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SEARCHING FOR HAPPINESS IN THE WRONG PLACES

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Abstract. Addiction mechanisms are described from neuropsychological perspective and explicated in terms of false happiness seeking. The reward pathways in the brain are analyzed. Methods and techniques for sustainable happiness are suggested and argued.

Key words: happiness, pleasure, addiction, dopamine receptors, brain networks.

We are going to talk about how some people look for happiness in the wrong places and then develop some addictions thinking that the feeling good that they get momentarily actually results in addiction that makes them actually feel bad. In other words, their quest to become happier results in them becoming more depressive and more anxious.

In the Western world we have unfortunately developed a craving for bigger, better, more – and as the result of those ostentatious and gluttonous hunger to accumulate things we’ve actually undermined our ability to experience any kind of pleasure, we’ve become habituated after a while getting so much; and getting it without any effort results in a dulling that we could say is habituation. After a while that same experience that initially resulted in a brief feeling of pleasure becomes dull and then becomes nauseous, becomes something that we actually don’t even like. So we started with a brief good feeling but really not so good, a kind of a numbing out feeling, then we got dulled and then it starts to feel bad. There are many neurophysiological explanations for this that I’ll get into.

As the result of this hunger for quick relief by this feeling of better and more we become hyper-focused on some unpleasant feelings, like pain, for example, or stress, or rigidity – and as the result of that we, then, look for relief. There is a progression towards discomfort and depression as the result of us looking for happiness in these brief little gluttonous experiences, and that results in some addictions. Many people in the Western world, especially in the United States, developed (1) an overeating habit (the US leads the world in obesity right now), and throughout the world, throughout areas that have been experiencing a lot of trauma (2) substance abuse is another way that people look to medicate themselves from feeling bad to feeling to feeling good, but they don’t actually feel good. The next way is (3) gambling, especially during COVID-19 pandemic period. For the last two years the increase in online gambling has shot up astronomically as well as being addicted to spending hours and hours and hours on the web doing (4) video games, or online shopping. All of these are efforts to feel better which result in addiction, and actually make us feel worse. But the initial effort was to feel better, and that feel better quality relates to some networks that are very common among the pleasure centers in the brain. So in other words, what I’m suggesting here is that there are many common factors between the feeling good and the addiction and the feeling bad, they are connected to motivation in many ways, because from the evolutionary perspective these

networks in the brain, in the body, in our ability to create thoughts have been very important with regard to our seeking out and doing things that are actually productive. So if we don't have these motivational networks, our species wouldn't be around, we wouldn't go hunt food, we wouldn't go gathering or have families and so on. However, unfortunately, our quest to be happy by doing these brief experiences results in cooping off our motivational networks and resulting in displeasure.

For 50 years or so we've been aware of the reward pathways in the brain. Many different neurotransmitters in the brain. One of the principle ones that are involved in the motivational network includes dopamine. Dopamine is released by a couple of areas of the brain, one of them is called the ventral tegmental area (VTA) and another one is called the substantia nigra. When dopamine is released from the VTA and hits the one of the main pleasure centers of the brain, called the Nucleus accumbens, we get the feeling of pleasure; and then, the prefrontal cortex which is the more advanced part of the brain comes up with a rationalization as to why that was a good thing. So if you are searching for pleasure as brief pleasures that are part of this neurophysiology you're going to come up with some rationalizations as to why that was a good thing and that's what a lot of people do when they develop various addictions, whether it be gambling, alcohol, marijuana, shopping or whatever. You get a big burst of anticipation and then you think that what's going to result from your behavior is going to be a good thing. For example, even before you drink and you know it's approaching 5 o'clock at night you're going to get a release of dopamine from the ventral tegmental area (VTA) that hits your nucleus accumbens, and you go "Great! It's almost 5 o'clock, I can get to sit down with a nice glass of wine and finally I could feel good and be happy". Is that really happiness or is that just a brief feeling of feeling good that unfortunately becomes feeling bad?

We have a variety of more advanced parts of the brain that have evolved throughout our evolutionary history, and one of the most recent and the last one to develop in terms of as a child and adolescent grows up is the top to the side section – dorsolateral prefrontal cortex. This area gives us the capacity to sustain attention and do the executive control of psychological processes. This capacity has been referred to as executive monitoring and is involved in the research related to mindfulness. If you are a person who looks for happiness as brief certain little chunks here and there, your working memory and your dorsolateral prefrontal cortex are going to get adapted or maladapted to this counterfeit experience of happiness. What I mean by counterfeit is fool's gold, it's not a real happiness, it's just a brief experience of pleasure that really becomes displeasure after time.

When you look for happiness in the wrong places, the monitoring through the executive network shrinks and the other areas in the default network and the salience network become more expanded. So what we want to do to retain this capacity to have life satisfaction or happiness is to keep these areas in balance. But what unfortunately happens is that we have less activity going on and it is harder to activate the area of the brain which is a part of the executive network. We use it to hunt down these brief experiences instead of having a more balanced and not an extreme drive for gratification. So that results in more activity in the salience network's capacity to just feel relaxed, and we assume that just feeling relaxed must be happiness. Many people who become addicted to drugs would spend more time searching out opiates (it's a major epidemic in the United States) as well as the benzodiazepines which I call the garbage of the healthcare system (valium, Xanax etc.). And does that result in feeling happy? No, not

necessarily. We distort our understanding of what satisfaction is all about, now it becomes a relief, but it's really not even relief any more.

Another option is to expand your capacity to stay focused and energized but you really have almost an attention deficit disorder is you gravitate towards being too focused on the stimulants (methamphetamines or even coffee): you're just buzzing around and you can't really stay focused in any sustained sort of way.

Or you could spend a lot of time fantasizing and being in another world instead of the world right in front of you; and those people who search for that get addicted to drugs that expand that capacity of the default mode network (marijuana, hallucinogens).

So what we need to do is to work on balancing these mental operating networks: the executive network, the salience network and the default mode network – so we can sustain the feeling of life satisfaction that I'm going to talk about in a few minutes.

We want to understand how to help people not to get caught up looking for happiness in the wrong places, because they do experience a brief feeling relief or even a sense of pleasure that they keep on looking for and it results in the feeling and the thought that that kind of quest makes a lot of sense. In other words, "I'm going to look for happiness by that feeling state or that psychological state", and that means that the reward hub that I have been talking about earlier seems to be the driving force here and it's no longer a reward in a long term set life satisfaction way but a brief burst (drive for the extremes). So we need to get the areas of our psychological capacities to work together. We do not want to lose the capacity for life satisfaction and reward. We want to put in in perspective so it could be more sustained over a period of time. We've got a whole bunch of different neurotransmitters working here that involve all these various networks that give us the capacity for more wide spectrum of feelings of life satisfaction. I don't want to be reductionistic, but the brain gives us the capacity for thought and also life satisfaction.

Let's talk a little bit about dopamine. I don't mean that it is the only neurochemical and we want to reduce everything to dopamine. However, it's the area that gets hijacked, it's the network that gets hijacked as I've mentioned earlier, and it's not necessarily the neurotransmitter of happiness, it's the anticipation of pleasure. That's what we see in a lot of addictive patterns, and one of the problems with these extreme feelings of happiness that we sometimes, especially in the western world, are striving for, is that when we strive for those extremes and have them, whether they'd be drug induced or whatever kind of addiction pattern we might have, the dopamine receptors in the brain actually don't have time to recycle. So actually having big bursts of euphoria results in dysphoria, because the dopamine network in the brain doesn't have time to recycle. To be able to sustain happiness is part of a moderate level of activation, in other words, small pleasures give us the capacity to have sustained pleasures we could call happiness or life satisfaction, and extreme pleasures, euphoric experiences actually give us a roller coaster kind of experience. So that tells us a lot about the capacity for happiness by looking at these addiction patterns. Happiness isn't an extreme pleasure but rather a subtle appreciation for the multiple textures in life. In fact, what we know from this perspective is that rehabilitation for these addictions necessitates us helping people learn how to have subtle pleasures.

This is what happens with the dopamine circuit and how we unfortunately fall into an addictive pattern. We could be riding along and all of a sudden: "Wow, I didn't realize that a glass of wine made me feel great, so I'm going to do this again" (in the first exposure to natural reward the feeling is strong).

receptors are more related to the basal ganglia area of the brain which are the automatic habitual responses, that is a mindless habit that we might have. D2 receptors are the ones that we want to expand because when they do expand they become multiple, they are also referred to as medium spiny neurons that give us the capacity to appreciate the subtleties around us, like walking on a trail, enjoying the sun on our back, different colors that we can see throughout the day as the sun goes through a cycle etc. With the D1 receptors there is a pattern “I’ve got to get home, I want to get a drink, that’s the only time I feel good” – you really don’t but you are still chasing that. The D2 receptors are the ones that give us the capacity to be amused by a nice sunset and to experience all the subtleties.

To be able to experience these pleasures we need lifestyle practices that have been long researched and I just happen to put them in a mnemonic called SEEDS: 1) social 2) exercise 3) education 4) diet 5) sleep – basic self-care behaviors, the five healthy factors that you need to practice on a regular daily basis. My colleagues and I have developed a SEEDS app the link for which I can send to you if you send me an email brain.based.therapy@gmail.com. It’s free on the app store. What we want to do is to be accountable. Everybody can agree that these SEEDS factors are critical, they give you the foundation for happiness. If you don’t do these on a regular basis, you can’t grow these subtle appreciations. SEEDS factors have multiple feedback loops that support them, that are related to your metabolism, to your gene expression, relates to how your immune system gets activated and deactivated and, certainly, your habit motivational systems that give you the capacity to look at the world with a sense of pleasure and life satisfaction. There are multiple networks, so the habit networks in the brain aren’t just the ventro tegmental area (VTA) and the nucleus accumbens, and then your prefrontal cortex comes up with the reasons and so on. There are multiple other networks that give you that capacity.

