

BluesNews

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Make the Ordinary Come Alive

Do not ask your children
 To strive for extraordinary lives.
 Such striving may seem admirable,
 But it is a way of foolishness.
 Help them instead to find the wonder
 and the marvel of an ordinary life.
 Show them the joy of tasting
 Tomatoes, apples and pears.
 Show them how to cry
 When pets and people die.
 Show them the intimate pleasure
 In the touch of a hand,
 And make the ordinary come alive for them.
 The extraordinary will take care of itself.

RANDOM THOUGHTS and REFLECTIONS

This BluesNews is about memory. Eventually, we want to be able to talk about the impact that trauma has on memory and recall. This edition helps to set the stage for that discussion in the future. This is a brief overview of what psychologists mean when they talk about memory and it is focused upon what memory is. There are three more information pieces in upcoming editions of BluesNews to complete our understanding of “what is memory.”

I have been thinking about what is making it so difficult to recruit new families to foster care. Undoubtedly, there are many more reasons than I might ever identify, so I try to think only about those factors where it might be possible to do something. The coldness of our social relationships, the increasing ‘tribalism’, the ‘not my problem’ are not issues or factors that I can impact.

When I first started in foster care, there were some big names and even bigger personalities that dominated our field, in hotspots throughout North America: Casey

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Foundation in the northeast, Pressley Ridge in the heartland, Boystown in the midwest, People Place's on the east coast, PATH and Family Alternatives in Minnesota and the northern midwest. Does anybody else remember Asheville, NC? 1985?

I think I need charisma. Or to be some quiet Yoda-type figure speaking words of wisdom with empathy and compassion through the voice of James Earl Jones and possessing the moral presence of Morgan Freeman. When I first began in this field, foster care was littered with these gurus. They attracted foster parents. Foster families were die-hard loyal, would follow these gurus anywhere. They believed these gurus had all the answers to raising difficult and challenging youth.

But I am none of those things: not a Morgan Freeman or a JEJ bone in my entire body. I am not particularly soft-spoken. No one would call me warm and fuzzy. I have no righteous path to follow. And I know, after three decades, I don't have any answers. I am a solution-focused technocrat. This is NOT the blind leading the stupid, but rather the drunken man on horseback, riding about in circles in the rain... I need families. I need foster families! I need charisma...

The Adverse Childhood Events study,

“Over the past decade, Dr. Nadine Burke Harris, the founder of the [Center for Youth Wellness](#), in Bayview Hunters Point, San Francisco, has emerged as one of the country's strongest voices calling for a national public health campaign to raise awareness and a sense of urgency about the devastating and potentially lifelong health effects of childhood trauma.

Since the original research on [adverse childhood experiences](#), known as the ACE Study, was published in 1998, a [growing body of evidence](#) has indicated that severe or prolonged levels of childhood adversity (often measured in terms of an “ACE score” ranging from 0 to 10) are far more common and harmful than has been appreciated. Dr. Burke Harris, a pediatrician, has led in developing methods to screen and treat children and families suffering health problems attributable to what is known as [toxic stress](#).

Last week, Dr. Burke Harris's book, [“The Deepest Well: Healing the Long-Term Effects of Childhood Adversity.”](#) was published. It offers a powerful — even indispensable — frame to both understand and respond more effectively to our most serious social ills. Recently, I spoke with her about it:

David Bornstein: What's the most important takeaway from “The Deepest Well”?

Nadine Burke Harris: Childhood adversity literally gets under our skin and has the potential to change our health. The corollary is that it's something we can do something about.

N.B.H.: We're not talking about failing a test or losing at a sports match. We're talking about threats that are severe or prolonged — things like abuse or neglect, or growing up with a parent who is mentally ill or substance-dependent. Our biological stress response is designed to save our lives from something threatening, and that's healthy. The problem is that when the stress response is activated repeatedly it can become overactive and affect our brain development, our immune systems and even how our DNA is read and transcribed. High doses of stress hormones can inhibit the brain's executive functioning and make it harder for kids or adults to exercise impulse control.

We see on M.R.I.s a shrinking of the hippocampus [a brain area important for memory and emotional regulation] and increased size of the amygdala, which is the brain's fear center. This can make you hypervigilant — overly sensitive to threats or challenges. For individuals who are exposed to high doses of adversity in childhood, the pleasure and reward center of the brain — the ventral tegmental area, the part that is stimulated by cocaine, heroin, methamphetamine, tobacco, sex, high-sugar and high-fat foods — can be affected, so folks actually get less pleasure from these things. So they need higher doses, which leads to increases in risky behavior and substance dependence.

D.B.: Does toxic stress cause harm primarily because it makes people more likely to engage in unhealthy behaviors?

