Evolution gone wrong and creation gone right

Evolution Gone Wrong: The curious reasons why our bodies work (or don't)

Alex Bezzerides

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Although very readable and easy to follow, this book about claims of 'poor design' and 'useless organs' in humans has one major problem. That is the fact that most of the useless-organ claims covered have been dealt with in detail in journals and books.[1] Bezzerides holds a Ph.D. in neurobiology and behaviour, and is a professor of biology at Lewis-Clark State College in Idaho. However, as a true-believer evolutionist he sees the world, and at times distorts the world, through his 'evolution glasses'. Even when his own explanations are openly against the evidence, he tenaciously holds to them. A recurring problem is that Bezzerides seems to too-readily and uncritically accept evolutionary claims as fully valid. For example, he assumes that *Tiktaalik* is a valid evolutionary transitional form between fish and amphibians (p. 10). He totally ignores the problems with this common, but very problematic, claim.[2]

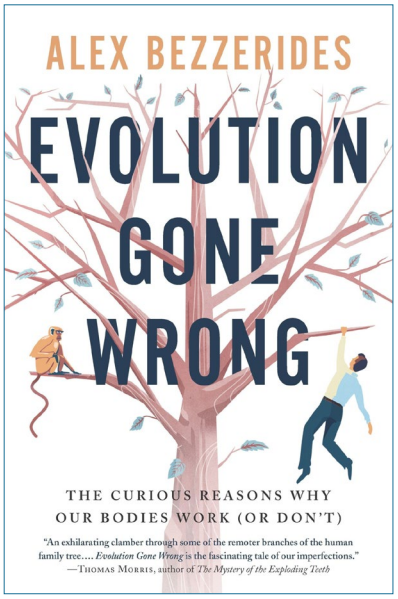
Problem teeth

At times Bezzerides even presents what he claims is an instance of poor design, then proceeds to refute his own example! The best example of this involved the analysis of results from a dental survey of his students. He found that only two students out of 70 had straight teeth with no dental problems; the rest had braces, problem wisdom teeth, and/or crooked smiles (p. xvi). He correctly concludes that these tooth problems, due to oral cavity constriction, are not poor design, but rather due to modern overly processed meals. Today's soft, cooked-food diet does not require humans to exert the necessary chewing forces that would allow their jaw muscles to develop sufficiently to make enough room in their mouth. This frequently results in crooked teeth, caused by an under-developed jaw (p. 30).

Crowded jaw

As the book is about evolution, Bezzerides then adds that evolution is partly to blame because our jaw has shrunk from our large ape jaw. The only evidence Bezzerides cites for this human jaw shrinking is his *belief* that humans evolved from an ancestor that was similar to a modern chimpanzee. Thus, he asserts, our evolutionary ancestors had a small jaw. Evolutionists do not believe that we evolved directly from a chimpanzee but that humans and chimps each evolved from some unknown common ancestor that resembled a chimp (pp. 161–162).

He correctly notes that less chewing was required as a result of the transition, from a tough-meat-and-vegetable diet that was the mainstay of our hunter-gatherer ancestors, to our modern softer-food diet. This softer diet was partly due to the invention of cooking, but especially the advent of highly processed foods (pp. 28–29). This is only a problem in modern society where the soft diet is the norm.



In areas where a diet of tough meat and vegetables is still the norm, the problem of a crowded jaw occurs less often. In summary, he argues that both genetics from our ape ancestor and diet are involved. Thus, evolution and the food environment (diet) are both part of what he calls the crowded jaw problem. This assumes, as Bezzerides admits, the 'use it or lose it' theory (p. 29).

Vision problems

Another section is on cataracts and other vision problems. After noting that a meta-analysis of 60,000 Europeans determined that over half of the population studied had some visual defect, again Bezzerides claims that this vision problem was due to poor design (p. 32). This problem, he claims, was ultimately due to evolution. Specifically, he explains that the cause of the most common vision problem, myopia, is because human eyes first evolved in the ocean, where our ancestral vertebrates dwelt.

