Disclosure

of things evolutionists don't want you to know

Volume 25 Issue 6 www.ScienceAgainstEvolution.info March 2021

Our Extraordinary Brains

Even a superficial analysis gets complicated.

Last month, for Valentine's Day, we saw what a new book about Darwin's *Descent of Man* said about sexual selection. It not only exposed the conflict between sexual selection and natural selection, it led us off on a tangent about how political bias affects the theory of evolution.

This month we will look at another chapter in that book. Chapter 2, "Remarkable but not Extraordinary: The Evolution of the Human Brain," written by Suzana Herculano-Houzel, made us ponder linear control systems, basketball, neural networks, and pseudorandom sequences, because they all show our brains are more extraordinary than she thinks.

What first grabbed my attention was this paragraph:

> And if it turned out that those neuronal loops and circuits in the brain were organized in similar ways across species, then the inevitable conclusion would be that the minds that those brains can generate must not differ terribly in kind, just as Darwin hypothesized. As it turns out, vertebrate brains are much more similar to than they are different from one another in how their neuronal loops are organized into circuitry. [1]

This instantly attracted my attention because of my engineering background. I spent decades designing circuitry which implemented control loops. I recognize you probably don't have this same background, and aren't instantly interested in the topic, so I'm going to share some interesting information with you as simply as possible which I hope will help you appreciate just how complex our brains are.

The Difference

But first, let's look at what Suzana Herculano-Houzel wrote about the subject. She said there is no fundamental difference between human brains and other mammal brains.

> Curiously, the idea that the human brain must be fundamentally different from others is contrary to Darwin's reasoning and resonates instead with expectations of his contemporary Alfred Russel Wallace. But so far, no striking differences have been found that would cause radical changes of quality rather than gradual differences of degree. The list includes synaptic densities that are slightly higher in human brains than in mouse brains, a particular type of glial cell that is larger in the cortex of the former, and myriad genes that have been shown to impact how many neurons are generated in the brain during development. It is unlikely that any single difference can be pinpointed as the difference that distinguishes the human species from any other chosen as a reference. Rather, what seems to matter most is the degree to which differences accumulate and modify the result. [2]

Darwin thought that man is somehow special. That's a thought generally shared by Christians. The secular, evolutionary opinion is that humans are not fundamentally different from animals. The only difference is that our brains work better than animal brains do because they have evolved more. It is a matter of degree, not a matter of design. All brains are basically the same—but some are just smarter than others.

Darwin didn't know as much about brains as modern scientists do. He thought there was a big

[1] *A Most Interesting Problem* (p. 51). Princeton University Press. Kindle Edition.

[2] *ibid., (*p. 54)

difference between a man's brain and a cow's brain; somewhat less difference between a man's brain and an ape's brain; and less (but still noticeable) difference between a European brain and an African brain. Darwin was wrong.

> Indeed, ever since Darwin, nonhuman primates, then non-primate mammals, and more recently birds have been awarded higher cognitive status than even Darwin himself might have suspected. He did consider that similar emotions were expressed across species, and we now know that the circuits underlying anger, fear, joy, and pleasure are very much the same. But shared across humans and other mammals are also maternal care, deceit, self-recognition, planning for the future, playing, learning by imitation, using and making tools, cooperating in problem solving, having a sense of beauty, and even appreciating the taste of food touched by fire. [3]

What made our brains evolve? Evolutionists don't agree. Some think walking upright freed our hands for using and making tools which, in turn, sharpened our cognitive abilities. Others think it was cooperating for problem solving in a social environment. Still others, like Herculano-Houzel, think it was cooking and eating meat. She says,

> Once *Homo* species cooked their food, they overcame the energetic constraints that otherwise apply to larger apes, and the possibility of a larger primate brain opened up to them in a trend that continued until the largest *Homo* brains had nearly tripled in size. [4]

Of course, evolutionists can't figure out how an ape-like brain evolved into a human brain because it didn't happen.

