PART II: MAKING CHANGE

Culture Change and Neuroscience

We humans are both selfish and sociable creatures. If we want to adapt successfully to a future of less energy per capita, and little or no economic growth, then we might be better off with a little more sociability and a little less selfishness.

Neuroscience teaches us that these two behavioral pathways have somewhat different origins and mechanisms. ***Selfish*** behaviors are wired deeply into the survival mechanisms of the primitive brain. ***Cooperative*** impulses are also rooted deep in our evolutionary past; however, self-restraint and empathy for others are partly learned behaviors, acquired and developed in the same way as our capacity for language. Both selfishness and altruism are inherited, but culture generally nudges us more in the direction of cooperation.

Throughout the evolution of complex organisms, notably vertebrates, ***status*** has played a significant role as a way of minimizing the costs of competition. Animals compete for mates and food, but competition carries costs. Signals of status within a species establish which individuals are more or less likely to be successfully challenged, so overall there is less energy wasted in competition. The peacock's tail is an example of a status signal—it has costs (it makes the peacock more vulnerable to predators), but it confers greater likelihood of reproductive success. Tendencies among modern humans to acquire status symbols like expensive cars, clothes, and houses are therefore deeply rooted in evolution.

We humans are also wired to respond to ***novelty***—to notice anything in our environment that's out of place or unexpected and that might therefore signal a potential threat or reward. Most types of reward increase the level of the

neurotransmitter ***dopamine*** within the brain. Experiments have found that if an animal's dopamine receptor genes are removed, it explores less and take fewer risks—and without some exploration and risk taking, individuals have reduced chances of survival. But the brain's dopamine reward system, which evolved to serve this practical function, can be hijacked by addictive substances and behaviors. This is especially problematic in a culture full of novel stimuli specifically designed to attract our interest—such as the hundreds of advertising messages the average child sees each day.

Addictions to shopping or to acquiring status symbols are hard to overcome because they are reinforced by our innate brain chemistry. They can be as hard to defeat as a drug dependency. If our environment is filled with potential dopamine reward system hijackers, then it stands to reason that more of us are likely to end up spending much of our lives chasing after momentary feel-good experiences that soon turn sour. And that's why our society seems overwhelmed with high levels of drug, gambling, sugar, television, social media, and pornography addiction.

Over countless generations, human societies learned to tame biologically rooted reward-seeking behavior with culturally learned behaviors geared toward self-restraint and empathy for others. Prudence, thrift, and the willingness to sacrifice on behalf of the community, these are functions of the ***neocortex***—the part of the brain unique to mammals—and even though they're rooted in evolutionary imperatives, they're also at least partly learned by example. Most traditional human societies expended a great deal of effort to provide moral guidance, often through myths and stories, to foster pro-social behavior. When a culture ceases providing this needed educational effort—either because self-restraint and empathy are no longer seen as important, or because the society is so overcome with basic survival issues that it simply doesn't have the resources to devote toward educating the next generation—then these values can become seriously eroded.

Consumerism hijacked our brains' reward pathways for status and novelty, and it has also deliberately eroded our learned social adaptations for restraint and empathy. It reduced the perceived social value of thrift and sacrifice on behalf of the community in order to promote the ideal of individual gratification through consumption. Again, this was done in order to expand markets, create jobs, expand tax revenues, and defeat the problem of overproduction.

But there's more. We also have an innate tendency, when making decisions, to give more weight to *present* threats and opportunities than to *future* ones. This is called ***discounting the future***—and it makes it hard to sacrifice *now* to overcome an enormous *future* risk such as climate change. The immediate reward of vacationing in another country, for example, is likely to overwhelm our concern about the greenhouse gas footprint of our airline flight. Multiply that by billions of individual decisions with climate repercussions and you can see why it's difficult to actually reduce total greenhouse gas emissions.

To make matters worse, all of us in wealthy nations suffer from what's called ***the lottery winner's syndrome***. Sociological studies of lottery winners show that many actually experience a *reduction* in happiness and well being: they're overwhelmed by choice and excess, their relationships become discolored by jealousy and suspicion, and they often tend to become more socially isolated and to feel less empathy toward others. Some end up gambling away their money, divorcing, or turning to drugs or alcohol. In a sense, the people who benefitted most from the fossil-fueled industrial revolution are like lottery winners: they have collectively experienced a vast and rapid increase in wealth. They've grown to think that they must somehow deserve this level of wealth, and their sense of empathy toward poorer communities—both domestically and globally—has pretty much shriveled. They may also feel more isolated, and are more likely to pursue high-risk behaviors with a high potential reward so as

to extend and repeat that initial high they got when they realized they had the winning ticket.

All in all, if we're going to achieve deep cultural change we face some hefty obstacles. We'll need to find long-term ways to heal our culture so that it once more teaches self-restraint and empathy. Over the short term, we probably can't change people's tendency to want *more*. But we can define what "more" means. As the amount of energy and ecosystem services available to us declines, and economic growth therefore reverses itself, people may be increasingly open to redefining success in terms of relationships, community solidarity, and shared experiences rather than the mere acquisition of stuff.

Cultural stories won't shift with the wave of a magic wand. As we promote pro-social behaviors that also benefit the integrity of the natural world, we must always look for ways to motivate people that work *with* human nature—the selfish as well as the cooperative bits. We are deeply social creatures who need social relationships to thrive, and that requires giving and reciprocity. We are also driven by status and reward. We can rewire our brains to some degree through the formation of new habits, but that requires setting intentions and sticking to behaviors that are at first unfamiliar and even uncomfortable.

So: can we harness both of these aspects of ourselves—the competitive and the cooperative—by creating new cultural stories in which high status and reward are attached to habits and behaviors that promote healing, sharing, giving, creating, growing, conserving, and thriving within constraints? Can we make those behaviors the ones we look up to?

This may be one of the great cultural projects of our time, one that engages not only creative artists and social activists, but households and communities as well.