This is an excerpt from, “Treating the Lifelong Harm of Childhood Trauma” by David Bornstein, printed in The New York Times newspaper on January 30, 2018

N.B.H.: High-risk behaviors only account for about 50 percent of the increased health risk. So even if you don't drink, you don't smoke, you don't do all that stuff, you're still at increased risk for things like heart disease and chronic obstructive pulmonary disease. There are two reasons. One is the impact of early adversity on the immune system. What we see is increased chronic inflammation and risk for autoimmune diseases like lupus or rheumatoid arthritis or asthma. A child with four or more ACEs has double the risk for asthma as one with no ACEs. The other one is the impact on our epigenetic regulation: the way our DNA is read and transcribed. Telomeres are these bumpers on the ends of our DNA and they protect our DNA from wear and tear. A lot of things accelerate the rate at which our telomeres get shortened, which leads to premature cellular aging. It can be pollutants or smoking tobacco. But one important thing is exposure to high doses of adversity in childhood.

D.B.: What's the scope of this problem?

N.B.H.: Two-thirds of Americans have been exposed to one significant adverse childhood experience, and between 13 and 17 percent have been exposed to four or more. We know that being exposed to high doses of childhood adversity dramatically increases the risk for seven of the 10 leading causes of death in the United States.

D.B.: How did you come to understand it?

N.B.H.: I had so many children being referred to me for evaluation of A.D.H.D., sent in by teachers or principals or counselors. "This child is having terrible behavior problems. Lots of difficulties with impulse control. Can you put him on Ritalin?" But when I did a thorough history and physical exam, for most of my patients I could not make the diagnosis of A.D.H.D. The diagnostic criteria for attention-deficit disorder says it can't be caused by anything else. For my kids there was an extremely strong thread: So many were being exposed to very high doses of adversity. At the same time, I was seeing patients like a girl who I was treating for asthma. When I asked, "What are your asthma triggers?" her mom said, "I noticed that my daughter's asthma acts up every time her dad punches a hole in the wall." And then I got to the patient that I talk about in the book, Diego, a 7-year-old boy who seemed to have stopped growing after a sexual assault at age 4. For me, that was the case that made me stop in my tracks and say there is something else going on here and I need to get to the bottom of it.

D.B.: Can you say more about Diego?

N.B.H.: Diego had growth failure, but he also had asthma, eczema and behavior problems. The frame shift for me was instead of doing the standard treatment for each of his four diagnoses, I asked, "Is it possible that the trauma that he's been exposed to could be the underlying cause of all these problems?" When I consulted hormone specialists, I was told that's likely the case. O.K., well, then, the thing we need to treat is the trauma.

That's when I began diving into the research literature. In 2008, I came across the ACE Study, which had been published in 1998. I was absolutely shocked that I had never heard about it and that as a doctor I was never trained on it. And so for me that began a mission to translate the science into something useful for patients.

D.B.: What needs to happen?

N.B.H.: No. 1, universal screening. The best tools we have right now are early detection and prevention. Studies show that when kids received early high quality intervention, their brain scans ended up looking more like those of children who had never been maltreated than children who had been maltreated. Ultimately, every pediatrician in America needs to be screening for ACEs."

??? Did You Know???

Using the Harm Standard incidence numbers from NIS-3, the total annual cost of child abuse and neglect has been estimated at **94 billion dollars** (Fromm, 2001). Direct costs associated with child abuse and neglect (24.4 billion dollars) included hospitalization, chronic health problems, mental health, child welfare, law enforcement, and judicial system costs. Indirect costs (69.7 billion dollars) included special education, juvenile delinquency, adult mental health and health care, lost productivity to society, and adult criminality. **The daily cost of childhood abuse and neglect is estimated to be \$258 million** (Pelletier, 2001)

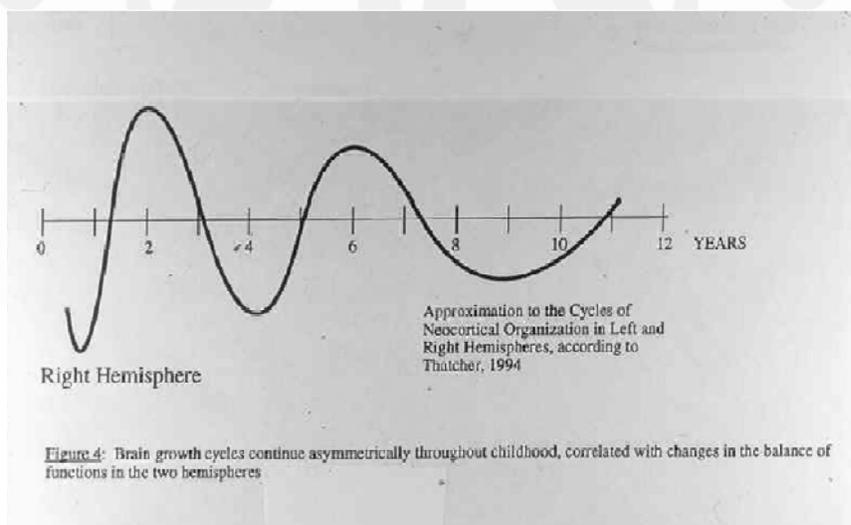
For me, the upshot of the Adverse Childhood Events study is multi-fold with some significant highlights. First, adverse childhood events are ubiquitous with a huge but poorly understood, and poorly researched, impact on physical and psychological health. Asthma, eczema, attention deficit disorder, smoking, heart disease, incarceration rates, obesity, domestic violence, unwanted teen pregnancies, anxiety disorders, substance abuse, OCD, and countless others (seven of the 10 leading causes of death in North America)