He estimates that around 375 million years ago, when our ancestors ventured onto land, their eyes, which had evolved for vision in water, had already been in that state for about

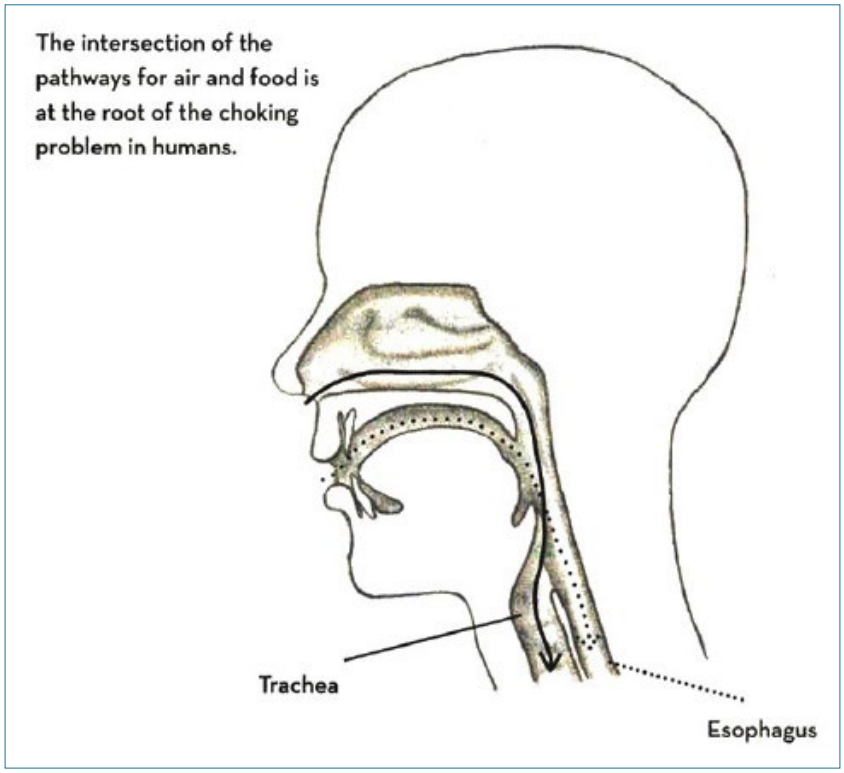


Figure 1. Illustration of the trachea–esophagus arrangement in humans from Bezzerides, p. 76. Note that Bezzerides does not include the epiglottis in his illustration which is a well-designed structure that is critical to prevent choking.

100 million years. Gradually, their vertebrate-bound eyes became air-adapted. In view of how critical vision was to survival, how these water-adapted eyes could have evolved into air-adapted ones in time for use in survival is not discussed. The eyes retained the fluids for water vision, and, as a result, never achieved the light refraction that would produce consistent image sharpness in a terrestrial environment. Because light travels slower through water than through air, and even more slowly through glass, many persons place glasses in front of their eyes to compensate for the imperfect job our corneas and lenses do in bending the light (paraphrased from pp. 40–41). This contrived explanation by Bezzerides means he avoids looking for the *real* reason for our vision problems. Discovering the real reason would allow us to better compensate for, or correct, the problem. And of course, it ignores that birds of prey, who are supposed to have had the same fish ancestors, have extremely sharp vision.

One good example of actual research into the cause of myopia (nearsightedness, when close-up objects look clear, but distant objects are blurry), found

> "… that children who spend more time outdoors are less likely to be, or to become myopic, irrespective of how much near work they do, or whether their parents are myopic. It is currently uncertain if time outdoors also blocks progression of myopia. It has been suggested that the mechanism of the protective effect of time outdoors involves light-stimulated release of dopamine from the retina, since increased dopamine release appears to inhibit increased axial elongation, which is the structural basis of myopia. This hypothesis has been supported by animal experiments which have replicated the protective effects of bright light against the development of myopia under laboratory conditions … ."[3]

In fact, Bezzerides acknowledges this research, which negates part of his evolutionary explanation (p. 65)!