Open and Closed Loops

The words that triggered this essay were "loops" and "circuits" in the first quoted passage.

> And if it turned out that those neuronal loops and circuits in the brain were organized in similar ways across species … [5]

As an electronic engineer, I spent decades working with loops and circuits. They were the key components of the smart weapons I helped design.

The two kinds of control systems are "open-loop" and "closed-loop." They are as different as a urinal and a toilet.

A urinal is an open-loop system. A man pulls a handle and water flows for a predetermined amount of time. There is no feedback. With a little luck, enough water flows to get the job done without wasting too much.

A toilet tank is a closed-loop system. When the lever is pushed, the tank empties. The flapper valve closes and the refill valve opens. As the tank fills, a float measures the water level. When the proper level is reached, the refill valve closes. Luck has nothing to do with it.

In a closed-loop system, a command goes out and a response is fed back to the controller. An open-loop system isn't really a loop at all. Information flows in one direction out from the controller, and nothing comes back to tell the controller if the desired effect has been achieved or not.

Consider the cruise control on a car. If the car is going too slow, it speeds up. If the car is going too fast, it slows down. Linear closed-loop control systems are notoriously hard to design.

If the gain of the system is too low, the speed won't be controlled very well. If set for 65 miles per hour, it might drop down to 60 miles per hour going up hills.

If the gain of the system is too high, the system will oscillate violently. If set for 65 miles per hour, it will go full throttle when the speed drops to 64.9 mph, and slam on the brakes at 65.1 mph.

Once upon a time, designing a good closed-loop system was an art only a few could master. Once engineers learned about gain margin, phase margin, poles in the complex plane, lead compensation, lag compensation, lead-lag compensation, and other parameters, linear control system design changed from an art to a precise science which is difficult to master.

Free Throws

Herculano-Houzel's casual observation that the brain employs neuronal loops made me think of basketball. Shooting a free throw is not as easy as she must think it is. It requires the brain to make precise geometrical calculations.

Basketball is an American sport; but it has been in the summer Olympic games since 1948, so presumably all of our international readers are familiar with it, and know what it means to shoot a free throw. If you tried to shoot a free throw blindfolded (that is, with an open loop) it would be like playing pin-the-tail-on-the-donkey. You need the feedback of a closed loop to make the shot.

---

[3] *ibid.,* (p. 59*)*
[4] *ibid.,* (p. 57*)*
[5] *ibid.,* (p. 51*)*

Let's do some math. The free throw line is 15 feet (about 5 meters) from the basket. (International readers, please excuse us for doing all the rest of the math in inches.) 15 feet equals 180 inches. Human eyes are about 3 inches apart (1.5 inches to the left and right of the nose). When the player is looking straight at the basket, his right eye is looking just slightly to the left of center, and his left eye is looking just slightly to the right of center. From the free throw line, "just slightly" equals 0.477 degrees (the arctangent of 180/1.5).

That means a player's brain must realize that looking 0.477 degrees cross-eyed means the hoop is 15 feet away. That is amazing. But wait—there's more!

The hoop is 18 inches in diameter, so 9 inches less than a perfect shot would cause the ball to hit the front rim. Since the ball is 9.4 inches in diameter, if the shot was just 4.7 inches shorter than that (a total of 13.7 inches short) the ball wouldn't even make it to the rim. A 166.3-inch shot would be an "air ball." If the player's brain thought his eyes were 0.517 degrees cross-eyed (instead of 0.477 degrees) he would think the basket was 166.3 inches away (instead of 180 inches). Just a 0.04 degree angular error would cause the player to aim 13.7 inches short.

But wait—there's more! Just knowing the distance to the basket is only part of the problem. The player has to be able to throw the ball along a trajectory that will go that distance. Knowing the weight of the ball and the force of gravity, the player must pick a launch angle and his brain must compute the proper muzzle velocity for the ball to take the proper ballistic trajectory to the basket—in a vacuum.

