



Henry A. Nasrallah, MD
Editor-in-Chief

This disastrous political ‘climate change’ may have ominous repercussions for the brains of the political combatants themselves, and even for those on the sidelines

Neuropolitics in the age of extremism: Brain regions involved in hatred

We psychiatrists encounter a wide variety of intense negative emotions in our patients on a daily basis, whether in the clinic or on an inpatient unit. These include rage, irritability, hostility, paranoia, loathing, and unadulterated hatred.

We evaluate, diagnose, and treat the underlying psychiatric brain disorders that generate such maladaptive emotions, and have our patients regain their baseline functioning by resolving the psychopathology that ignited their amygdala and their limbic circuitry.

But while we can manage the microcosm of one patient’s mental state, we are unable to intervene in the macrocosm of an entire society ravaged by extreme hyper-partisanship and naked bidirectional hatred. It is literally impossible for even the most skillful psychiatrists to repair a nation caught up in poisonous emotional turmoil, irreconcilable political differences, and a veritable war of belief systems that mimic religious fanaticism, which history tells us led to so many tragic wars over the centuries and millennia.

Ideally, politics is supposed to be an elegant cerebral process, a debate of ideas across disparate ideologies, the product of which is expected to be the advancement of the welfare of the nation

and its citizens. But what we are currently witnessing is a distressing degeneration of politics into personal hatred and ad hominem attacks, with partisans frothing at the mouth as they describe the utter stupidity and dangerousness of their despised political opponents-cum-bitter enemies. They even declare each other “mentally ill,” which is an absurd explanation of why other people do not agree with their belief system. Neither side can find an iota of redeeming value in the political views of the “other side” and hurl insults and epithets verbally and in writing via dueling books that become instant best sellers among the partisan aficionados on both sides.

This disastrous political “climate change” may have ominous repercussions for the brains of the political combatants themselves, and even for those on the sidelines who are subjected to the relentless stress of witnessing a social train wreck in the making. As a neuropsychiatrist, I wonder if the collective national amygdala of the country is on fire, and the national prefrontal cortex is being corroded by the pervasive and ugly negativity that engulfs us all, with social media that incites its users night and day, adding gasoline to the fire. Chronic stress and its associated hypercortisolemia are known to be neurotoxic to the hippocampus and eventuate in clinical depression and its grave consequences.

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henry.nasrallah

@currentpsychiatry.com

I think I sensed this odious scenario coming 2 years ago during the bizarre presidential election, when I wrote an editorial describing the “fear and loathing” that permeated the political process and the unusual behavior of the candidates.¹ A year after the election, I commented about the toxic zeitgeist of political extremism from a psychiatric perspective.² The situation appears to be getting worse, and the folie en masse is intensifying and its hateful cacophony is deafening to our sensibilities.

Aaron Beck, MD, the father of cognitive-behavioral therapy (CBT), wrote a book about hate.³ It may be a fantasy, but I wish the leaders on both sides would agree to a course of CBT to recognize the destructive path of intransigent hyper-partisanship. They might then transcend their egocentric attitudes and inspire millions of their followers to communicate rationally, instead of stoking the fires of resentment and enmity toward the “other side.”

Let’s get back to science: Where are the pathways of hate located in the brain? An interesting study was conducted to detect the neural circuits that mediate hate.⁴ The researchers obtained functional magnetic resonance imaging scans of participants while they were viewing the face of a person they hate compared with the face of an acquaintance toward whom they have neutral feelings. They also calculated a “hate score” for each participant for the analysis. They found that viewing a hated person *increased* the activity in several brain regions, including the medial frontal gyrus, right putamen, premotor cortex, frontal pole, and medial insula bilaterally. The activation in 3 areas correlated with the intensity of the hatred: right insula, right premotor cortex, and right frontal-medial gyrus. At the same time, the right superior frontal gyrus showed *deactivation*. Interestingly, hate and romantic love shared activation in 2 areas: the putamen and insula. This suggests that passionate love and passionate hate are 2 sides of the same

neural coin! It prompts me to wonder what happens to the capacity to love among political extremists when their putamen and insula are filled up with hate. It also makes me wonder if unbri-dled hatred can be “enjoyable” and even addictive, as passionate romantic love is.

The bottom line: Consider the brain changes that are occurring on a large scale in at least a hundred million political partisans, and whether those neural circuits get even more intensely activated following the elections, regardless of the outcome.

Finally, we must remain cognizant of the epigenetic consequences of emotions and stress.⁵ There is solid scientific evidence that extremes of human experiences can modify gene expression in sperm and fetuses, resulting in a trans-generational effect upon the children of the extreme partisans, and also the children of nonpartisan observers, who experience unmitigated anxiety due to the inescapable cloud of negative affect shrouding their daily lives.⁶ So politicians should be cognizant that perpetuating a bitter war against each other may be detrimental to their progeny and future generations. I am frankly worried about the epigenetically disrupted emotional stability of voters circa 2035, born in these days of unprecedented and tumultuous hatred by their hyper-partisan parents.



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