When Bezzerides on occasion removes his 'evolution glasses', he displays some good insights in his writing. For example, he notes that the tear ducts that drain our eyes are smaller in women than in men. As a result, their tears are more likely to overflow down their cheeks, giving rise to the common belief that women 'tear up' more than men, and thus are more emotional (pp. 44–45).

The 'poor design' of the larynx

In the next claim, Bezzerides opines that choking on food is caused by "a universal shortcoming of human anatomy, and it seems completely backward from an evolutionary perspective" (p. 67). He concludes, "The origin of the lungs via the digestive system is at the root of the choking problem" (p. 75). Bezzerides' reasoning is based on the Darwinist belief that amphibians first evolved a breathing design which worked well for them. When they evolved into mammals (after first having become reptiles!), the amphibian design they had inherited didn't work very well. Nonetheless, mammals were stuck with it, and have supposedly been suffering ever since (pp. 77–78).

Thus, humans have inherited the problematic arrangement involving the intersection of the air (trachea) and food (esophagus) tubes, as shown in figure 1. This inherited (so-called) design 'flaw' is, Bezzerides claims, the major cause of choking. Evolutionists believe that the many changes required to evolve amphibians via reptiles into mammals did occur, yet natural selection, even faced with the selection pressure of death by choking, could not evolve the simple changes Bezzerides

argues are needed for this arrangement to be both functional and much safer for mammals.

Again, poor design is not the problem. The existing design is required for speech because the larynx must be low in the trachea. Producing speech requires the tongue, the teeth, and the entire oral cavity to be the distance above the voice box where it is found in humans. A very different design is used in other mammals, which very rarely choke on food, but also lack the ability to speak (figure 2). Thus, the design in humans allows us to speak, but presents a slightly higher risk of choking on food. As Bezzerides admits, "The low position of the non-infant human larynx does come with a benefit, and it is a pretty big benefit: it allows humans to speak" (p. 82). This is illustrated by an infant's inability to speak because their larynx is too high, which doesn't allow them to modify their oral cavity to form words (p. 84). Only when infants are between two and three years old has sufficient growth occurred, thereby causing the larynx to descend low enough for the child to use language (p. 85).

For children, choking is a special problem because their tracheal diameter is very small, like many other vessels in their body. Specifically, an infant's tracheal diameter is about the size of a green pea. This is one reason why milk and puréed foods is their main recommended diet for the first year. Another reason is that the human digestive system is not designed to digest and process even puréed fruits and vegetables until, depending on the baby's size and maturity, the baby is 4 to 6 months old.

The next greatest risk of choking is in the elderly, especially those suffering from a stroke, Parkinson's disease, or neurogenic dysphagia (i.e. difficulty in swallowing food caused by disease or impairment of the nervous system) (p. 71). Most adults, though, are at a very low risk of choking. Most commonly, choking occurs when eating too fast, trying to swallow too large a food portion, or talking and laughing while eating.

Humans swallow about 1,000 times a day, or 27 million times in an average lifespan. Consequently, life-threatening choking events are relatively rare when compared with the number of lifetime swallowing events.

The human knee

The next 'poor design' covered is the human knee, specifically the anterior cruciate ligament, which Bezzerides claims millions of individuals tear each year (p. 101). After acknowledging that this injury most commonly occurs from playing certain sports, especially football, soccer, and basketball, Bezzerides claims that the entire problem is due to our evolving from quadrupedal apes to bipedal humans. He claims that the transition occurred only 3 or 4 million years ago, which was not enough time for evolution to perfect the new knee design. Bezzerides admits that this transition lacks evidence.