But since he is shooting the ball in the air, his brain needs to compute the effective drag on the ball. Drag is proportional to the square of velocity, but the velocity of the ball constantly changes (getting slower on the way up, but then speeding up on the way down). Therefore, drag depends upon the velocity profile; but the velocity profile depends upon drag, so iterative computations would have to be made to converge on a solution.

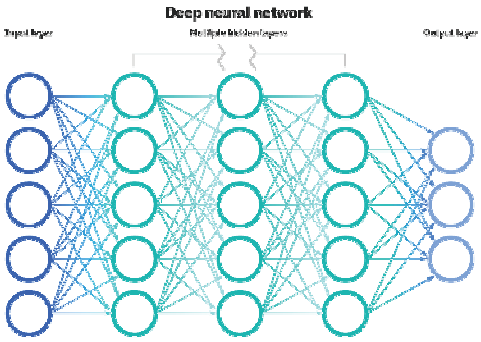
If that sounds complicated and confusing, good! I've made the point without having to show more calculations than necessary. The point is that the brain has to interpret precise angular measurements from the eyes to compute the distance to the basket, and then has to compute the direction and force necessary to make the ball go through the hoop. That's just for a free throw from a fixed location. Often the player has to shoot from different places while moving.

It seems unlikely that the brain would make all those calculations each time. It seems more likely that the brain remembers data from previous practice shots, and uses remembered successful directions and forces for various distances through visualization. Perhaps the brain imagines the ball going through the air into the basket, and remembers how to match the visualization. Even if calculations aren't involved, the data storage, data retrieval, and pattern matching is mind boggling.

Neural Networks

This brings us to the neural networks our brains use to store, retrieve, and process all the data necessary to shoot a free throw. Scientists have tried to create artificial neural networks for years.

> Artificial neural networks (ANNs) are comprised of node layers, containing an input layer, one or more hidden layers, and an output layer. Each node, or artificial neuron, connects to another and has an associated weight and threshold. If the output of any individual node is above the specified threshold value, that node is activated, sending data to the next layer of the network. Otherwise, no data is passed along to the next layer of the network.



> Neural networks rely on training data to learn and improve their accuracy over time. However, once these learning algorithms are fine-tuned for accuracy, they are powerful tools in computer science and artificial intelligence,

> allowing us to classify and cluster data at a high velocity. Tasks in speech recognition or image recognition can take minutes versus hours when compared to the manual identification by human experts. One of the most well-known neural networks is Google's search algorithm. [6]

Scientists have been trying to build artificial neural networks since 1958.

> Frank Rosenblatt is credited with the development of the *perceptron*, documented in his research, "The *Perceptron*: A Probabilistic Model for Information Storage and Organization in the Brain." [7]

In that paper, Rosenblatt said,

> The theory has been developed for a hypothetical nervous system, or machine, called a *perceptron*. The *perceptron* is designed to illustrate some of the fundamental properties of intelligent systems in general, without becoming too deeply enmeshed in the special, and frequently unknown, conditions which hold for particular biological organisms. The analogy between the *perceptron* and biological systems should be readily apparent to the reader.
>
> …
>
> At birth, the construction of the most important networks is largely random, subject to a minimum number of genetic constraints. [8]

Rosenblatt recognized that brains contain apparently randomly connected layers of neurons which are trained by experience.

The apparently random connection of neurons might appear to be evidence of chance—but those apparently random connections are actually evidence of design. Pseudorandom sequences are used in sophisticated designs. I used them in two different weapons systems which I obviously can't discuss in detail—but I can explain the concept at the unclassified level using the TREE-SORT.

