EPISODE 45
MARSHMALLOWS & DOPAMINE

Hi there. Welcome to the end of the world. My name is Michael Folz. And this is Episode number 45 of my podcast Dial It Back Or Die. Now last episode I gave a very brief survey of what is presently scientifically known as to how and why we think and behave as we do. So this episode we're going to see how all of that relates to one of the most foundational of the assumptions which underlie the ideology of liberal democracy.

Because, as I've pointed out before, my goal in this Science section is not to simply inform and entertain you with the realities of modern scientific research. Rather it is to help show you that the theoretical underpinnings of this postmodern world that we live in not only do not line up with scientific reality, but in many cases are 180 degrees opposite of scientific reality.

For instance, as opposed to the current popular belief that Life is somehow cheap and plentiful throughout the Universe, the actual parameters are such that Life, and most especially complex Life, is no doubt so rare that for all intents and purposes we are indeed alone. Which means that, in the most Cosmic of senses, we are also indeed special. Which means that instead of not caring if our world's culture degenerates into infantile fun and games, we should probably be a hundred times more concerned about this than we are about the admittedly real concern about climate change.

Or take the plain fact of our having evolved to become hypersocial animals. Because once one fully grasps this, then it doesn't take a genius to figure out that this culture's embrace of individualism and individual rights will inexorably lead us to a dead end.

And it's the same sort of conclusion one should draw once one accepts the reality of how our thinking processes actually work.

Because I'm sure that, even if you were totally unaware of all the findings which I went over in the last episode, you nonetheless know just from your personal experience that we humans don't always act rationally or efficiently. In fact, from our own personal experience most of us could probably even argue that we humans don't even often act rationally or efficiently. Yet have you ever

stopped to ask yourself: If it is so obvious that we humans are mostly a mixture of emotions and muddled thoughts, why is it that our basic operating system—our economy and our political structure —assumes basically the exact opposite of this?

But that's what I've been trying to point out throughout this podcast. After all, another name for the Age of Enlightenment was the Age of Reason. So in Economics markets are supposed to be completely rational. In the political world Democracy is supposed to work because each voter, in their enlightened self interest, will rationally tally up all the pluses and minuses of the various candidates.

And no matter that the giant wheel of Capitalism only rolls forward because of a gazillion dollar advertising industry which relies almost exclusively on emotional manipulation to inflate the desires of each and every citizen. No matter that it is a well known fact of political science that elections turn on positive emotional affiliation (in other words, who you'd rather have a beer with) rather than on plans or policies or positions. And that those political ads are best which instill fear of the opponent. Yet still we revere the sanctity of the marketplace. Still we press for more Democracy around the world.

And still each side in our current political divide falls back into the simplistic libertarian position that we're all rational controllers of our own destiny whenever it suits their purpose.

For instance, if socially conservative folks complain about too much sex and violence, they are told by Progressives to just change the channel or to just not go to the movie. As if someone sitting down to watch pornography has first ever so rationally made up a list of the costs and benefits involved. And, on the other side, if well meaning people want to regulate guns or other harmful substances, they are told by Conservatives that they are interfering with adults who can rationally decide for themselves whether or not an AK-47 is a useful purchase to make.

Again, though, I don't want to get hung up on current affairs. I am simply giving these examples now on the off chance that you haven't already been drawing your own conclusions about what happens when it turns out that the entire foundation of our belief system is utterly contradicted by what science clearly says about who we are and how we really think and how we really behave. When everything that a culture values and wherever it is going turns out to be a horrible illusion based upon (at best) half-baked beliefs from the 18th Century.

But here's another point about those 18th Century beliefs. Because, as I may have pointed out earlier, calling them the 'Age of Enlightenment' is kind of ridiculous. After all, in the popular mind the term 'Enlightenment' refers to a transcendent state of consciousness achieved after a lifetime of self-

discipline, prayer, meditation, etc. Yet one of the most important turning points in the 18th Century was a denial that such states of consciousness were possible, or even desirable. Indeed, visions of heaven and the like became so much pie in the sky. And the priesthood, instead of being helpers on the way to the goal of enlightenment, now became power hungry purveyors of superstition who were just trying to spoil the fun for the rest of humanity.

Likewise, the phrase 'Age of Reason' might have made sense if this were an era when everyone was trying to be like Descartes or Kant, and using reason alone in an attempt to ferret out ultimate truths. Instead the relevant philosophers at this time were John Locke with his existentialism, and David Hume with his bedrock assumption of an absolute skepticism which explicitly denied that reason in the end could ever really even explain anything.

