

The Self-Reg View on Series.

by Dr. Stuart Shanker

The Self-Reg View on: Risky Behaviour

In our very first webinar in the 'Epidemic of Epidemics' series we looked at the "anxiety epidemic." Today I want to look at the opposite end of this spectrum, the epidemic of "manic" children and youth. Kids who are chronically hyper, driven to find ways to fuel their need for adrenaline, to do things that keep them overexcited—and their parents or teachers frazzled. Kids that are driven by some mysterious impulse to engage in risky behaviours. The idea that anxiety and manic behaviour represent two poles on the same spectrum may at first strike you as surprising, even counter-intuitive. But Self-Reg helps us to understand their relationship, and more importantly, to help the manic child or youth find healthy avenues of self-regulation.

I had an experience the other day which got me thinking about this topic; something that instantly took me back to my days in undergraduate psychology. I had taken my daughter to a fast-food restaurant after school and, because I was so hungry, finished off her half-eaten burger and fries. There must have been a lot of salt in the meal because it left me thirsty, but the only thing to drink was some of her pop: something I never touch. And I was surprised when I tried it: it was so sweet that it caused an unpleasant tickling at the back of my throat.

The experience that it immediately took me back to was when our prof taught us about the "Wundt curve," named after one of the founders of psychophysics, Wilhelm Wundt. He had us sample various sucrose and fructose

solutions to show us how, past a certain point, the taste of "sweetness" starts to become unpleasant. That was my reaction to the pop: so sweet that, to me, it tasted bitter. And then I got to wondering: is this the reason why I prefer water? That is, it has nothing to do with any sort of conscious decision to be healthy: it is simply because, for physiological reasons, I find a cold glass of water refreshing and pop quite the opposite?

The "Wundt curve" represents the point where a stimulus produces maximum pleasure: what is called the "Optimal Level of Arousal" (OLA). It isn't just pleasure that's at stake: it's actually the point at which we experience "optimal cortical arousal": i.e., where the brain is primed by neurochemicals to pick up and process sensory information. As a result of the interaction between biology and experience, we all have different OLAs. But overall, we divide into "low" and "high" groups: those that reach their peak level of arousal with a relatively modest amount of stimulation, and those who need a great deal more. Give someone with low-OLA a Starbucks Peppermint Mocha Frappuccino (which actually has more than 16 teaspoons of sugar in it!) and they'll likely spit it out; give someone with high-OLA the same drink and they'll ask for a second (think Will Ferrell in Elf).

We are unconsciously driven to adjust our different kinds of sensory experiences to suit our different "sweet spots" (forgive the pun): the level of noise that we find most pleasant, or for that matter, the kind of sound we most

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like. (Plato hated the sound of the flute—actually, it was the auylos, but “flute” is close enough—and so did Mozart, although it’s not clear whether this was because of the sound of the instrument or because it was so difficult to play a baroque flute well).

It applies to the types of music we like to listen to (David Crosby or AC/DC); the types of art we like (John Constable or Jackson Pollock); types of literature (Jane Austen or Anne Rice); types of movies (Tree of Life or Transporters); types of food (tofu stir fry or vindaloo curry); types of fabrics (soft cotton or coarse wool); types of light conditions (bright or subdued): well, you get the idea.

To be sure, our likes and dislikes vary according to our mood and physical state, but always within the overarching limits set by our OLA. Those with a low-OLA tend to be what we might call “sensory-conservative”; those with a high-OLA “sensation-seekers.” And it’s the latter that are most vulnerable to risky behaviours. It was Marvin Zuckerman who did the seminal research on this topic. He found that it’s not the risk per se but rather, the “sensation reward” that induces a high-OLA driver to speed, a “thrill-seeker” to base jump, an adolescent to experiment with alcohol or drugs. The reason why is a fascinating bit of science.