For this reason, "Scientists have generated as many as 30 hypotheses that attempt to explain how and why the transition to bipedalism took place" (p. 104). Darwin devised the 'freeing of the hands' hypothesis, which argues that bipedal locomotion allowed us to use our hands to build weapons to hunt, farm, and build our homes, however crude. Soon after Darwin proposed this theory, Bezzerides notes, good arguments against it were developed. The problems with this theory have motivated many other theories to account for bipedalism; Bezzerides claims as many as 30.

One idea favoured today is the thermoregulation theory, which proposes that the main benefit of bipedalism is that humans are better able to regulate their body temperature compared to quadrupedal locomotion. Regardless of why it occurred, Bezzerides' concern is knee problems. One wonders if similar damage would occur if humans were quadrupedal. Our bipedal stance is what allows us to play many sports, such as most contact sports, but being more injury-prone is the price we pay for our bipedal design.

The fact is, the knee is the largest, most complex joint in the human body, and one of the most used (and abused) body joints. Virtually all knee problems today are due to abuse, overuse, and disease, *not* poor design. It is also, as widely acknowledged, a marvel of engineering and design. Leading design engineer Stuart Burgess has documented the irreducible complexity of the knee joint, including the four-bar hinge system.[4] He has also designed a biomimetic robotic knee joint modeled on our knee.[5,6] Furthermore, no evidence exists of knee evolution in the abundant fossil record, which should be easy to find, given that most of the knee parts are bone, which is comparatively well-preserved in the fossil record.

Back pain

A book on 'poor design' in humans would not be complete without a chapter on the claimed poor design of the human back. This book does not disappoint (p. 199). In short, evolutionists tell us that we evolved from quadrupeds and inherited a design that evolved for walking on all fours (p. 172). Bezzerides then infers that back trouble in humans is directly traceable to our primate ancestors leaving the trees for open grassland over 4 million years ago. In short, Bezzerides claims, "At the end of the day, you're a bipedal beast walking around with quadrupedal parts" (p. 199). This, he claims, explains why 61% of Americans report lower back pain, which, worldwide, is a leading cause of disability (p. 170).

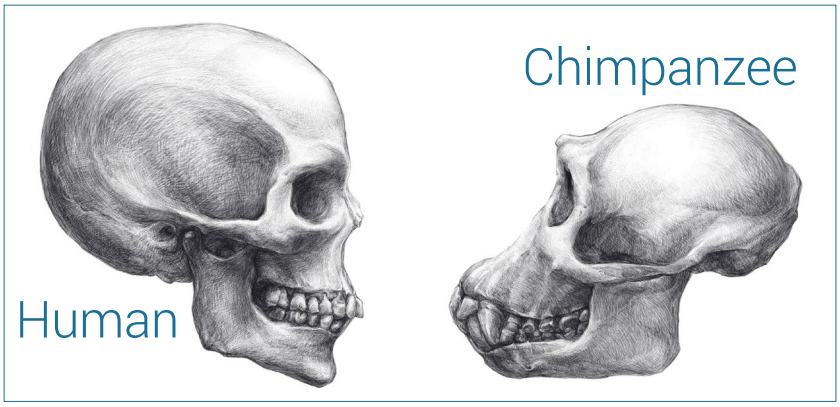


Figure 2. Facial angle contrast between humans and chimps showing that the chimp face is too long to enable them to form words, wheres the flat face of humans helps facilitate speech.

According to the evolutionary scenario, to walk on two feet, the human spine had to evolve to become very different from that of our ape cousins. The move to the forest floor supposedly caused our human ancestors' centre of gravity to shift until, after thousands of years, they could balance on two feet.

For example, the inward, or lordotic, lumbar curve must have evolved to be far enough inward so that the spine was under the head, and the centre of gravity was above the hips. The problem was, evolutionists claim, it didn't evolve quite far enough, thus we have back problems. