

*The Evolutionary Origins of Paranoia: A Speculation*

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In an era where paranoid ideation appears to be rampant—including such beliefs that vaccines are a vehicle for governments and tech companies to implant computer chips in our bodies—it seems timely to ask ourselves about the origins of paranoia in homo sapiens.

We can start by observing non-human mammals, such a herd of Sambar deer as they graze in an east Indian forest in an open meadow. Constantly on alert, they attend to any signal that might mean a tiger is getting ready to pounce. The difference between story-telling primates, like us, and the deer is that, after the ‘crisis’ is over, life for them returns to what it was before—grazing and monitoring their environment. With human story-tellers, however, after the event a perseverating self-consciousness and history is born through imagination and the linguistic narratives constructed about what occurred. We think about it, compare notes and express a range of thoughts and beliefs about the event and its meaning.

I assert that our deep evolutionary roots as prey animals have bestowed on us an easily triggered danger alert and response system. This neural organization, I would argue, is capable of driving the more evolved brain systems into paranoid ideation. By paranoia I am referring to our capacity for creating beliefs and scenarios in which malevolence and threat are ascribed to people, organizations, situations and/or hidden forces where no clear, empirical evidence of threat can be directly detected or consensually verified—leaving a sense that dangerous forces are ever present.

What clearly differentiates paranoia from feelings of justifiable threat is the belief that there is hidden danger that only can be inferred based on a pervasive sense that something threatening is operating behind the scenes even though it cannot be specifically detected. Typically, these beliefs are held to be true with an unshakeable certainty, no matter what counter-evidence is provided. Paradoxically, it seems that our higher neurological evolution—our development of an advanced prefrontal cerebral cortex for planning and executive con-

trol together with our capacity for symbolic abstraction through language — gives us both the propensity for paranoia and our capacity for rational discernment.

As in all prey animals, evolution through natural selection has bestowed on our species a highly attuned danger detection system — one that is finely balanced between under-reaction and over-reaction to perceived danger. With the evolution of a prefrontal cortex our brains became capable of future planning and imagining future consequences as well as what might be the intentions of others. The addition of a capacity for symbolic cognitive processing, primarily mediated through language, allows us to create complex scenarios (stories) in which we can test (cognitively) potential strategies and possible responses before acting. These inner narratives are part of our ‘self-stories’ through which we define our beliefs about who we are, as well as what is real or not. Thus perceptions and thoughts resulting from an activation of threat are continuously narratized into a ‘self-story’ colored with a sense of threat.

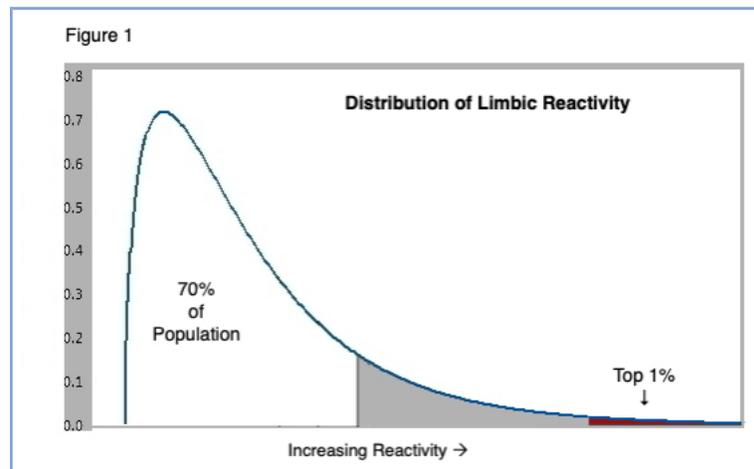
In my work as a psychologist and researcher over the past 50 years I have been struck by how often individuals’ ‘self-stories’ contain significant paranoid attributions — perceived sources of external control and threats constructed from imagined and unverifiable sources. A typical example is a conspiracy ‘theory’, a notion that a sinister individual, group, or ‘force’ is deliberately creating harm in order to gain power and to advance their objectives. A recent broadly disseminated example is that Hillary Clinton has been operating a pedophile ring out of a pizza parlor basement as part of a cabal working to control the world.