We also want to keep in perspective that leaning towards a life is very important in terms of being able to sustain positive feelings. So we know that the two hemispheres of the brain have different behavioral capacities: the right hemisphere is more associated with withdrawal and avoidance; and the left hemisphere with engagement and approach behaviors. It turns out that overactivity of the right hemisphere is associated with depression and anxiety which is interesting because avoidance and withdrawal make anxiety and depression worse, while engagement helps you feel better. You don’t feel like doing it but you’ve got to do what you don’t feel like doing to feel better. So happiness in many ways is dependent upon life engagement. You can’t just sit there and wait to feel happy, and we now that from a lot of research that relates to the contemplative practices which include mindfulness etc. We call it affect asymmetry – the difference in the capacities of the two hemispheres that need to be balanced. When you are looking for engagement with others and connectivity with others, when you are practicing contemplative compassionate mindfulness for example, there is more neuroplasticity in the left prefrontal cortex than the right, you are leaning towards life and it really has a tremendous relevance to the capacity of life satisfaction. It’s engagement in life, engagement with others that has the SEEDS foundation.

Across studies we could say that to sustain happiness with the foundation of the SEEDS factors and not getting caught up looking for pleasure in the wrong place is greater than just the absence of disease; it’s really is a sense of well-being, and it’s a well-being in a communal connective way. So it’s a state that you’re able to sustain over a period of time without the extremes. We’ve got to understand the wisdom that has been

discussed in philosophy for a couple thousands of years, way back to Chuang Tzu who recognized that happiness is really not something you hold on to, because as you look for happiness constantly, you're going to get stuck in one of the addictive patterns. So he suggested that happiness is the absence of looking for it so much. Daniel Gilbert wrote a really popular book called "Stumbling on Happiness": these are brief experiences that you could call happiness, and the ability to string them together with a sense of pleasure is a sustained life satisfaction – and that requires the dopamine receptors we are talking about. The savoring of sensation through your capacity for working memory (I've mentioned the executive network above) and a non-judgmental perspective, in other words, you're not always saying "that's good, that's bad", things are much more complex and you notice the subtleties – and that means you need those mental operating networks to be working together.

I like the saying from Zen Buddhism (because it relates to the difference in hemispheres): Zen is not like chopping wood, Zen is chopping wood. In other words, being active and engaged instead of sitting back and waiting for things to happen to you is part of the neurophysiology of supporting the SEEDS elements that give you the capacity for happiness.

So, in general, we can all agree that pleasure is fleeting but we need to stay engaged, we need to develop positive habits to make these fleeting moments happen on a more regular basis. Unfortunately, in more urban environments we have less a capacity to be around in nature; fortunately, many urban environments have parks and it's the experience of being in contact with nature that can help, give you a wider spectrum. Be able to actually see some pleasure in a desert of displeasure, in other words, when things aren't going so well, do you have the capacity to see some positive outcome there? I'm not saying put rosy glasses and deny the bad things; I'm saying look forward so positive things can happen.

Finally, in the era of positive psychology which is really an outgrowth of what used to be called humanistic psychology, we know that the idea of acceptance is really important in many therapeutic practices: just accept where you are and build from there. The result of research on forgiveness doesn't necessarily say "give a person an off, a free ticket" like "that's ok you've hurt me". No, you forgive them within yourself, you still hold them accountable but you're letting go, instead of replaying over and over again the bad things that they did to you.

Also there is a huge amount of research related to gratitude and compassion. It turns out that those two factors are so incredibly powerful. You can wake up every morning and just feel a sense of gratitude about something, that you're just alive and healthy and that's enough, or you're living in a nice place or you have a good family relationship – just having a sense of gratitude and playing that over and over again gives you a sense of lift. The ability that we have to express and feel compassion for one another is the antidepressant and it's also a life satisfaction experience. So if you're able to express compassion, you can actually feel compassion towards yourself. There are areas of the brain that are very strongly associated with these capacities like the anterior cingulate and others that grow with neuroplasticity as a result of you doing good things. So being compassionate and connected with others is part of the psychological perspective that gives you the capacity for life satisfaction and happiness.

We are going through the three networks – the executive, the salience and the default mode network – constantly, there's no one thing called the mind. The researchers who are exploring mindfulness and different types of meditation are centering their

attention on these different areas of the brain that we can, then, harness and cultivate so that we could have the subtle levels of appreciation that have more staying power to give us life satisfaction.

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