

PERSONAL DEVELOPMENT E- BOOK 6:

Lizard Brain



By The American institute of health Care Professionals, Inc.

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Lizard Brain, Writer's Block and You

We are all victims of an evolutionary accident. What is this accident? Well, let's just say that you have a part of your brain that still believes you're a lizard. For this part of your brain, time has stood still. This part of your brain acts as if you are living one hundred million years ago. It wants you to stay alive. In fact, the only function of this part of your brain is to insure that you do stay alive. It is designed to keep you out of the jaws of predators while, at the same time, helping you to become a more successful predator. However, the chances of you being hunted by a velociraptor or a sabre toothed tiger in today's day and age are fairly slim. So instead, your lizard brain reacts to non-threatening, modern stressors as if they were primitive, life-threatening situations. As a result, you fight, freeze or flee from deadlines, success, interpersonal relationships or the thing you really always wanted to do as if they were a rabid pack of stampeding tyrannosaurs. File it under unintended consequences. You're welcome.

So, when you're facing crippling writer's block, you're actually facing your own ingrained, evolutionary survival behaviors. When you look at that empty computer screen or blank sheet of paper thinking about content and deadlines, your lizard brain sees trouble. It doesn't understand the niceties of creativity or the responsibilities of earning a living. That's stuff for the newer, more rational, parts of your brain. Instead, this ancient remnant of a long gone age interprets your stress as a signal to freeze. Don't take action. Don't solve the problem. Above all, don't move. The result is a classic case of writer's block.

Fortunately, when it comes to writer's block, this situation is fairly easy to fix. The first step is to recognize that the writer's block is a result of your lizard brain being unable to realize that you are not under any threat of immediate death. Next, take a moment to also recognize that the block is a direct result of your lizard brain unconsciously affecting your behavior. In response to the perceived threat, your reaction is to freeze. Finally, purposely ignore this unconscious reaction.

Instead of freezing, do the opposite. Take action and solve the problem by doing the one thing you want to do the least – start writing. Once you begin to break down the behavior by moving forward, you'll find that the writer's block itself will break and your creative juices will flow.

What the Heck is Lizard Brain?

So there you are at the party. You've been looking forward to it for a long time. You're mingling, greeting old friends, laughing and having fun when someone you've never met enters the group. It doesn't matter who this someone is. They can be anyone. The moment this person joins the conversation, your mood slightly changes for the worse. You are a little more aloof. You are slightly suspicious. You realize that your hackles are up. When you realize your reaction, you feel a little foolish. Still, the fact that it occurred is undeniable. Congratulations, you've just met your lizard brain.

We are creatures of evolution. Our ancestors, distant and otherwise, evolved under certain specific conditions. These conditions dictated which creatures survived and why. The survivors got to pass along these survival advantages to their offspring. Each generation, this process was repeated and the engine of evolution inexorably ground forward, fired by natural selection and mutation. We are the latest model in a long line of models.

Our brains give our species the current competitive advantage. Yet, our brains have evolved as assuredly as our hands or our eyes. They are an ongoing project. Sort of like a handyman's special, the oldest, and perhaps most obsolete, parts of our brains coexist alongside the most recent improvements. The lizard brain effect is a result of this coexistence.

At the back of your head, right on top of your spine, you'll find the part of your brain that anatomists call the amygdala. This is the part of your brain that is the oldest and the part that you anatomically share with dogs, cattle, snakes and crocodiles. It's the part of your brain that regulates the basics – hunger, body temperature, respiration and sex drive. The problem with the amygdala is that primitiveness.

See if a crocodile is hungry, it eats. It might eat something that it caught and it might eat its own young. What it eats doesn't matter. The only thing that does matter is that it ate. Fed creatures survive better than starving ones. Also, if another crocodile enters the territory of our crocodile they will fight. It doesn't matter why the outsider is there. What matters is that they are effectively driven off or killed, thereby protecting food sources, potential mates, etc.