I would argue that the more evolved pre-frontal brain of modern humans, when activated by the danger alert mechanisms of the limbic system, creates a distinct paranoid ‘tilt’ to the way we interpret perceptions associated with threat — they are imbued to varying degrees with feelings of portentous danger, not unlike a deer attending to sounds that may mean tiger. In humans, however, as our alert system rapidly attends to the threat, the more advanced brain, with its capacity to narratize and strategize, will create a story that ‘explains’ what is going on. There appears to be a tendency in this storytelling process to over-construct narratives by filling in more than what our senses have perceived. For example, imagining and attributing a source for the felt threat even when the confirming data is unclear or missing entirely. When this occurs, overall fear and uncertainty increases, further activating the danger signal that becomes part of the story of impending threat.

The impetus underlying our ancient neurological alert system is survival, but it evolved in far less complex social systems. The ‘self-stories’ our brains now construct for us to ‘explain’ what is happening, while still focused primarily on danger and survival, have become more intricate as the sources of threat have become more diversified, diffuse and therefore less clear. As a result it is increasingly difficult for our ancient warning system to clearly identify true danger. This ambiguous situation inevitably leads to an increase in the paranoid ‘tilt’ of our

cognitive processing as we attempt to use our ‘executive’ and ‘linguistic’ brains to understand and interpret the danger signals.

Like everything else in nature, overall ‘reactivity’ (reaction time + intensity of response), can be represented graphically as a statistical distribution. This curve, if we were to plot it from actual data probably would be somewhat skewed — unlike a standard bell curve — with almost no ‘leg’ at the low end (left) and a much longer ‘leg’ at the high end (right) (see Figure 1).



The majority of the area under the curve ( 70 percent) represents the proportion of the population that reacts just enough to evade capture most of the time. To the left are almost no very slow ‘reactors’ — those most likely to get eaten by a predator — while to the right of the majority are what we might call ‘over-reactors’, animals who, due to neurological variation, perceptually process and respond faster and more intensely than necessary. This latter group has the disadvantage of using too much energy and becoming fatigued, by reacting too frequently and extremely, as well as creating a separation from the herd, thereby affording these animals less protection.

In summary, this skewed distribution of ‘reactivity’ is the result of evolution through natural selection. For millions of years the pressure caused by predators has created the bulk of any prey population to be slightly over-reactive to potential threats — ‘just fast enough’ to escape predators. The higher level reactors will tend to survive more than the overly low reactors, thus leading to more over-reactors than under-reactors, but still a smaller proportion than the majority of the population.

As we move up the evolutionary ladder of neural development we observe that humans have the most advanced prefrontal cortex of all mammals. When a novel stimulus lights up our limbic brain alert mechanism, like a deer with a tiger on its tail, we react quickly but unlike deer our cortical oversight and language go on to create understanding as a narrative about what has happened and why. A ‘self-story’ is thus constructed which includes a decision as to what the signal means immediately followed by planning and decision-making as to what the appropriate response should be now and in the future. For humans, we literally tell ourselves what is going on and how we should understand its meaning — threat or not, useful or not, desirable or not—as well as how we should react.

For most of us, these ‘self-stories’ will contain an edge of threat when being generated in novel situations, but not so intense that the alert reaction cannot be managed and contained through prefrontal assessment. In most people, there are properly functioning inhibitory neurological mechanisms that moderate alarm responses, thereby preventing perseveration into an out-of-control positive feedback loop in which paranoid ideation gains momentum and takes over, dominating how we perceive the world around us. Of course, that fine-tuned control sometimes breaks down, initiating a positive feedback perceptual-behavioral loop.

In Figure 1 we also can observe a group that represents about one percent of the general population—the most extreme end of the top thirty percent of high reactivity. It is also known from empirical data of the past one hundred years that slightly more than one percent of the general human population will have at least one psychotic episode in a lifetime. Such individuals appear to get caught in a loop from which they cannot escape and, arguably, are probably the same one percent of reactivity outliers as seen in the above distribution.

Paranoid psychotic ‘self-stories’ consist of extreme and often bizarre fears and represent outliers in the distribution of reactivity in the general population. Based on statistical laws we would expect to find the occurrence of a fairly constant background rate of close to one percent for paranoid psychosis as inevitable in a population skewed toward over-reactivity, a situation that originally would have been set by natural selection in prey animals. More importantly, the background rate of occurrence of paranoid psychosis suggests that these types of ‘self-stories’ exist across the entire human population, but for the majority of us they are at a diminished intensity that can be rationalized away and managed within normal daily life.

A closing thought: is it possible that the mass interactions and instant feedback of social media is driving the overall reactivity of the population to higher levels than ever before with a resultant increase in the overall paranoid ‘tilt’ of the population?