have a positive correlation with adverse childhood events. When Bessel van der Kolk writes that “the body keeps the score” or that “trauma is held in the body”, this is part of the evidence that supports his contention. That is the second major idea highlighted by the ACE study: trauma and trauma related behaviors have physical correlates in our bodies and continue to have a dramatic impact even when the traumatic event has stopped or receded in time. The third major point of impact (for me) sounds really trite, but isn't: these are childhood events occurring prior to maturation.

Add to these thoughts, Dr Bruce Perry's work and thoughts on the impact of fear on the way we think. Very simply, Perry contends that as we escalate from being calm to experiencing terror, our cognition moves the abstract toward the reflexive, from utilizing the neocortex for thinking to being driven by the instinctual responses of the brainstem. In short, increasing fear diminishes our ability to use our problem solving skills to respond to our fears. Accompanying this escalation of fear, Perry asserts is a significant shift in our sense of time. Calm and at rest, our sense of time includes an extended future: we act today in anticipation of, or to prepare for, something that will (may) happen tomorrow; terrorize me and my sense of time becomes almost non-existent. (If I am fleeing the scene, I am most likely to take the first route I encounter with absolutely no evaluation of the efficacy of any other; in a major motor vehicle accident, I swear, everything happens at once.)

Dr Perry adds another interesting thread, “neurons that fire together, wire together.” This is a really simple idea with hugely complicated implications. For example, in an old house, the creaking sound of a stair riser as an abuser comes to your room will result in a network of neurons being activated. Those activated neurons become wired together; the same stimulus uses the same neurons. “One experience causes certain neurons to fire, and those neurons can get wired to neurons from another experience. Then each time we undergo the first experience, our brain connects it with the second one.” (Siegel and Bryson, 2011)

Dr Dan Siegel's work complements this evolving picture. Siegel's work is grounded in neuroscience and while significantly speculative, it meets the requirements of Occam's razor. Siegel tells the story of development by connecting well researched facts with a narrative that relies upon a minimum of presuppositions and assumptions. In this regard, while examining early development, Siegel ignores what was known as primary process thinking in favor of right brain / left brain hemispheric utilization patterns. When I think about my old school Ericksonian child development model, there seems an excellent fit with the right / left hemispheric utilization model offered by Siegel and Bryson. (I apologize the image below is of low quality). We can dispense with the notion of primary process in favor of left hemisphere modality characterized logic, literalness, language, and linearity and right hemisphere modality that is holistic, nonverbal, emotional, experiential and autobiographical.



Look at this chart above. Below the line is right hemispheric predominance; above the line is left hemispheric predominance. The line represents the child's age. Clearly, the first months of life are predominantly within the right hemispheric modality (non-verbal, experiential, emotional) but not entirely so. Despite the fact that the newborn is non-verbal, language acquisition is beginning with the shaping of sighs and grunts into recognizable communication. Typically, children's first words are in their second year of life (12–15 months) and once started, language skills build quickly. You can follow the whole line in that fashion: language-based, logical, linear tasks above the line; emotional, experiential, inter-related tasks below the line (1–3 years, language acquisition; 5-7 years, the rules of school; 11+ years, junior high school and beyond—preponderance of left hemispheric tasks).

I am going to stop right here. Let me recap my main points: (1) adverse childhood events are ubiquitous with a huge but poorly understood, and poorly researched, impact on physical and psychological health; (2) trauma and trauma related behaviors have physical correlates in our bodies and continue to have a dramatic impact even when the traumatic event has stopped or receded in time; (3) ACE events occur prior to maturation; (4) fear changes the way we think; (5) neurons that fire together, wire together; and (6) the right and left hemispheres of the brain utilize complementary modalities.

THE HUMAN MEMORY

from

human-memory.net

INTRODUCTION

Since time immemorial, humans have tried to understand what memory is, how it works and why it goes wrong. It is an important part of what makes us truly human, and yet it is one of the most elusive and misunderstood of human attributes.

The popular image of memory is as a kind of tiny filing cabinet full of individual memory folders in which information is stored away, or perhaps as a neural super-computer of huge capacity and speed. However, in the light of modern biological and psychological knowledge, these metaphors may not be entirely useful and, today, experts believe that memory is in fact far more complex and subtle than that

It seems that our memory is located not in one particular place in the brain, but is instead a brain-wide process in which several different areas of the brain act in conjunction with one another (sometimes referred to as distributed processing). For example, the simple act of riding a bike is actively and seamlessly reconstructed by the brain from many different areas: the memory of how to operate the bike comes from one area, the memory of how to get from here to the end of the block comes from another, the memory of biking safety rules from another, and that nervous feeling when a car veers dangerously close comes from still another. Each element of a memory (sights, sounds, words, emotions) is encoded in the same part of the brain that originally created that fragment (visual cortex, motor cortex, language area, etc), and recall of a memory



effectively reactivates the neural patterns generated during the original encoding. Thus, a better image might be that of a complex web, in which the threads symbolize the various elements of a memory, that join at nodes or intersection points to form a whole rounded memory of a person, object or event. This kind of distributed memory ensures that even if part of the brain is damaged, some parts of an experience may still remain. Neurologists are only beginning to understand how the parts are reassembled into a coherent whole.

Neither is memory a single unitary process but there are different types of memory. Our short term and long-term memories are encoded and stored in different ways and in different parts of the brain, for reasons that we are only beginning to guess at. Years of case studies of patients suffering from accidents and brain-related diseases and other disorders have begun to indicate some of the complexities of the memory processes, and great strides have been made in neuroscience and cognitive psychology, but many of the exact mechanisms involved remain elusive.

??? Did You Know???

For a time during the 1960s, it was hypothesized that all the cells of the human body were capable of storing memories, not only those in the brain, an idea known as cell memory or cellular memory. This was based on memory transfer research using cannibal flatworms, and on anecdotal evidence of organ transplants where the recipient was reported to have developed new habits or memories, but such theories are now considered pseudoscientific and have not made it into peer-reviewed science journals.

WHAT IS MEMORY?

Memory is our ability to encode, store, retain and subsequently recall information and past experiences in the human brain. It can be thought of in general terms as the use of past experience to affect or influence current behaviour.

Memory is the sum total of what we remember, and gives us the capability to learn and adapt from previous experiences as well as to build relationships. It is the ability to remember past experiences, and the power or process of recalling to mind previously learned facts, experiences, impressions, skills and habits. It is the store of things learned and retained from our activity or experience, as evidenced by modification of structure or behaviour, or by recall and recognition.

Etymologically, the modern English word "memory" comes to us from the Middle English *memorie*, which in turn comes from the Anglo-French *memoire* or *memorie*, and ultimately from the Latin *memoria* and *memor*, meaning "mindful" or "remembering".

In more physiological or neurological terms, memory is, at its simplest, a set of encoded neural connections in the brain. It is the re-creation or reconstruction of past experiences by the synchronous firing of neurons that were involved in the original experience. As we will see, though, because of the way in which memory is encoded, it is perhaps better thought of as a kind of collage or jigsaw puzzle, rather than in the traditional manner as a collection of recordings or pictures or video clips, stored as discrete wholes. Our memories are not stored in our brains like books on library shelves, but are actually on-the-fly reconstructions from elements scattered throughout various areas of our brains.

??? Did You Know???

Recent studies suggest that repeated bouts of jet lag may cause harm to the temporal lobe, an area of the brain important to memory, causing it to shrink in size, and compromising performance on spatial memory tests. It is thought that stress hormones, such as cortisol, released by the body during times of stress (such as the sleep disturbance, general stress and fatigue caused by long flights) are responsible for this impairment of memory and other mental skills.

Memory is related to but distinct from learning, which is the process by which we acquire knowledge of the world and modify our subsequent behaviour. During learning, neurons that fire together to produce a particular experience are altered so that they have a tendency to fire together again. For example, we learn a new language by studying it, but we then speak it by using our memory to retrieve the words that we have learned. Thus, memory depends on learning because it lets us store and retrieve learned information. But learning also depends to some extent on memory, in that the knowledge stored in our memory provides the framework to which new

??? Did You Know???

Proponents of the “tabula rasa” (blank slate) thesis favour the nurture side of the nature versus nurture debate, when it comes to aspects of personality, intelligence and social and emotional behaviour.

The idea first surfaced in a treatise of Aristotle, but then lay dormant for over a thousand years until developed by the 11th Century Persian philosopher Avicenna, and then John Locke’s classic statement of the theory in the 17th Century.

Sigmund Freud revived the idea in the 20th Century, depicting personality traits as being formed by family dynamics.

knowledge is linked by association and inference. This ability of humans to call on past memories in order to imagine the future and to plan future courses of action is a hugely advantageous attribute in our survival and development as a species.

Since the development of the computer in the 1940s, memory is also used to describe the capacity of a computer to store information subject to recall, as well as the physical components of the computer in which such information is stored. Although there are indeed some parallels between the memory of a computer and the memory of a human being, there are also some fundamental and crucial differences, principally that the human brain is organized as a distributed network in which each brain cell makes thousands of connections, rather than as an addressable collection of discrete files.

The sociological concept of collective memory plays an essential role in the establishment of human societies. Every social group perpetuates itself through the knowledge that it transmits down the generations, either through oral tradition or through writing. The invention of writing made it

possible for the first time for human beings to preserve precise records of their knowledge outside of their brains. Writing, audiovisual media and computer records can be considered a kind of external memory for humans.

THE STUDY OF HUMAN MEMORY

The study of human memory stretches back at least 2,000 years to Aristotle’s early attempts to understand memory in his treatise “On the Soul”. In this, he compared the human mind to a blank slate and theorized that all humans are born free of any knowledge and are merely the sum of their experiences. Aristotle compared memory to making impressions in wax, sometimes referred to as the “storehouse metaphor”, a theory of memory which held sway for many centuries.

In antiquity, it was generally assumed that there were two sorts of memory: the “natural memory” (the in-born one that everyone uses every day) and the “artificial memory” (trained through learning and practice of a variety of mnemonic techniques, resulting in feats of memory that are quite extraordinary or impossible to carry out using the natural memory alone). Roman rhetoricians such as Cicero and Quintilian expanded on

the art of memory or the method of loci (a method often first attributed to Simonides of Creos or the Pythagoreans), and their ideas were passed down to the medieval Scholastics and later scholars of the Renaissance like Matteo Ricci and Giordano Bruno.

The 18th Century English philosopher David Hartley was the first to hypothesize that memories were encoded through hidden motions in the nervous system, although his physical theory for the process was rudimentary at best. William James in America and Wilhelm Wundt in Germany, both considered among the founding fathers of modern psychology, both carried out some early basic research into how the human memory functions in the 1870s and 1880s (James hypothesized the idea of neural plasticity many years before it was demonstrated). In 1881, Théodule-Armand Ribot proposed what became known as Ribot’s Law, which states that amnesia has a time-gradient in that recent memories are more likely to be lost than the

??? Did You Know???

Flashbacks are involuntary (and often recurring) memories, in which an individual has a sudden powerful re-experiencing of a past memory, sometimes so intense that the person “relives” the experience, unable to fully recognize it as a memory and not something that is really happening.

Such involuntary memories are often of traumatic events or highly-charged emotional happenings, and often occur at times of high stress or food deprivation, although the exact causes and mechanisms are not clear.

more remote memories (although in practice this is actually not always the case).

However, it was not until the mid-1880s that the young German philosopher Herman Ebbinghaus developed the first scientific approach to studying memory. He did experiments using lists of nonsense syllables, and then associating them with meaningful words, and some of his findings from this work (such as the concepts of the learning curve and forgetting curve, and his classification of the three distinct types of memory: sensory, short-term and long-term) remain relevant to this day.

The German evolutionary biologist Richard Semon first proposed in 1904 the idea that experience leaves a physical trace, which he called an engram, on specific webs of neurons in the brain. The British psychologist Sir Frederick Bartlett is considered one of the founding fathers of cognitive psychology, and his research in the 1930s into the recall of stories greatly influenced later ideas on how the brain stores memories.

Such involuntary memories are often of traumatic events or highly-charged emotional happenings, and often occur at times of high stress or food deprivation, although the exact causes and mechanisms are not clear.

With advances in technology in the 1940s, the field of neuropsychology emerged and with it a biological basis for theories of encoding. Karl Lashley devoted 25 years of his life to research on rats in mazes, in a systematic attempt to pinpoint where memory traces or engrams are formed in the brain, only to conclude in 1950 that memories are not localized to one part of the brain at all, but are widely distributed throughout the cortex, and that, if certain parts of the brain are damaged, other parts of the brain may take on the role of the damaged portion.

The Canadian neurosurgeon Wilder Penfield's work on the stimulation of the brain with electrical probes in the 1940s and 1950s, initially in search of the causes of epilepsy, allowed him to create maps of the sensory and motor cortices of the brain that are still used today, practically unaltered. He was also able to summon up memories or flashbacks (some of which the patients had no conscious recollection of) by probing parts of the temporal lobe of the brain.