That crocodile brain is still alive in each of us, telling us to eat or mate or fight, no matter the consequences. Those impulses are, to a large extent, controlled by our higher brain functions. Yet, every now and then, they rear their leathery and scaled heads. The result is your reaction at the party.

Lizard Brain, Procrastination and You

There is an old Spanish proverb that says tomorrow is the busiest day of the week. Anyone who procrastinates may shake their head in agreement at this saying and, perhaps, crack a rueful smile. For those prone to waiting until the last minute to get a job done, procrastination is a destructive curse. It causes untold stress. It ruins reputations. It contributes to financial hardship and it places a solid roadblock on the road to success. The irony is that the tendency to procrastinate is actually caused by an evolutionary survival mechanism that is maladapted to the pace of the modern world. However, because of this very reason, procrastination is preventable and curable.

The source of procrastination is located deep within the most ancient part of the human brain. This area of the brain is technically known as the amygdala. It sits at the very base of the brain on the top of the spinal column. The amygdala is responsible for controlling many, if not all, of the involuntary bodily functions. Things like hunger and thirst, sleepiness and wakefulness and pulse and respiration are run by the amygdala.

If you were to say that because these involuntary functions are so basic that they are animal-like, you'd be correct. The urges to eat, sleep, procreate and survive are common impulses shared by many different species, both mammalian and non-mammalian. The motive force behind all these needs is the amygdala. In fact, if you were to compare the amygdalae of a human being with a horse, an ostrich and a boa constrictor, you would not see much anatomical difference except in size. Each separate amygdala functions in a remarkably similar way, no matter the species.

So, how does this all tie into procrastination? Well, when faced with a need, the amygdala can only respond in one of three ways – fight, freeze or flee. Depending on the situation, one or another of these choices becomes appropriate. So, when an individual is faced with an upcoming task or deadline, the amygdala may misinterpret the stress cause by this time limit as a life threatening situation and subconsciously motivate the individual to freeze. While this was a useful strategy fifty million years ago, today it simply causes procrastination.

The easiest way to combat what is, in essence, a mixed-up brain signal is to consciously recognize where the impulse to procrastinate comes from. Once done, it becomes harder and harder for the individual affected to give in to the urge to freeze. Eventually, the habit to procrastinate falls away, along with its harmful effects.

How to Fight Lizard Brain

So, you read the title of this article and probably thought "Huh?" That reaction is not unexpected. In order to know how to fight lizard brain, you have to first know what lizard brain is. Fair enough.

The term "lizard brain" is a popular connotation of the anatomical term "reptilian complex" or "R-complex". The term, "reptilian complex", in turn, refers to a specific part of the human brain known as the amygdala.

The amygdala is the part of the brain that controls basic functions and needs, things like pulse, respiration, hunger and sleep. It is also one of the oldest parts of the brain, from an evolutionary standpoint. We share the structure of our amygdala with sheep, goats, snakes and lizards. Because of this, the r-complex is also the source of rigid assumptions, fear and compulsive behaviors.

The r-complex is surrounded by newer, more developed areas of the brain, such as the limbic system and the neocortex. This means that the assumptions and fears generated by the r-complex in an effort to satisfy basic needs interact with complex brain functions like rational thought. The resulting mix of signals can, and does, result in some fairly negative behaviors.

These lizard brain behaviors range from phobias to snap judgments to procrastination to writer's block and more. They arise because the r-complex is designed to work in only one simple mode. When confronted with a challenge, such as hunger, or a perceived threat, such as a frightening situation, our lizard brains gives us only three possible choices - fight, freeze or flee.

Back in the day, say fifty million years ago, these were valid day to day options that helped keep our distant ancestors alive and kicking. If you were hungry, you killed something and ate it. If something was trying to kill and eat you, you froze or ran away. In other words, the amygdala helped you to live to fight, freeze or flee another day.

In the modern world, these options are limited by convention and circumstances. In addition, they are not always valid, ethical or legal. If you're hungry, you can't just kill the neighbor's dog or rob a convenience store to satisfy your need for food.