Anyway, the rest of this episode is going to deal with what science says about what is maybe the innermost core belief in this, or any, culture: Namely, the question of 'what's the point of all this?' Our societal justification as to why we get up in the morning and as to why we're supposed to be looking forward to getting up tomorrow morning.

Now in a sense I've already dealt with this back in Episode Six by trying to deal with the definition of happiness. And, as you'll recall, I pointed out back then that 'happiness' is a pretty slippery term to define. After all, you can find yourself in the middle of Africa, where all the economic and health indicators are truly terrible. And yet many visitors to Africa nonetheless report a positive energy, a palpable optimism, and a love of life from the people around them. On the other hand you can find yourself in the middle of a city in Scandinavia, supposedly the 'happiest' area of the world, and be surrounded by a sea of unsmiling faces.

And then later on in the podcast I dealt with another angle to the 'meaning of life' question. Namely, I pointed out that, throughout history, in 'classical civilizations', whether it was China or India, Greece or Rome, thinkers and philosophers had come to pretty much the same conclusion. Proper motivation—why we did and/or should get up and live every day—ranged from serving our family to serving our country to serving God to finding Virtue. Or, in other words, the good life was a function of restraining the individual self. And these thinkers, cross culturally, generally agreed that the more that we blindly lusted after worldly goods and worldly pleasures, then the less human and the more animal-like we were.

On the other hand, in the West around the year 1750 came the first glimmerings of 'modern' thought. And, in short, modern thought held that worldly goods and worldly pleasures were actually a good thing. That they were a function of, and a reward for, progress. And that therefore the purpose of life was ultimately wound up in indulging the individual self.

And in certain key ways the minds of the Enlightenment thinkers that we remember didn't go much further beyond thinking that humanity was indeed animal-like. After all, one of the central ideas back then was that the sole and only motivation in life was that, like animals, humans merely sought to seek pleasure and to avoid pain. Therefore both to blatant Satan worshipers like the Earl of Sandwich, as well as to more sophisticated hedonists like Voltaire, the core organizing principle was the same: If it felt good you should do it. And More pleasure would always be Better.

And by now I've mentioned any number of times that all that Jeremy Bentham's Utilitarian system of utiles and such was doing was in effect formulating 18th Century technocratic mumbo jumbo in an attempt to quantify this simplistic hedonism. Which is why he called his foundational assumption the '*hedonic* principle'.

Even Adam Smith, for all of his appreciation of the 'moral sentiments' shown when people relate to friends and relatives, still assumed when describing the wider marketplace that all that motivated workers and factory owners and merchants alike was the love of profit and the accumulation of wealth.

What made it worse was the fetishization of the scientific method which was going on at the same time. In other words, if a concept could not somehow be quantified, then it no longer existed. Thus ideas such as 'virtue' or 'beauty' or 'willpower' supposedly no longer had any meaning. And so this idea of quantification also lent itself to placing all of human experience on a simplistic pleasure/pain axis.

But if we take these two vastly different ways of understanding the meaning of life—the self-restraint of classical civilization versus the self-indulgence of the post 1750 era—and look at them through the framework of what was discussed in the last episode, we can now frame the two contrasting points of view in a somewhat more scientific way. Namely, the question becomes: Which of our competing brain systems is going to make us happier: The dopamine reward loop or the pleasure denying, plan-for-the-future cerebral cortex?

Now, as you'll also recall, back in the History section I made the rather strong point that after the French Revolution and the Napoleonic Wars the liberal ideas of the 18th Century were pretty much abandoned to Conservatism in the 19th Century. Clearly another way to now say this is that the dopamine theory of happiness was now once again supplanted by the classical cerebral cortex theory of happiness.

But as in one of those horror movies, as the century progressed it turned out that the precursors to liberal democracy—or now let's call it belief in that dopamine feedback loop—had refused to die. And even though in reality artists, poets, and writers of that era covered a whole spectrum of beliefs and behavior, from Wordsworth and Tolstoy at one end to Lord Byron and Rimbaud at the other, the fantasy eventually developed that to be artistic, to be free and to be Bohemian and to be having fun, all involved getting rid of those repressive cerebral cortex restraints. And that those people who did put off the pleasures of today were those horribly stuffy and boring bourgeoisie.

