiments with subatomic particles, but it gets orders of magnitude harder at the level of entire societies. But it is possible, and it has been done before, via a nebulous and strangely underrated thing known as *progress*.

¹⁴ Seriously, *stop* the press.

Progress

Progress is real. Take the [world development goals](#). Broadly speaking a set of ambitious targets for global progress were laid out in the year 2000, and these were mostly achieved. For instance:

"The target of reducing extreme poverty rates – people living on just \$1.25 a day – by half was met five years ahead of the 2015 deadline".

You would think that a halving of extreme poverty in ten years would be front page news wouldn't you? But no. You would think that the left-leaning media would celebrate this achievement, they've been banging on about the reduction of poverty since Marx. Are you happy now Marx? No, inside big bushy beard Karl still do grumpy mouth. Since those extremely poor people are still poorer than us, any progress made is still "inadequate". Celebrating an improvement in something that is still relatively bad is seen as derogatory and in poor taste. Being sneaky for a second, I might guess that since this reduction of poverty was not achieved by the correct political means it's not the "right kind" of progress to celebrate. Because capitalism did it it must be suspect. It then requires all kinds of mental gymnastics to illustrate that the lives of people getting richer in an unequal, capitalist world are somehow not really improving at all. I've lost count of the number of Guardian articles with the words "inadequate", "falls short", or other articles that say "what about..." and then highlight some other, more or less irrelevant problem as evidence that all progress is somehow just a phantasm. But it's not. By any meaningful measure, the lives of people in poorer parts of the world have been steadily getting better for 100 years. If you don't believe me, then I'd urge you to watch [Hans Rosling's great Ted talks](#). You can see this kind of data moving around in real time animations and it's very entertaining, enlightening, and encouraging.

Having said that, it would appear that the *rate* at which poverty has been declining has slowed since 2015. And there are a whole swarm of worrying trends that could even reverse this progress in the decades to come. So the world should by no means

rest on its laurels, but also the world should not deny the existence of its huge mound of laurels either.

Evidence based policy is damn hard to implement, much harder than what we're doing now, but really what else is there? Random shitstorms informing manipulated referenda? We can do better. Seemingly impossible problems we all feel guilty about, like poverty, are in the end problems that specialised techniques can solve on the macro level. Outdated ideologies about how democracy should function, and emotional, biased judgements about how to think about progress are holding us back. We *know* that humans are biased, blinkered and irrational. Stupid in other words. Let's democratically arrive at a selection of which problems we want solved, and let Science (or whatever can be scientifically proven to work better than science) do the rest.

I was veering toward an argument online the other day, with someone who posted the sentence "it's almost as if progress isn't 'progress'...", with the implication that progress was very much not progress. Sigh. Again, I backed out of the argument because I can't social media and I'm a digital chicken. So here, in the relative safety of my Google Docs haven, is my retort.

Looking at huge, scary problems like pollution, nuclear weapons and climate change, it is (somehow) easy for people to claim that science and technology have made things worse. There are, of course, bad things that would never have happened without scientific progress. In fact, list all practically any bad thing and it will have been made possible by "progress". Also, name practically any good thing and it will have been made possible by "progress". We exist in a world made possible by progress. The fact that you are at liberty to complain about progress, you owe that to progress. Our entire lives are lives spent swimming and breathing in the water of progress, like it or not. And you do like it, you like it very much indeed.

"Ah!", you say sagely, "but good things are things like "love" and "family" and "human bonds", we don't need Selfie Sticks and Large Hadron Colliders for that!". Well, actually, you kind of do. Without scientific progress, at least half your family and friends would have died by now. Horribly. Mostly in the first few years of their life. Then there's also the fact that their parents would probably never have been born either. So your life would be significantly impoverished, even with regard to

those non-technological things you value so highly. Assuming you're still alive at all to value anything.

We like to watch dystopian Sci-Fi about how awful things will end up if we continue down our insane technological path. But we completely forget that the the most advanced societies in the world *were* dystopias by our standards, even right up to the sixties. No one in their right mind would ever want to turn the clock back to even fifty years ago. They were dystopias for women, for a start, as Margaret Atwood points out about *The Handmaid's Tale* - none of that is actually fiction. The "land of the free" was not so long ago a horrific dystopia for people of African extraction. And then there's the dark ages. When you could get hung drawn and quartered for, well, looking dodgy. You could get burned at the stake for practicing herbal medicine. During the Black Death a *third* of everyone you would have known died, in horrendous pain it must be added. And the only reason we're not still there? Science, Reason and Liberal Humanist Values.

Everything we fear about the future is already in our past. And the fact that we *know* that makes our future brighter.

Pick almost anything you care about, it will have got better over the past century. We like making music, right? Did you know that the number of guitars per million people rose from 200 in 1962 to 11,000 in 2014? The sixties was a superb decade for music, but the reality is that the joy of making music is available to about *five hundred times* as many people as it was then. Isn't that good? You can say it's tragic that only 11,000 people per million get guitars. That's a lot of people who are missing the joy I just experienced of practising solidly for three months and still sounding like shit. But that *so obviously* doesn't mean we should reset the world to when only 200 people had them. Your reasoning seems to be that if things aren't as good as you hoped, then they *must* be getting worse. If things aren't perfect then we need to reset the clock to when they didn't exist at all. *Terrible* logic.