Instead, a better approach is to recognize that the lizard brain is there in your head, doing what it always has done, sometimes for better and sometimes for worse. Knowing when the effects of the lizard brain are for the worse is the key to controlling these effects.

Fight, Flee or Freeze: The Negative Effects of the Lizard Brain

Everywhere you look, you see the effects of evolution and natural selection. The grass and trees in your yard are there because of it. The food in your pantry and refrigerator are there because of it. Your pet dog or cat is there because of it. Most importantly, when you look in the mirror, you are seeing a product of the process of evolution as well. You are here because of it.

Evolution, as you may know, is driven by the twin engines of mutation and genetic drift. Cells replicate by making copies of themselves. Sometimes, a mistake is made in the process of copying. This is a mutation. Most times the mutation is harmful. Occasionally, the mutation is beneficial. These types of "mistakes" then get passed on to the next generation.

Genetic drift occurs naturally over time among all genetic populations, especially those separated from each other by distance. When enough time goes by, the two separate populations are sufficiently different to constitute different species.

What does this have to do with the negative effects of the lizard brain? Well, nature is nothing if not efficient. As evolution proceeds through mutation and genetic drift, things that might be slightly obsolete get coopted into new uses they weren't originally designed for. A perfect example of this is the amygdala in the human brain.

The amygdala is the source of "lizard brain" behaviors precisely because it is the genetic remnant of the brain possessed by a reptile that lived hundreds of millions of years ago. That reptile existed in a world much different than ours. It was a world full of simple needs and simple dangers. In essence, you ate something else or you were eaten yourself. The lizard that possessed this brain needed only three basic instinctual impulses in order to survive. Depending on the circumstances, it needed to fight, freeze or flee.

The lizard brain in our heads still operates in the same way today. The difference is that there isn't a lot of eat or be eaten situations in modern society, so fighting, fleeing or freezing are often inappropriate responses to modern situations. What happens instead of fighting, people exhibit rigid, kneejerk behaviors and anger. Instead of fleeing, people become unreasonably frightened. Instead of freezing people procrastinate or unintentionally sabotage themselves.

Realizing where these inappropriate responses come from, and why, is the first step to dealing with "lizard brain" behaviors. Simply because there is the remnant of a lizard brain in each of our heads, does not mean that we have to actualize these ancient, and largely obsolete, reactions.

Conquering Fear by Controlling the Lizard Brain

Unreasonable fear is a crippling and debilitating phenomenon that affects nearly everyone at one time or another. This fear can prevent the affected person from fully enjoying a particular experience. It can also inhibit that person to such an extent that they forego particular experiences or events altogether. This prevention or inhibition may eventually occur often enough to actually hold the individual back from achieving goals, potential and overall success. This type of chronic fear is unreasonable. It robs a person of the very thing they hold most dear – life itself.

The emotion of fear is, in and of itself, a very useful evolutionary tool. Quite simply, it helps to keep an organism alive long enough to guarantee procreation and, as a result, another generation of similar organisms. It's sensible and reasonable to be afraid of something that has a good potential to cut your life short. However, when fear has no grounds it makes no sense. Let's take a look at this phenomenon a little more closely.

Fear, both reasonable and unreasonable, originates at the base of the brain known as the reptilian or R-complex. This is one of the oldest parts of the human brain. We share its structure with many other species, including lizards. Hence, it's other common name – the lizard brain.

Besides producing the sensation of fear, the lizard brain also largely controls many of the basic autonomic functions of the human body. In this sense, it can be said that the job of the lizard brain is to keep the owner of the brain alive. However, the lizard brain evolved at a time when danger, as well as the stress caused by danger, was relatively straightforward. You either ate or were eaten. The lizard brain dealt with that simple situation very efficiently.

The problem is that modern stresses usually do not involve life threatening situations. The lizard brain does not understand this and when mundane stress is experienced it can misinterpret this stress as critical. This misinterpretation is the source of unreasonable, groundless fear.