Moreover, as we shall see, as the 20th Century progressed any sort of restraint, especially of a sexual kind, came to be seen as some sort of unhappy prison. Not to mention that our overly complex and convoluted 21st Century consumer economy is clearly, on the face of it, a result of our worship of that dopamine rush.

Then there were what we might call the joyless priests of dopamine, the true followers of Jeremy Bentham. For instance, one of the most famous proponents of this way of thinking was Frederick Taylor, who in 1910 burst upon the scene as the founder of Scientific Management. An industrial engineer, Taylor, through his invention of such ideas as time and motion studies and his emphasis on paying by piece work, which would supposedly incentivize all of the 'stupid' industrial workers to maximize their output, claimed to bring scientific (and quantitative) rigor into the previously unregulated field of daily labor. This promise of ever greater efficiency naturally appealed to businessmen everywhere, and his methods quickly spread throughout the world.

In the academic realm, by mid century the ideas of Harvard psychologist B. F. Skinner had gained ascendancy. As described earlier, he had started with experiments in which he rewarded pigeons with pellets of food whenever they learned a new behavior. Coupling that with Pavlov's earlier finding that electrically shocking an animal made it shy away from certain behaviors, he seemed to be vindicating all of those Benthamite principles of pleasure and pain. He even formulated his own sort of Benthamite jargon, calling his methods 'operant conditioning'. And the fact that he was unable, outside

of prison conditions, to duplicate his results with humans as opposed to pigeons, did not seem to deter either Skinner or his many followers.

On the other hand, some people were finding out just the opposite. For example, around 1900 the German sociologist Max Weber purported to show a huge gap between the presumably nose to the grindstone Protestants and the presumably lazy, pleasure loving Catholics. And it later turned out that his sampling and statistical techniques were still in their infancy. Nor did he have anything to say about the nose to the grindstone Japanese, who obviously weren't even Christian, and yet in 1900 were still progressing economically at an astonishing rate. But at least Weber was trying to ground his research in what we would recognize as real science. And—in our terms—he was reaffirming the primacy of the cerebral cortex.

By the mid 20th Century still another thread was developing: Namely, the idea that there were other forces, not simplistic individualistic self-maximization, which were what was really motivating people to work and to achieve. For instance, by the 1930s and 1940s social psychologists found out that in the real world it was the larger work group which determined the speed and efficiency with which tasks got accomplished. Lazy workers were indeed shunned and shamed. But so were the truly nose to the grindstone types. And by the mid 60's it was pretty much established that even entrepreneurial businessmen weren't in it primarily for the money. Rather, similarly to artists or writers or scientists, their primary motivation in starting and expanding a business had to do with the satisfaction of having created something out of nothing. In effect, whatever material rewards they earned only served as markers to prove that they had actually accomplished what they had set out to accomplish.

Now David McClelland was another Harvard psychologist from around that era. And his take on motivation was somewhat different from that of Skinner. As opposed to being passive recipients of rewards and punishments, or of simplistically seeking pleasure and avoiding pain, he hypothesized that at least some humans had an innately high need for achievement. I emphasize the word 'some', since he also recognized that most people did not have this inner drive, and were therefore quite content to, as it were, basically just show up for work and do their job. Not that the high need for achievement types were necessarily superior. In fact, they usually didn't fit in all that well with existing organizations, and were only really good at being independent salesmen or entrepreneurs.

On the other hand, they were also the ones who today we would call the 'creators'.

And this formulation was probably superior to that of Max Weber, since it didn't rely on belief in a specific religion or ideology. Nor did McClelland think that humanity was irrevocably divided into the 'chosen' and the 'rest'. Indeed, he thought that the right cultural influences could help shape people into having higher need for achievement. And he claimed, for instance, that places where children were taught the story of the hardworking ant and the lazy grasshopper showed much higher economic growth twenty years later.

Of course, we all make mistakes. And in 1960, while in Italy, McClelland met an itinerant psychiatrist named Timothy Leary, whom he then invited to come to Harvard to both teach and to further study motivation. Unfortunately, however, and extremely ironically, if there was one chemical which would thoroughly muddy and confuse the entire concept of motivation, it was LSD…

The discussion of which, however, is, again, outside the scope of—at least this section of—this podcast.

By coincidence, however, a young psychologist named Walter Mischel was also at Harvard in the early 1960's. And as opposed to tuning in and dropping out, he was interested in why it was that at least some of us humans are able to not be like monkeys or other animals and were instead able to consciously delay gratification.

More specifically, he was interested in figuring out how, and particularly when, we learn how to do this.

So a few years later, when he had moved to Stanford, he started experimenting with preschoolers. What he would do is to have a four year old sit all alone in a room with a table. Upon that table would be a big juicy marshmallow (or whatever other treat the child liked the best). Off to the side sat *two* big juicy marshmallows. The child was then told that if they wanted to, they could eat the first marshmallow right away. But if they waited until the experimenter returned, then they could eat the two off to the side. (The wait time usually turned out to be about twenty minutes, although at the age of four the phrase 'twenty minutes' makes about as much sense as 'twenty days'.)

Naturally some of the children would scarf down the first marshmallow immediately. Others might wait a minute or two before giving in to temptation. But there were others who would resort to all sorts of mental tricks and other distractions, successfully wait out the experimenter's return, and be rewarded with their two marshmallows.

All of which was pretty interesting in its own right.

But what was really groundbreaking started showing up ten years after the first experiments. And what made it especially intriguing is that the results were a total surprise that had nothing to do with the original intent of the research. In fact, Mischel himself had always hated the presumption that you could give someone a psychological test and really find out anything meaningful about them. And he especially thought the concept ridiculous when applied to young children.

But his young daughters had been part of the original group of preschoolers. And when they got to be teenagers he heard them gossiping about what some of their friends from back then were up to now. And something in his brain made a connection of some kind. So he decided to interview teachers, parents, and the students themselves to see if there was any correlation between how they had done on the marshmallow test and their present lives.

Indeed there was.

Although before I outline that, I need to mention that in the intervening decades this experiment has been carried out any number of times, in many different countries, in many cultures, and with varying age groups. In fact, one continuing study in New Zealand has been following the same large group of children (now adults) for some thirty years.

And here is what all the research has found. Better than IQ, better than parents' socioeconomic status, better than virtually any other variable that you can think of, how one does on the marshmallow test when one is four or five is the best predictor on how successful one will be in the rest of their life.

And how do we define success? How about higher test scores and less disruptive behavior in school. Higher educational attainment. Better jobs. Better health and much less obesity. Being better able to adapt to stress. Much less subject to addictive behavior of all kinds. As adults even the brain scans were different.

Not that Mischel concluded that those of us who just had to have that marshmallow right now back at the age of four were necessarily doomed to a lifetime of abject failure. As McClelland had surmised that a high need for achievement could be taught to those to whom it didn't come naturally, so, too, did Mischel decide that we can all learn techniques which help us to forgo the temptation of the immediate. And he also pointed out that virtually all of us, no matter how self-disciplined we are in most of our lives, have other areas in which we totally cave. For instance, a President with an otherwise extremely high level of intellectual integrity might have zero regard for the truth when

discussing his sexual behavior. A military general justly famous for his incredibly Spartan level of physical and mental exercise and self control can also become a totally foolish adulterer.

Still, it is nothing short of amazing that something as simple as the marshmallow test could so profoundly show us the shape of our future lives.

You might still ask yourself, however, whether 'success' is the same thing as 'happiness'. After all, perhaps the four year old immediately scarfing down the one marshmallow was happier in doing that than the four year old who had patiently waited for the two. That's certainly what the 18th Century thinkers, from Voltaire to Bentham, believed was the case.

Well, again, as I pointed out back in Episode Six, ‘happiness’ is a remarkably squishy thing to define. And, if the survey of happiness is trying to be 'objective', by looking at per capita income, suicide rates, social welfare schemes, etc., the surveyors, by choosing the categories and then weighing them, are inevitably putting their own biases front and center. For instance, a Marxist would assume that happiness correlated with cement production, rural electrification, and the elimination of class consciousness. A Western liberal would assume it had to do with high GDP, a robust social safety net, and sexual freedom. A fundamentalist Christian would look for stable family structure and high church attendance.

But, however we define happiness, it would certainly seem that good health would correlate with it. So would pride of accomplishment. So would a stable life. So would a life free from addiction. And when you add it all up it would seem to be difficult to deny that those who have these traits would be happier than those without them.

Then there are more recent findings having do with happiness. For instance, there is the phenomenon of the individual happiness set point. Which means that we each seem to be born with an innate disposition towards happiness or unhappiness. Thus someone with a positive outlook can become a quadriplegic, yet a year later have their sunny disposition return. Whereas a pessimist can win the lottery, yet a year later feel down in the dumps again.

And here's something else about happiness. Experiences seem to make us much happier than do things. That is to say, spending your money on a trip around the world instead of on a new Lexus is going to make you much happier in the end. Indeed there are few of us who would report that the material stuff that we have collected in our lives has been more rewarding than the friends we have known, the mountains that we have climbed, and the knowledge that we have learned.

But, in brain chemistry terms, isn't all pleasure a function of dopamine? Well, actually, no. Because remember that, strictly speaking, dopamine isn't about pleasure per se. Rather it's about the anticipation of pleasure. Thus, for example, the thrill of buying a new car has to do with our anticipation of how it will make us feel. And usually, after a few weeks, it turns out to have been not so thrilling after all.

Which means that the accumulation of goods and services which economists, the direct descendants of Bentham and Mill, say is the true measure of our lives, ultimately—again, in terms of brain chemistry—do not contribute to happiness. And, in confirmation of this, we now also know that, once an economy gets past the point of abject fear and uncertainty, this really isn't much of a correlation between economic wealth and societal 'happiness'.

Although, if you still want to be a skeptic and push for the primacy of dopamine, you might want to bring up all those studies where those rats in cages will continuously press a lever to get an electrical stimulus or jolt of cocaine or jolt of morphine to the exclusion of everything else.. Doesn't *that* show that the primitive rush of dopamine will always overwhelm, and in the end will always be more important than, our more recently developed 'civilized'cerebral cortex?

Well, let me introduce you to Rat Park.

Now Rat Park was a creation of a Canadian psychologist named Bruce Alexander. In the late 1970's he developed the hypothesis that perhaps the rats in those experiments were continuously dosing themselves because they were in small, confining cages and had literally nothing else to do. So he constructed a gigantic cage, and then filled it with food, balls, and hamster wheels to run on, creating basically a rat paradise. Crucially, since rats are also sociable creatures, he also put around twenty rats in it.

And what happened? Now, when giving them the opportunity to dose themselves with morphine (and later cocaine), the rats displayed little or no interest.

Which meant that it's not that rats (and, by extension, humans) were such suckers for dopamine that, given the choice, their (and our) brains will willingly ditch everything else for that dopamine rush. Rather it was quite the opposite. Namely, that it was that isolation and the ensuing lack of social connections, the dissolving of that old social glue, which is what it was that caused them (and us) to be more and more infatuated with that dopamine feedback loop.

So… What have we learned here?

Well, first of all, going back to the Marshmallow Test, we've seen overwhelming proof that being able to delay gratification of desires makes you healthier and happier in the end than does giving into desires.

Which is a direct contradiction. To Voltaire and the rest of 'mainstream' 18th Century thought. To Bentham and Mill and the entire theoretical foundation of Economics. Not to mention our entire consumerist culture. And to the entire fantasy realm where Bohemian (blending into postmodern) sexual freedom is so much happier than the supposedly uptight, repressed world of the family centered and morality centered bourgeoisie.

And then, on top of all those marshmallows, when we consider the implications of Rat Park, it should be clear that, at least in purely chemical/neurological terms, Liberal Democracy once again has it totally—to use the vernacular—ass backwards. Because the end game of 'individual rights', or whatever you want to call it, must invariably lead to a situation where humans, without their social glue, will end up like those rats in their individual small cages jacking off on dopamine.

Even worse, the end game of 'if it feels good, do it', of a culture creating a norm of self-indulgence, of equating that dopamine rush with happiness, must invariably lead to addictions of all sorts. Must invariably lead to no outcome other than an over the top consumerist culture. And must invariably lead to social collapse.

Okay. To reiterate what I said at the top of this episode, the whole point of the Science section is to show how our place in the Universe, our essential nature as hypersocial animals, and the way that our brains and our minds actually work, are all at direct opposition to the foundational assumptions that our liberal democratic ideology has inherited from the 18th Century. And I don't know how well you've been able so far to absorb these perhaps seemingly radical ideas.

But I've saved the best—or, more accurately, the hardest to accept—for last.

Although I'm not going to tell you right now what that is. Instead, as always, you're going to have to wait until the next episode. Because, as always, this one is now complete.

In the meantime, though, while you wait, I would once again like to thank you so much for so far having listened.