As early as 1949, another Canadian, Donald Hebb, intuited that "neurons that fire together, wire together", implying that the encoding of memories occurred as connections between neurons were established through repeated use. This theoretical idea, sometimes referred to as Hebb's Rule, was supported by the discovery of the mechanics of memory consolidation, long-term potentiation and neural plasticity in the 1970s, and remains the reigning theory today. Eric Kandel's work on sea-slugs (whose brains are relatively simple and contain relatively large, and easily-observed, individual neural cells) was particularly important in experimentally demonstrating Hebb's Rule and identifying the molecular changes during learning, and the neurotransmitters involved.

As computer technology developed in the 1950s and 1960s, parallels between computer and brain processes became apparent, leading to advances in the understanding of the encoding, storage and retrieval processes of memory. The computer metaphor is, however, essentially just a more sophisticated version of the earlier storehouse view of memory, based on the rather simplistic and misleading assumption that a memory is just a simple copy of the original experience.

The brain typically detects negative information faster than positive information, and the hippocampus specifically flags negative events to make doubly sure that such events are stored in memory.

Negative experiences leave an indelible trace in the memory, even when efforts are made to "unlearn" them.

??? Did You Know???

The brain in general, and memory in particular, has a distinct negativity bias. It pays more attention to, and highlights, unpleasant experiences. The brain typically detects negative information faster than positive information, and the hippocampus specifically flags negative events to make doubly sure that such events are stored in memory. Negative experiences leave an indelible trace in the memory, even when efforts are made to "unlearn" them. This is probably an evolutionary adaptation, given that it is better to err on the side of caution and ignore a few pleasant experiences than to overlook a negative, and possibly dangerous, event.

This is probably an evolutionary adaptation, given that it is better to err on the side of caution and ignore a few pleasant experiences than to overlook a negative, and possibly dangerous, event.

The change in the overall study of memory during the 1950s and 1960s has come to be known as the “cognitive revolution”, and led to several new theories on how to view memory, and yielded influential books by George Miller, Eugene Galanter, Karl Pribram, George Sperling and Ulric Neisser. In 1956, George Miller produced his influential paper on short-term memory and his assessment that our short-term memory is limited to what he called “the magical number seven, plus or minus two”.

In 1968, Richard Atkinson and Richard Shiffrin first described their modal, or multi-store, model of memory - consisting of a sensory memory, a short-term memory and a long-term memory - which became the most popular model for studying memory for many years. Fergus Craik and Robert Lockhart offered an alternative model, known as the levels-of-processing model, in 1972. In 1974, Alan Baddeley and Graham Hitch proposed their model of working memory, which consists of the central executive, visuo-spatial sketchpad and phonological loop as a method of encoding.

The 1970s also saw the early work of Elizabeth Loftus, who carried out her influential research on the misinformation effect, memory biases and the nature of false memories. The pioneering research on human memory by Endel Tulving from the 1970s onwards has likewise been highly influential. He was the first to propose two distinct kinds of long-term memory, episodic and semantic, in 1972 and he also devised the encoding specificity principle in 1983.

During the 1980s and 1990s, several formal models of memory were developed that can be run as computer simulations, including the Search of Associative Memory (SAM) model proposed by Jerome Raaijmaker and Richard Shiffrin in 1981, the Parallel Distributed Processing (PDP) model of James McClelland, David Rumelhart and Geoffrey Hinton's in 1986, and various versions of the Adaptive Control of Thought (ACT) model developed by John Anderson in 1993.

Nowadays, the study of human memory is considered part of the disciplines of cognitive psychology and neuroscience, and the interdisciplinary link between the two which is known as cognitive neuroscience.

This website, written by a layman for the layman, attempts to piece together some of what we DO know about the enigma that is...The Human Memory. www.human-memory.net © 2010 Luke Mastin

VIDEO GAMES

Donald Trump has long claimed that exposure to simulated violence in video games begets violent tendencies in real life. “Video game violence and glorification must be stopped — it is creating monsters!” he tweeted in 2012.

In the wake of the school shooting in Parkland, Fla., as the nation debated gun control, Mr. Trump returned to that theme. “We have to look at the internet because a lot of bad things are happening to young kids and young minds, and their minds are being formed,” he said. He went on to implicate video games in particular: “I’m hearing more and more people say the level of violence on video games is really shaping young people’s thoughts.”

On Thursday, President Trump summoned video game executives to the White House to castigate them for the violence depicted in their products. The executives were joined by Republican members of Congress and by activists who have campaigned against violence in media.

The White House meeting did not, however, include any social scientists who have studied the effects of vid-

eo games. That would have been too problematic. **Decades of research, after all, have failed to find any significant relationship between playing violent video games and behaving violently in real life.**

If anything, there may be a stronger connection between school violence and the sort of creative writing educators seek to foster. When the United States Secret Service and the Department of Education studied violence in schools, they found that 37 percent of attackers “exhibited an interest in violence in their own writings, such as poems, essays, or journal entries,” while only 12 percent exhibited an interest in violent video games.

Video games do not create murderers. With his Thursday meeting, the president was merely engaging in political distraction.

HUMOR

An airplane was about to crash. There were 4 passengers on board, but only 3 parachutes.

The 1st passenger said, " I am Steph Curry, the best NBA basketball player. The Warriors and my millions of fans need me, and I can't afford to die." So, he took the 1st pack and left the plane.

The 2nd passenger, Donald Trump, said, " I am the newly elected U.S. President, and I am the smartest President in American history, so my people don't want me to die." He took the 2nd pack and jumped out of the plane.

The 3rd passenger, the Pope, said to the 4th passenger, a 10-year-old schoolboy, "My son, I am an old man and I don't have many years left, you have more years ahead of you so I will sacrifice my life and let you have the last parachute."

The little boy said, "That's okay, Your Holiness, there is a parachute left for you. America's smartest President took my school bag."

* * * * *

A customer asked, "In what aisle could I find the Newfie sausage?"

The shop assistant asks, "Are you from Newfoundland?"

The guy, clearly offended, says, "Yes I am. But let me ask you something, if I asked for Italian sausage would you ask me if I was Italian?"

Or if I had asked for German Bratwurst, would you ask me if I was German?"

Or if I asked for a kosher hot dog would you ask me if I was Jewish?"

Or if I had asked for a Taco, would you ask if I was Mexican?"

Or if I asked for Polish sausage, would you ask if I was Polish?"

The shop assistant says, "No, I probably wouldn't."

The guy says, "Well then because I asked for Newfie sausage, why the hell did you ask me if I'm from Newfoundland?"

The clerk replied, "Because you're in Home Depot."

* * * * *

Suppose Health Services expanded their domain and got to regulate the wine business. Here's a possible outcome of that control:

Do you have feelings of inadequacy?

Do you suffer from shyness?

Do you sometimes wish you were more assertive?

Do you sometimes feel stressed?

If you answered yes to any of these questions, ask your doctor or pharmacist about Cabernet Sauvignon**.

Cabernet Sauvignon is the safe, natural way to feel better and more confident. It can help ease you out of your shyness and let you tell the world that you're ready and willing to do just about anything. You will notice the benefits of Cabernet Sauvignon almost immediately and, with a regimen of regular doses, you'll overcome obstacles that prevent you from living the life you want. Shyness and awkwardness will be a thing of the past.. You will discover talents you never knew you had.

Cabernet Sauvignon may not be right for everyone. Women who are pregnant or nursing should not use it, but women who wouldn't mind nursing or becoming pregnant are encouraged to try it.

Side effects may include:

Dizziness, nausea, vomiting, incarceration, loss of motor control, loss of clothing, loss of money, delusions of grandeur, table dancing, headache, dehydration, dry mouth, and a desire to sing Karaoke and play all-night Strip Poker, Truth Or Dare, and Naked Twister.

Warnings:

The consumption of Cabernet Sauvignon may make you think you are whispering when you are not.

The consumption of Cabernet Sauvignon may cause you to tell your friends over and over again that you love them.

The consumption of Cabernet Sauvignon may cause you to think you can sing.

The consumption of Cabernet Sauvignon may create the illusion that you are tougher, smarter, faster and better looking than most people.

* * * * *

There was this loving grandfather who always made a special effort to spend time with his son's family on weekends. Every Saturday morning he would take his 5-year-old granddaughter out for a drive in the car for some quality time -- pancakes, ice cream, candy -- just him and his granddaughter.

One particular Saturday, however, he had a terrible cold and could not get out of bed. He knew his granddaughter always looked forward to their drives and would be very disappointed.

Luckily, his wife came to the rescue and said that she would take their granddaughter for her weekly drive and breakfast. When they returned, the little girl eagerly ran upstairs to see her grandfather who was still in bed.

"Well, did you enjoy your ride with grandma?" he asked.

"Not really, PaPa, it was boring. We didn't see a single asshole, queer, piece of shit, horse's ass, tree hugger, socialist left wing prick, blind bastard, dipshit, Muslim camel humper or son of a bitch anywhere we went!

We just drove around and Grandma smiled at everyone she saw. I really didn't have any fun."

Almost brings a tear to your eye, doesn't it?

HOW OFTEN YOU HOLD YOUR BABY ACTUALLY AFFECTS THEIR DNA

BY SCOTT BERSON

A loving mother's caress is more than simple comfort to an infant. Scientists have known for decades that touch is critically important for a child's healthy development, according to an article in the journal *Pediatric Child Health*.

But now a new study shows that the amount a baby is touched can leave lasting, measurable effects — not just on behavior or growth, but all the way down to the molecular level of the DNA. Those changes, the scientists speculate, could have negative effects on the way the child grows and develops.

For the study, scientists at the University of British Columbia and BC Children's Hospital Research Institute followed about 100 infants over four years. They asked parents of five-week-old babies to keep a journal of their child's behavior — things like crying, sleeping, and feeding. They also asked parents to keep track of how long and how often they gave care to their child that involved physical contact, according to a press release.

When the children were about four and a half years old, the scientists swabbed the inside of their cheeks to take a DNA sample, and then checked to see if there were any differences between children who were touched often as infants and those who were touched less often.

The researchers looked at a process called DNA methylation, the scientists explained in the release. In a body cell, there are structures called chromosomes that contain the genetic code of a person. They determine things like sex, physical appearance, and how the body operates and grows.

In DNA methylation, some parts of the chromosome are "tagged" with molecules that can control how active that portion is, the scientists explained in the release. Scientists can generally predict how this should go as we age.

When they compared the methylation between the children, they found that there were consistent differences between the low-physical-contact and high-physical-contact children. In effect, the cells of the low-contact children were less mature than they should have been given the child's actual age.

That could result in the child experiencing delays in development and growth, said Michael Kobor, a professor in the Department of Medical Genetics, in the release.

"We plan to follow up on whether the 'biological immaturity' we saw in these children carries broad implications for their health, especially their psychological development," said lead author Sarah Moore in a press release. "If further research confirms this initial finding, it will underscore the importance of providing physical contact, especially for distressed infants."

In the release, the researchers said the findings are the first that show that touch "has deeply-rooted and potentially lifelong consequences on the epigenome — biochemical changes that affect gene expression."

But the concept of touch being vital for healthy development is far from new.

One of the most well-known studies on the subject was performed by American psychologist Harry Harlow on

rhesus monkeys in the 1950s. Harlow separated monkeys from their real mothers and had them drink milk from either a cold, wire lookalike mother or a different lookalike mother covered in soft cloth. The monkeys spent much more time with the comforting cloth mother, and when Harlow gave them no choice, the monkeys who only had the choice of the cold, wire mother had severe behavioral abnormalities - and they stayed that way even if being introduced to more nurturing environments later, according to a summary from the University of Oregon.



Other studies have found similar results in humans. One found that children who grew up in orphanages away from traditional nurturing had much higher levels of the stress hormone cortisol, and another found that touch-deprived infants have abnormal levels of hormones that regulate social behavior.

The takeaway from the science? Infants need to be held, touched and engaged with to thrive.

“(Engaging with infants) teaches babies basic lessons that they have some agency in the world, so that allows them to explore the world and feel like they can affect their environment as opposed to just being helpless to whatever happens to them,” Ann Bigelow, a professor and researcher of developmental psychology, told Scientific American. “We’re basically a social species, and we learn those things through interacting with others.”

HUMOR

A Mountie pulled a car over on the Trans Canada about 2 miles West of Winnipeg.

When the Mountie asked the driver why he was speeding, the driver answered that he was a magician and a juggler and he was on his way to Brandon to do a show that night at the Shrine Circus and didn't want to be late. The Mountie told the driver he was just fascinated by juggling, and if the driver would do a little juggling for him then he wouldn't give him a speeding ticket.

The driver told the Mountie that he had sent all of his equipment on ahead and didn't have anything to juggle. The Mountie told him that he had some flares in the trunk of his patrol car and asked if he could juggle them. The juggler stated that he could, so the Mountie got three flares, lit them and handed them to the juggler.

While the man was doing his juggling act, a car pulled in behind the patrol car. A drunk, good old boy, driving through from Alberta got out and watched the performance briefly. He then went over to the patrol car, pulled opened the rear door and then got in.

The Mountie observed him doing this and went over to the patrol car, opened the door and asked the drunk what he thought he was doing. The drunk then replied to the Mountie .. “You might as well take me to jail .. cause there's no f___in` way I can pass that test.”



Professional Development / InService

Leamington
1st and 3rd Wednesday

Parkhill
2nd and 4th Wednesday

Sept 20	Sept 27
Oct 4	Oct 11
Oct 18	Oct 25
Nov 1	Nov 8
Nov 15	Nov 22
Dec 8 (Christmas Luncheon)	Dec 13 (Christmas Luncheon)

2018

Jan 17	Jan 10
Feb 7	Jan 24
Feb 21	Feb 14
March 7	Feb 28
March 21	March 14 (March Break)
April 4	March 28
April 18	April 11
May 2	April 25
May 16	May 9
June 6	May 23
June 20	June 13