Pseudorandom Sequences

The apparently random connections of neurons in the brain might not actually be random—they might be pseudorandom. A pseudorandom sequence is a sequence satisfying one or more statistical tests for randomness, but is produced by a definite mathematical procedure. It looks random—but it isn't. Pseudorandom sequences are used in communication systems where there is a very low signal-to-noise ratio.

I hope you will find the following discussion of how pseudorandom sequences work interesting; but if you don't, all you need to know is that pseudorandom sequences are real, and they work in systems designed by humans. Therefore, it would not be surprising to find them in biological systems; but it would be surprising if they arose by accident.

When trying to extract a weak signal from a very noisy background (like when you are trying to listen to a distant radio station) you are actually trying to sort information from static. The kind of information doesn't really matter.

Thinking is the process of sorting through facts to separate information from static. One common sorting algorithm is the tree sort.

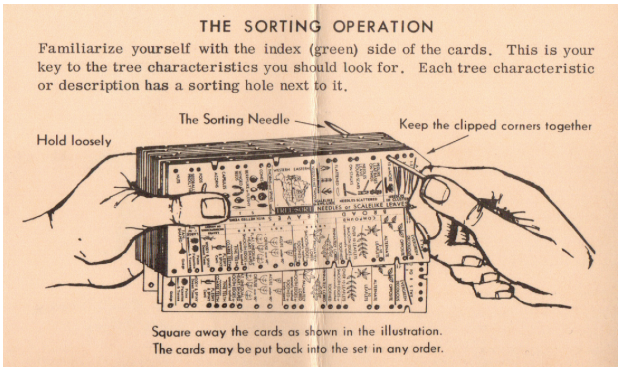
TREE-SORT uses a Tree Sort

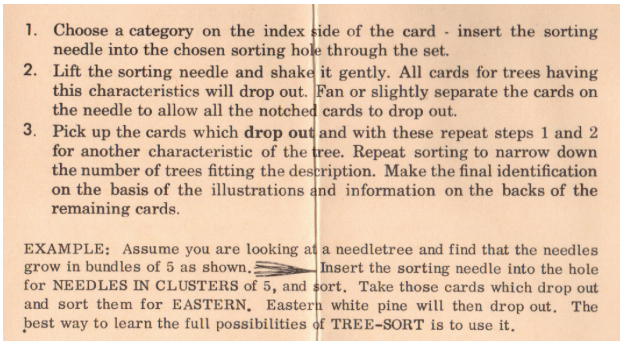
A pseudorandom sequence can be used to improve a tree sort. A tree sort is a method of reaching a conclusion through a series of choices. It gets its name from the notion of following a path from the base of a tree out to a particular leaf on the tree. You start moving up the trunk and come to a point where the tree branches. You either take the left branch or the right branch. Then you follow that branch until it branches again, and again decide to take the left or right branch. You keep going up the tree, taking left or right branches, until you finally arrive at a leaf. The conclusion leaf is uniquely determined by the sequence of left and right choices made.

In 1961, Joseph E. Forrester sold a punched-card system called TREE-SORT which he claimed was "The FASTEST and EASIEST WAY To IDENTIFY and STUDY 260 native and exotic trees of the United States and Canada." [9] I swear, I am not making this up. A guy named Forrester really did sell a set of punched cards based on the tree-sort algorithm to sort trees. I still have mine. Here is a picture of it:

It came with these instructions:

[6] https://www.ibm.com/cloud/learn/neural-networks
[7] *ibid.*
[8] http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.335.3398&rep=rep1&type=pdf
[9] https://www.amazon.com/Tree-sort-pocket-computer-Joseph-Forester/dp/B0007FBLHY

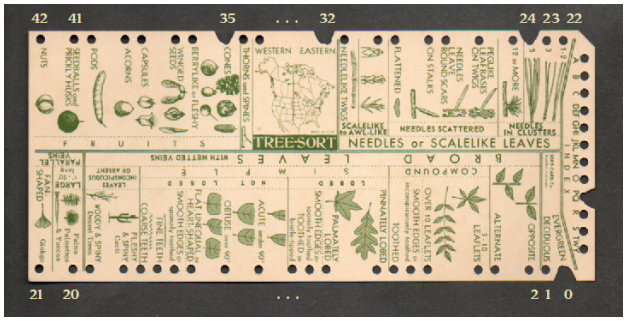




You just stick a knitting needle through a hole corresponding to a fact, and if the fact is true, the card falls out of the deck. You take the stack of cards that fell out and stick the needle through a different true fact, and more cards fall out. You keep doing this until there is only one card left. The example in the instructions told how to find the Eastern white pine tree card.

Here is what the back of the Eastern white pine tree card looks like:

Here's the front of the card:



Ignoring the holes on the right side (which are used for sorting by name), I've numbered the holes as if they were bits in a 43-bit binary number. A 43-bit binary number has 17,592,186,044,416 different values. Punched at bits 35, 32, 24, and 0, the Eastern white pine card =00000001001000000010000000000000000000001, which corresponds to the decimal number 38,671,482,881. There are 259 other cards in the deck, each of which is punched differently (depending upon number of leaves or needles, seeds, *et cetera*), representing 259 other 43-bit binary numbers.

The brute-force method of identifying a particular tree would be to search a table with 17,592,186,044,416 entries. Table entry number 38,671,482,881 contains the phrase, "Eastern white pine," 259 other entries contain the names of other trees, and 17,592,186,044,260 entries are blank. Clearly, that's not a very efficient use of memory.

On the other hand, a 64-bit computer could easily compare the 43-bit number representing the characteristics of a tree to ten 43-bit pseudorandom numbers. Then it could uniquely identify the tree using a 10 x 260 matrix table containing tree names. The 2600 entries in that matrix require much less memory than the more than 17 trillion entries in the table that doesn't use pseudorandom numbers.

If you knew how, you could build an artificial neural net with 43 inputs and just ten internal stages and you could get 260 correct outputs using pseudorandom connections—but you would have to design the network and then train it.

Here's what all this has to do with evolution. The seemingly random connections of neurons in the brain didn't arise by chance. They are a highly-efficient pseudorandom decision algorithm which serves a purpose. One might argue that, since pseudorandom numbers are virtually indistinguishable from truly random numbers, truly random connections might work as well as pseudorandom connections. That could be true—but just having ten pseudorandom (or ten truly random) connections won't sort trees all by themselves. Random or not, the neurons must be purposefully connected and trained.

Think About It

Darwin didn't know about closed-loop control systems. He didn't understand what visual processing the brain needs to do to control where to throw a basketball. Not only that, he didn't realize that it takes a closed-loop control system for the player to run without falling over. The brain takes data from the ear and uses it to control leg, back, and arm muscles to maintain balance. Nor did Darwin realize there are internal closed-loop systems controlling blood sugar levels and responses to infections. The human body has

many closed-loop systems which must function correctly to maintain life.

Darwin didn't know how neural networks in the brain allow the basketball player to visualize the trajectory that would take the ball from his hand through the hoop, and Darwin didn't know how apparently random connections could make that neural network sort through all the possible trajectories almost instantly.

Modern engineers know how to design closed-loop control systems and neural networks. It is hard to convince engineers who have ever built them that closed-loop control systems and neural networks arose by chance.

Email

Tradition Versus Fashion

The Evolution of Disclosure

Billy Bob wrote,

> Dave,
> Your science again' evolution suffers from some goofy ungainly unsightly fonts (Times Roman???), formatting (80 kinds???), colors (flesh colored background??, fuchsia fonts???? chartreuse fonts???), schemas (many, varied) and arrangements (chaos). Luckily the content is good.
> Maybe your website is trying to mimic evolutionists vision of how life started on Earth - random, without patterns or style, mixed, varied, all over the place, etc. If so, you hit the mark! It's like ***"Welcome to the Internet, 1989!!"***
> However "Web Site" and "Web Sites" is ***unforgivable***. Especially considering I am reading those offenses on a "website".
> (I know you are unpretentious... but I gotta share your website... err.. *web site*.. with friends)
> Billy Bob

Vintage Internet

Actually, it is "Welcome to the Internet, 1996."

In 1996, website was spelled "web site." We spell it as one word inside the text, but have kept the title "Web Site of the Month" for consistency and tradition.

The other issues Billy Bob raises have to do with accessibility, and substance rather than style. We don't think our readers are so shallow and superficial that they confuse flashy gimmicks (which might not be compatible with some browsers) for content.

Our web pages don't specify the fonts because your computer might not have the specified fonts, and might render the text unintelligibly. We let your browser use its default fonts. If you don't like the fonts, change your browser defaults. There are only four formats: <P>, <H1>, <H2> and <H3>. They are designed to print well on a black-and-white printer on an old Windows 3 computer, which some public schools might still be using.

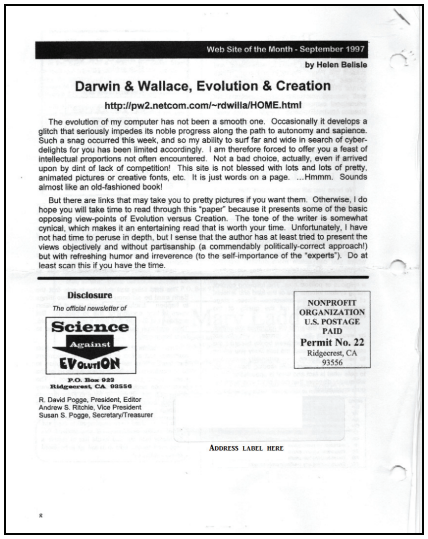
There are some websites (including this month's Web Site of the Month) which will not load on the Chrome browser my XP computer uses. We want everyone to be able to read and print the articles, no matter how old their computer is. I believe that all our HTML pages will display correctly on any browser on any device, and hope that the PDF files do, too.

It wasn't that long ago when I was in Russia, and my only Internet access was a dial-up modem. I just gave up waiting for some pages to load; but the Science Against Evolution pages came up instantly because they don't use any special styles, Java scripts, or unnecessary graphics.

The beige background on the HTML pages is easy on the eyes, and allows the quotes to stand out.

There are currently more than 700 articles on our website. If we changed style now, it would take too long to change them all to look modern. Tradition results in consistency.

Tradition is also the reason why the Web Site of the Month is formatted as one column instead of two. The first 6-page newsletters were three double sided sheets, folded and stapled, with the mailing information on the bottom half. We gave Helen one half page to write her review. Now we generously give Lothar the entire last page of the newsletter, but keep the single-column format.



Web Site of the Month - September 1997

by Helen Belisle

Darwin & Wallace, Evolution & Creation

http://pw2.netcom.com/~rdwilla/HOME.html

The evolution of my computer has not been a smooth one. Occasionally it develops a glitch that seriously impedes its noble progress along the path to autonomy and sapience. Such a snag occurred this week, and so my ability to surf far and wide in search of cyber-delights for you has been limited accordingly. I am therefore forced to offer you a feast of intellectual proportions not often encountered. Not a bad choice, actually, even if arrived upon by dint of lack of competition! This site is not blessed with lots and lots of pretty, animated pictures or creative fonts, etc. It is just words on a page. ...Hmmm. Sounds almost like an old-fashioned book!

But there are links that may take you to pretty pictures if you want them. Otherwise, I do hope you will take time to read through this "paper" because it presents some of the basic opposing view-points of Evolution versus Creation. The tone of the writer is somewhat cynical, which makes it an entertaining read that is worth your time. Unfortunately, I have not had time to peruse in depth, but I sense that the author has at least tried to present the views objectively and without partisanship (a commendably politically-correct approach!) but with refreshing humor and irreverence (to the self-importance of the "experts"). Do at least scan this if you have the time.