One exercise I'd like to try with these people who hate progress is go round their house and try to chuck some things out. What about removing these (water heated radiators 1855)? Hmm, it would get really cold in here, don't think so. Can we get rid of this (Electric Oven 1896)? Nah, I kinda need that to cook my food, obviously. What if I smash these? (Glass windows, became widely available in the 17th

century)? No, jeez, it would be even colder, brrr! What about if I throw these lumps of crap out (loudspeaker, 1876)? No way, music is my life man! OK, this can surely go (washing machine, 1901). What? Wash clothes by scrubbing them up and down a serrated surface for hours? Sounds like a PITA, I'm keeping that bad boy! What about these useless little pieces of shit (electric light bulbs, 1878)? Nah man, I wouldn't be able to see anything!! Mate, I thought you hated... OK, whatever, I'm definitely gonna chuck these things away (metered dose asthma inhalers, 1950) Are you kidding, I'd suffocate and die within weeks! OK what about this rubbish? (keys, Middle Ages)? No sir-rie! Without that I couldn't lock my door, and then bastard thieves would get in and steal all my precious instruments of the devil that progress has given me.

I could continue this process with literally every single object in your house, in chronological order of invention, to see at what point you would bail on my malevolent technocracy and cry "Noooo! Too much progress! Begone with it!". My bet would be that we arrive smartly and punctually right smack bang at the present day, at which point we would be playing a last pitiful tug of war over a small black rectangle of metal and silicon, you refusing to let your smartphone out of your sweaty, frantic, suspiciously hypocritical-smelling grasp.

Ah, but we hate smartphones right? They suuuck! OK then, how did you feel last time you unexpectedly ran out of battery somewhere? Remember that feeling, how inconvenient it was? That's not mind-control-annoyance instigated by our nefarious science overlords, that is the feeling of NOT having a phone any more. That was how life *was* until a decade or so ago. I tried to find out how many lives smartphones have saved but all I found was a forum thread which like all forum threads degenerated into an argument and concluded with someone posting "I like eggs". Progress has given us many things, but productive conversation seems to not be one. Anyway, I'm pretty sure mobile phones have saved quite a number of lives.

Think of all the annoying stuff that was replaced by your phone. It's easy to forget about them. Paper maps, the yellow pages, memorising shit, dictionaries, etc. When I was a teenager, a trip into London would require the following:

- An A to Z (which disintegrated and had to be replaced every few weeks).
- A book to read.

- A Walkman to listen to music.
- A stack of cassettes to play in said Walkman.
- About three kilogrammes of ten pence pieces to feed a stinking unreliable phonebox, the first three to just be eaten by a phone that had been bashed in by someone who was bored because they didn't have the internet yet, the next three to feed another phone that was too urine soaked to be audible, the next five to actually have the call, and the next four to say bye, bye, seeya, bye.... bye! Bye! I'm running out of ten pees, bye! Yes, I said I'M RUNNING OUT OF TEN PEES, I'll say bye now! BYEEEE! Once you were out of ten pees that was it. Incommunicado. The fact that there had been at least ten pees taken in that phonebox would not help.
- And a Time Out magazine to find out what the hell to actually do once I got there.

You needed a rucksack full of this faff just to spend a reasonably amusing day out in the Capital. All these millions of bits and bobs just went away. Now I just need to remember to charge my phone. Progress. I'm fervently hoping that one day I won't need to have keys or a wallet either. This is already happening you say? Maybe. Not in Germany unfortunately, where progress in personal finance and home security technology advances at the speed of a geriatric sloth with chronic fatigue syndrome trying to swim across a tar lake. Wearing a suit of armour. Zapped with a freeze gun. Then fossilized. Then put on display in a museum display case made from impregnable glass. Filmed in 10000fps slow motion.

German efficiency is a bit of a myth I'm afraid. Attention to detail? definitely. Doing things by the book? Totally. Reliability? kinda... Efficiency, nie. Efficiency involves a certain amount of laziness, a certain amount of assertiveness, taking a few maverick shortcuts when necessary, taking a wild pot shot on a crazy hunch now and then. All this is sadly lacking. Everything takes forever. So whilst Germany certainly has progressive values, I don't really look to them for *making* much progress, as such. The closest Berlin has to a main street - Unter Den Linden - has been a building site ever since I first visited here in 2005. That's fourteen bloody years, what are they building? A Tokamak fusion reactor? A great alabaster mausoleum, ten times the girth of the Great Pyramid of Cheops that will be the final resting place of Angela Merkel? No, a U-bahn line that has five stops. Five. China has built entire cities in this time. Zhengdong New Area for instance is a city twice the size of San Francisco and was built in ten years, 50% faster than those five U-Bahn stations. I'm sure the build quality of the U45 will be way higher than the slapdash Jerry-built stuff in

Zhengdong, I'm sure riding the escalators will have the suave, robustly comfortable glide of a top of the line Mercedes, but still. The biggest progress in Berlin in the last fifteen years appears to be the introduction of electric scooters. That's literally the only thing that would look different about the city now as opposed to then (psst, if you ask a Berliner they will say the "city has changed massively", by this they mean they saw one vaguely modern looking building with some glass on it being built in 2013... oh and still in 2014, and 2015, it'll be finished in 2022, in theory... unless it contravenes health and safety regulations, in which case 2025). And then there's the new airport of course... But to be honest the failure to build new airports is a thing to be celebrated. I think the new airport should just be abandoned entirely and be turned into Das Okologischerheitsmuseum (The Museum of Ecological Folly).

And then there's the traffic lights. I've been in Berlin for five years and I think two of those have been spent waiting at red lights in front of empty roads. I miss being a feral cyclist in London, where the traffic lights are merely advisory, fleeting flashes of color in the corner of one's eye. Instead I'm waiting there gazing despairingly at the red ampelmann, with hour upon empty hour to consider all the things I could have done with my life, all the things I could have been, all the songs I could have sung, all the love I could have made if it wasn't for that annoying red man. Red man. Why you stop me. Red man. Stop stopping. Red man. Stop your stopping. Red man, why are you always red? Will you still be red when I am dead? Red man. Red man. The poems I write whilst waiting at you will never compensate me for those lost years.

I'm fairly sure that Berlin could be by far the most progressive capital in the world if things just hurried up a little. Weed would totally be legalised, I mean no one seems to actually mind it, it's just that actually passing the law would require months of *stuff* to get done, and that would take decades.

Standing up for Stand up for Science

In the end this song wasn't used by the people who organised the March For Science. Sad. Cursor Miner was again passed over for someone with less talent and more acceptability. Maybe, well, no, not really because this song would never have

worked, would it? There was no way that hundreds of people could have sung it on a march. It's too fast, it's too complicated, it would have needed a big sound system. Fail. Fair enough. But that's not why they *said* they didn't like it. They said it was "childish" "repetitive" and "too intellectual". Now there was me thinking that intellectual children were the future of science, and therefore more or less the target audience. But nevermind. Someone also said it reminded them of "an Australian band from the 80s". I don't know if they meant a specific Australian band from the 80's (If they were referring to [They Might be Giants](#) then I take this as high praise) or if they meant 80's Australian bands in general - but it was news to me that Amen breaks and hoover bass were big things down under ten years before they reached London.

In the end I think they went for an Australian women's choir singing "Give Science a chance" to the tune of (wait for it) "Give peace a chance". Which struck me as quite childish and repetitive, and reminds me of a British band from the 60's.

Of course, the real reason wasn't anything to do with the music. It was that Cursor's tune has a decent chance of "offending" people. So you want to march against idiocy but you don't want to offend any idiots. Good fucking luck with that, lamers.

Mike Trollfield

End Bit, Next Time

Thanks for your support Mike. You know, I didn't think it would be possible to make my music even less popular than it already is, but you seem to have hit on a way, nice one man.

For me the most fun thing about this song was that I got quite a few participants in to help with the gang vocals, and it was super fun. There were two sets of helpers. The first was when a bunch of us got back from a night out drinking and gathered round a mic and went bonkers (the female whoops and hollers are thanks to Barbara and Katia(?) they really add some good energy to the last verse and chorus). Then I also gathered about ten volunteers at my workplace and got them all to shout "Fact Up!" at the right points, and they did an admirable job, so thanks everyone!

I also had a vague plan to get my friend's male choir to sing the medieval bit, preferably in a real church, but I was too damn lazy to get that organised. Such communal singing is probably UTTERLY BANNED FOREVER now so the opportunity is definitely gone. I regret that, as I think that bit is already the best bit in the whole song and doing it with a real choir would have tipped over the edge into proper awesomeness.

The medieval bit is again, like the Stukas and like the wonky Dunning-Kruger beat, an “extreme intervention”. I think I had Monty Python’s Holy Grail in my head when I was doing that bit. It uses parallel fifths to permanently date itself as being pre-counterpoint and hence pre-renaissance. It is the extreme opposite end of the musical spectrum from the rest of the song, and this has the added effect that when the chorus drops back in it sounds much stronger for its final outing.

But *then* what annoys me is that for some reason the end of the song sounds so much more persuasive than the beginning. I feel this tune does drag it’s heels a bit and takes a while to get into it’s stride - should it have started with the chorus? But I tried that and it didn’t work, and I also wanted people to get shouting “fact up” a few times before the song starts so maybe it just had to be this way. Maybe this is probably why the science march people thought it was repetitive. Maybe it is repetitive. Maybe I’m too biased and not being honest with myself?

Whatever. That’s science done with. Now we’ll take a look at one of the things progress has given us, how little they do actually *progress*, and the cuntiness of the people who drive them. Yes, it’s time for Those Cunts In Their Cars.