The easiest way to combat this unreasonable fear is by using your rational mind to reinterpret the situation. This is done by calmly assessing the circumstances causing the fear. Once this is accomplished and you've seen that the situation is definitely not life threatening, ask yourself what the worst possible outcome could be given your assessment. This rational examination of your fear calms the lizard brain, thus reducing the severity, as well as the occurrence, of that fear.

Understanding the Triune Brain

We, as human beings, are creatures of our environment. We come from this planet. Its forces have shaped us. The differences and contrasts of the world have left their imprint upon us. Darkness and light have left their mark. So too have heat and cold. Safety and danger, along with hunger and plenty, have molded us as surely as anything else. What this world is, and what this world was, has been realized in each of us.

We are also older than we know. Our recorded history is but a blink of the eye. We are more ancient than our ability to record our thoughts. Our lineage stretches back into the distant past. Ice and fire have advanced and retreated across the land countless times since we became aware. As a result, we can measure our overall age in the hundreds of millions of years. We cannot specifically remember these events. However, this extraordinary length of time is evident in the very structure of our bodies. From a physiologic viewpoint, our heritage is like the layers of an onion. Nowhere is this more true than in the physiology of that most human of organs – our brains.

Our brains are the essence of our humanity. In a very real sense, we are our brains. How we conceptualize ourselves, our sense of “us”, comes from the neural connections within this remarkable organ. In addition, how we conceptualize the world around us, the world that gave rise to us, also arises from these same connections. Our reality, as well as our place in that reality, is a result of a complex series of sensory impressions organized into a code of behavior. This code, in turn, is what allows us to survive and, hopefully, thrive in our natural environment.

Our brains are, essentially, triune. As the name implies, the triune brain consists of three separate sections. The oldest section, the amygdala, sits at the top of the spine. It controls our most basic body functions. The amygdala is, in turn, surrounded by the limbic system. The limbic system controls higher emotional functions and is the source of what psychologists refer to as the subconscious. The limbic system is, once again, surrounded by the neocortex. The neocortex is responsible for what we would term “human” actions. Language, science and art are all arise from the neocortex. In fact, it is the neocortex that gave rise to the theory of the triune brain and it is your neocortex that allows you to read, understand and remember this theory.

Three Techniques to Deal with the Effects of the Lizard Brain

In some ways, we are victims of circumstance. In this case, it is evolutionary circumstance. The power of the tides of evolution has left us with the flotsam and jetsam of hundreds of millions of years flowing through our veins. We can't begrudge the process for two reasons. First, we have no choice or, more succinctly, had no choice in the matter. Evolution exists and we have no clue as to why. Second, without evolution we wouldn't be here asking questions about evolution. We are a product of the process.

However, there is a difference between pointlessly begrudging the effects of the process of evolution on each of us and understanding and dealing with some of these effects. We are after all rational animals and that rationality allows us to solve problems, including the negative aspects of what is known as "lizard brain".

The term lizard brain refers to a set of collective behaviors that arise out of the operation of a part of the human brain known as the amygdala. The amygdala is the oldest part of the brain, in an evolutionary sense. It controls most, if not all, of the autonomic functions in the human body. These include hunger, thirst, respiration and pulse rate. It is also the source of aggression and fear.

Now, aggression and fear can be useful, even necessary, reactions under a number of circumstances. However, the circumstances where they are useful are far outweighed by those where they are inappropriate or actively harmful. The problem is that the old amygdala can only react in the ways it was designed to act. Unfortunately, the world in which the amygdala evolved is long dead and gone. Its design is, to a certain extent, obsolete.

This fact gives rise to the negative behaviors we first discussed. The fight reflex becomes compulsive, rigid thinking which, in turn, gives rise to many of the "isms" that still plague the world. The fear reflex becomes unreasonable which, in turn, gives rise to phobias and aversions. The freeze reflex becomes injurious, prompting individuals into behaviors that self-sabotage.

Fortunately there are three techniques that are useful in battling the negative effects of lizard brain behavior. The first is recognizing where these behaviors come from and to see them in your own day to day life for what they are. The second is to plan ahead on how to deal with them when they occur. Finally, the third is to deal with the outcome of their effects. Regular application of these three steps can go a long way to ameliorating the unfortunate or, perhaps, unintended effects of evolution.

The Russian Dolls in Our Heads

In a very real sense, we are our brains. Everything we know, everything we have experienced and, to certain extent, everything our ancestors have experienced is contained in this compact, yet infinitely vast, organ. Yet, we have yet to fully understand the very thing that allows us to comprehend not only ourselves, but also the world around us. Exploring the function of our brains is a bit like heading down the rabbit hole. The more we know, the less sure we can be of "reality". For, if reality is a function of our brains, as opposed to an empiric set of values, then what is actually real?

For centuries, philosophers and scientists have debated this question. The debate itself is an interesting one, since it points up the dilemma that arises when discussing the function of an organ which, by its very nature, allows the debate to exist in the first place. In other words, how can anyone understand the means of their understanding? The scope of the entire mind/body duality debate is beyond the scope of the article. However, it does offer a glimpse, albeit a confusing glimpse, of how the various evolutionary components of the human brain operate simultaneously, as well as independently of each other.

The brain, or mind if you prefer, works through compartmentalization. It can be thought of as a set of matryoshka dolls. Each compartment, or functional area, of the brain nestles inside the next. Each one is separate, but is also a portion of the entire set. It is only by unpacking each area from the others, that an understanding of the whole system can be achieved.

The first doll that we will unpack is also the newest. This is the area of the brain called the neocortex. The neocortex is the area of the brain that allows you to read and understand this article. It is also the area of the brain that is responsible for all the artifacts of human civilization.

The next doll is known as the limbic system. More primitive, as well as older, than the neocortex, the limbic system is where experience is processed and remembered. It's why you don't stick your hand in a fire. It's also the source of many emotional responses to outside stimuli.

The last doll is the oldest. The amygdala, also known as the reptilian complex, is deep within the structure of the brain. It controls the most basic needs and functions. Hunger, thirst, sex drive and sleep all reside here, as do pulse and respiration.

The Amygdala or the Reptilian Complex

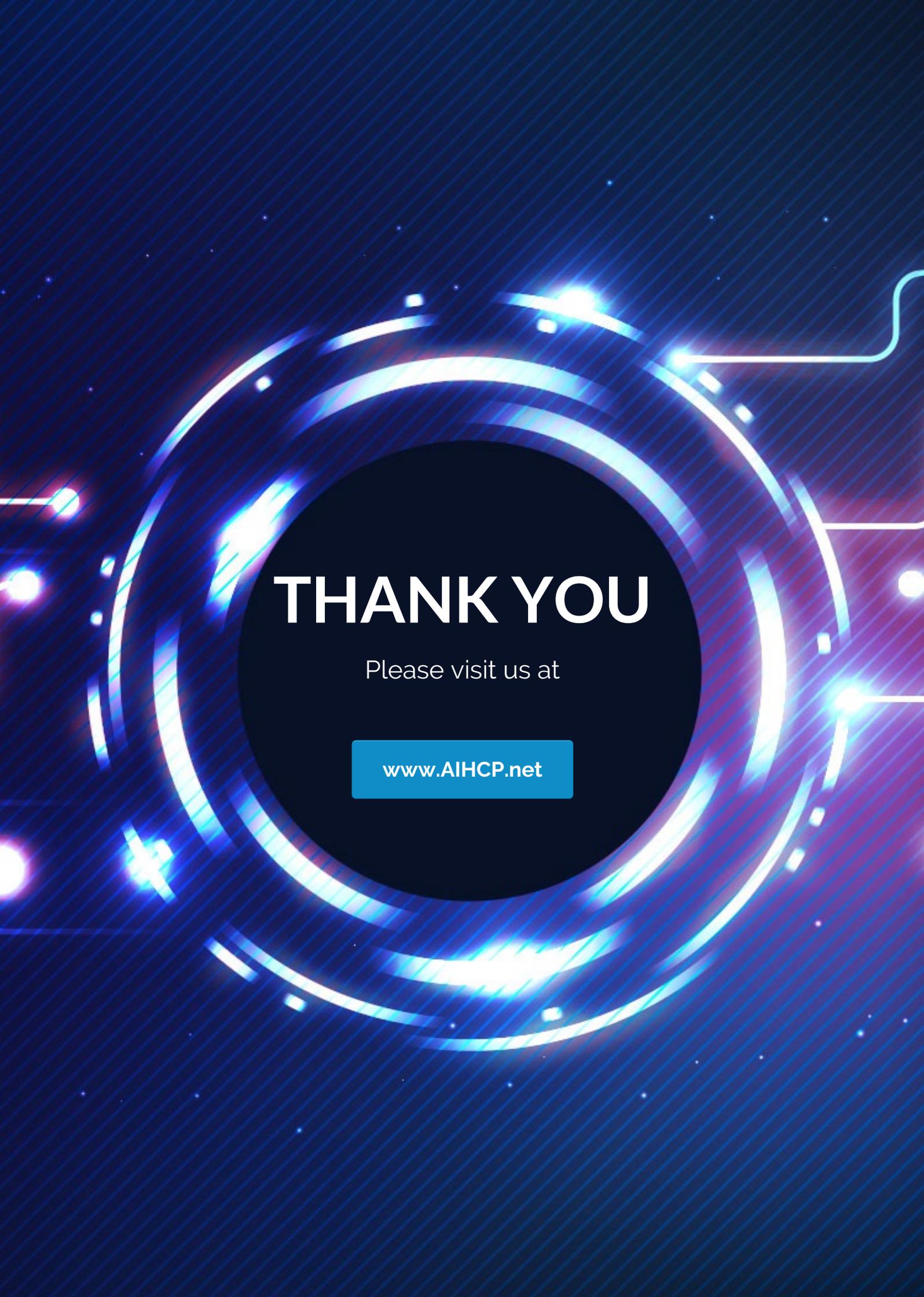
Deep inside our heads, the past still exists. Perhaps a better way of putting it would be to say that deep inside our heads, our primitive motivations still exist. You see we are the products of evolution. Who we are is the result of a process that has been ongoing for billions of years. The process is still continuing as we speak. We are by no means an end result or final product. However, we are the only entities on this planet capable of profoundly altering their environment and their potential destinies.

This capability is by no means neutral. We have the ability to act in our own best interests. We are also equally capable of acting against our interests. This ability has been called the power of good and evil. It has also been called self-interest and self-sacrifice. However, no matter how it is named, we all have light and darkness inside of us. This is also largely the result of evolution and the way our brains have developed as a result. Whether, it is an unintended effect, a non-beneficial mutation if you will, remains to be seen.

Nature abhors waste. So, as we evolved, so did our brains. At the base of the brain, sitting on top of the spinal cord, is the amygdala. This part of the brain is ancient and it controls many of the functions we share with many other life forms. Pulse, respiration, hunger and sexuality all originate within the amygdala. So do anger, fear and anxiety. A good way to describe the amygdala is to say that it controls primal instincts.

Around the amygdala are the other two portions of our evolutionary brains, the limbic system and the neocortex. The limbic system controls emotion and memory. The neocortex controls higher thought and what we call reason. Our capability for good and evil arises out of the way these three systems work together. The amygdala is compulsive and instinctual. It is primarily concerned with basic needs and desires and getting those needs and desires fulfilled. If you're hungry, you eat. If you're frightened, you fight or flee. You don't worry too much about side effects, collateral damage or fallout from meeting these needs.

These self-centered actions and motivations worked extremely well in the primitive world where they developed. However, many of the actions prompted from the amygdala often conflict with the higher principles that emanate from the neocortex.



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