When you map sensory arousal on a graph you get an inverted U-shaped curve, where the far left represents hypoarousal, the peak of the graph the OLA, and the far right hyperarousal. As we move up the curve towards the peak we experience positive emotions (interest, alertness, enjoyment); and as we move past the peak we experience negative emotions (boredom, anxiety, irritability). This in itself is an important point that I’ll come back to below; it’s basically a reflection of the positive emotions we experience when what we’re doing is energizing as opposed to the negative emotions that accompany enervation. This facet of the “biological/emotion nexus”

helps us to understand why the high-OLA makes a beeline for the roller coaster or the Gravitron while the low-OLA probably won’t even step into the amusement park. Zuckerman showed that if you place high-and low-OLAs in a sensory deprivation chamber you see a distinct pattern in their responses: the high-OLA group become restless sooner, and far more so than the low-OLA group. In other words, the high-OLA group finds the experience much more stressful than the low-OLA group. They are actually burning more energy to cope with the lack of stimulation.

This finding tells us something important about sensation-seeking behaviour. The high-OLA group, the ones who are adding more sugar to their drink, cranking up the volume on their car stereo, driving fast or recklessly, are driven by an unconscious urge to reduce the stress of being under-stimulated while seeking the positive rewards of more stimulation through the intensity or novelty of their sensory experiences. The low-OLA group are drawn to Ovaltine and Tai Chi in the park and driving in the middle lane on the freeway.

I’m exaggerating, of course, but it’s interesting to think about our personal likes and dislikes in terms of our individual “sweet spots”. Take bottled spaghetti sauce at the supermarket. We all know that some of these sauces are loaded with sugar; but not all of them. In fact, some have only a quarter of the amount of sugar contained in the highly sweetened sauces. We may not be in the least aware of these differences, let alone how they relate to our OLA; we just know that one sauce tastes so much better than another.

This, of course, is the whole point of the so-called “bliss point” in food science: the combination of sugar, salt, and fat that maximizes how good something tastes and, as a result, has a phenomenal impact on sales.

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The bliss point was discovered by the Harvard-trained psychophysicist Howard Moskowitz, and it takes the idea of a “sweet spot” to a whole new level. Moskowitz realized that the point at which we find a food most “palatable” (although “compelling” might be a much better word) is not determined by a single sensation (e.g., sweetness), but a combination of sensations, including texture, smell, acidity, and viscosity. But what Moskowitz really discovered was not the bliss point for a given food but rather, different bliss points that would appeal to different palates.

That was the whole point of the industry-changing work that he did for Prego. He came up, not with the perfect pasta sauce, but five (and eventually 37) different sauces, each designed to appeal to different bliss points. But Moskowitz was a little too good at what he did; for the effect of tapping into a bliss point is that the striatum releases a wave of neurochemicals that produce a surge of energy and even bliss (hence the name), that dull our pain, and that make us crave more of the same.

Unfortunately, as I’ll look at in my next webinar, we can become sensitized to these rewards, which can lead to over-eating in order to achieve the same effects. In the process, the bliss point can take us well past our sweet spot: past our optimum level of arousal into hyperarousal. Which brings us to one of the most fascinating of all Zuckerman’s discoveries. He found that if low-OLAs are pushed past their OLA they become anxious, whereas high-OLAs become manic. And we are living in a time when children, both low and high, are constantly pushing past their OLA.

Food is just one aspect of why this is happening. We can say the same about music. Sure, I realize that my parents would have said much the same; but it turns out that they would have been right! Very interesting research has been done by music technology companies showing that pop music has been

steadily getting louder and far more “energetic” (i.e., arousing) over the past thirty years, and especially over the past fifteen. The same has been happening with movies. Video games. Theme parks. Restaurants. Professional sports and entertainment. You name it and, as far as sensations go, too many children and youth are moving well past their OLA. And this presents a serious problem: a generation of children and youth that are chronically hyperaroused and, as a result, plagued by anxiety at one end of the spectrum and manic behaviour at the other.

It is, of course, possible to be both anxious and manic at the same time. But typically, the manic child or youth does not display the sort of fear-based nervousness or rumination that we see in one that’s anxious. The problem is that, all too often, we confuse manic behaviour with joyful exuberance, which is one of the reasons why parents may inadvertently feed the problem. It’s the shrieking and shrill laughter and frenetic activity that confuses us. But the child caught in a manic cycle isn’t driven by the positive emotions that fuel approach behaviour: he is merely trying to stay hyperaroused. In this state he has little prefrontal capacity to listen to us, or exercise self-control, or appraise the risks of what he’s doing; it’s the “sensation reward” that is driving his behaviour, and pushing him further and further into the state of severe energy depletion where explosive or mindless behaviour is sure to follow.

The reason anxiety and manic behaviour represent opposite poles of the arousal spectrum, then, is because as we move past the “sweet spot” a stimulus becomes a stressor. Take the case of “optimal sweetness”: we aren’t just dealing here with a matter of the taste that we find most pleasurable, but the maximum amount of glucose that we can metabolise. In fact, these two factors—the subjective and the physiological—are opposite sides of the same coin. We saw how moving up

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the “Wundt curve” produces positive emotions and moving down negative emotions. It is moving too far down the latter that leads to mindless risky behaviour. In this state the child or youth is oblivious of what his internal receptors—his “thermostats”—are telling him, which is when he needs more and when less of a certain kind of stimulation: a point that applies just as much as, if not more, to our “internal” as to our “external” senses.

It is these “thermostats” that tell us when the stimulus is becoming a stress and the cost-benefit energy ratio is shifting into negative territory: e.g., when the amount of glucose being ingested is reducing from rather than increasing our energy reserves. This is what we mean when we talk about excess glucose as a “hidden stressor”: all that extra glucose has to be eliminated from the blood stream, and this imposes a heavy cost on the liver and the pancreas. Without our realizing it, our body starts to burn far more energy than it receives in order to get rid of what has now become toxic. And if the hyperarousal becomes chronic, this can trigger a dysregulated cycle in which we crave more of the very things that are causing this “allostasis” in the first place, exposing us to both physical and mental health problems.

In other words, we are now seeing the same sort of risky behaviour in regards to junk food addiction that was previously seen with smoking: in this case, the risk of diabetes, heart disease, damage to the liver, inflammation, impaired memory and learning skills, and even, as it turns out, diminished emotional awareness and regulation. The problem here is not a lack of education, nor, for that matter, willpower, but the consequences of driven by the “sensation reward” past the OLA into hyperarousal, and then the vulnerability to risky behaviour as a desperate attempt to sustain the hyperarousal. That basic insight must inform how we set about to help the manic child learn how to self-regulate in an adaptive, beneficial manner.

Punishing a child for sensation-seeking behaviours, or trying to explain the dangers (over and over) of risky behaviours, or resorting to graphic images to frighten the child away from risky behaviours have all proven to be exercises in futility. What we really need to do is Self-Reg: i.e., recognize manic behaviour for what it is, and identify and reduce the stressors across all five domains so that the child or youth can get back in touch with the internal signals that warn him when he’s moving into hyperarousal. But what is perhaps most important is to discover self-regulating practices that he enjoys, which is the subjective side of sympathetic-parasympathetic balance.

The enemy here isn’t sensation-seeking: it’s the hidden costs of maladaptive, potentially dangerous forms of sensation-seeking. This isn’t a trait that is easily subdued, and it’s one of the reasons why sensation-seeking children often have the same sort of stress reaction as the high-OLA subjects in Zuckerman’s sensory deprivation study when they are first introduced to yoga or meditation. That doesn’t mean that they can’t come to love yoga or meditation, and for that matter, that they can’t change their arousal set point. But we can’t force this on them; it has to be a slow and ultimately self-directed process.

In the meantime, there is a world of beneficial forms of sensation-seeking just waiting to be discovered: everything from sports to music to art to cooking to backpacking to stationary bikes in the classroom. The possibilities are endless. The key, however, isn’t simply to help the child or youth calm down, but to help them become aware of when they’re moving into a hypermanic state, why this is happening, and what they can do, not just to feel better, but actually be better. Is it possible to structure the classroom and school environment to make this a constant and viable possibility? The evidence so far from those teachers practicing Self-Reg is a resounding, in fact, a deafening YES.