Disclosure

The official newsletter of

Science Against Evolution

P.O. Box 923
Ridgecrest, CA 93556

R. David Pogge, President, Editor
Andrew S. Ritchie, Vice President
Susan S. Pogge, Secretary/Treasurer

NONPROFIT ORGANIZATION
U.S. POSTAGE PAID
Permit No. 22
Ridgecrest, CA 93556

ADDRESS LABEL HERE

by Lothar Janetzko

IS GENESIS HISTORY?

https://isgenesishistory.com

Website promoting the documentary film "IS GENESIS HISTORY?"

For the website review for this month, we are looking at the website that promotes the above-mentioned documentary film. A reviewer of the film states that it "Attempts to deal with that one simple question: Is the biblical account of creation and flood meant to be understood as history? And Does the world give evidence of recent creation and catastrophic flood? Host Del Tackett tackles these questions head-on and does so in a compelling way."

The main page of the site starts with a continuous scrolling video of scenes from the documentary film and provides the following navigation links to explore the site: At the top left, there is a pulldown menu guiding the reader to SHOP, OVERVIEW, RESOURCES, TOPICS, CONTACT, DONATE and a link to the IMDB database describing the details about the video version of the film. At the top right, there are links related to your shopping cart and a search link. The middle top "IS GENESIS HISTORY?" link guides you back to the main page from any page of the site. The middle center has an "Explore Our Products link" leading directly to SHOP. [Editor's note: *Apropos* to this month's email column, that's not exactly how the web page appears on my Windows 10 Edge browser, and it won't load at all on my XP Chrome browser.]

The best place to start on the site is to select OVERVIEW, here you will find links to About the Film, Explore the Film, Questions & Answers and Del & Directors Discuss Film. In the About the Film section, you learn that "The Film's goal is to provide a reasonable case for Creation in six normal days, a real Adam and Eve, an actual fall, a global flood, and a tower of Babel." The Questions & Answers section seeks to provide explanations to the many questions about Creation & Evolution that are addressed in the film. This is done by presenting a short video clip from the film and then a written write-up of the dialogue between Del Tackett and the scientist addressing the question.

On RESOURCES you will find links to Articles, Videos, Free eBook, Guide to the Film, Devotional Study, Discussion Material, Creation Books, and Scientist Bios & Links. Articles is a listing of all articles on the "Is Genesis History?" website that are also sorted by subject under the "TOPICS" tab of the menu. There is a total of 52 articles, each given a category, title, and short description followed by a View Post link. At the end of each Post, you will find links to SUPPORT CREATION SCIENCE Donate Now, SUBSCRIBE TO OUR NEWLETTER SIGN UP, FEATURED ARTICLES, POPULAR PRODUCTS, Social Media FOLLOW US, QUESTIONS ABOUT CREATION & EVOLUTION WATCH NOW, FEATURED VIDEO, and LEARN ABOUT a selected category. The additional RESOURCES links all provide interesting material to review, especially the Guide to the Film where you can download "A Useful Little GUIDE to the Film" as a PDF file.

On TOPICS you will find the material presented in the film arranged into the following categories: Bible & Archeology, Life & Design, History & Science, Rocks & Fossils, Stars, and Age of the Earth.

On SHOP you will find links to materials you can order besides the "Is Genesis History?" Feature Film. The cost of each item is presented along with a description of its contents.

A quote from the Guide to the film by Del Tackett best describes what the documentary tries to convey to those watching the film. "**Genesis is central** to understanding everything around us. If we try to construct a history based on our own limited experiences, we will misinterpret what has happened in the past and misunderstand our place in the world. Genesis, on the other hand, explains where we came from, who we are, what our problem is, and where we are headed. When looking at everything together, we can be confident that Genesis is history."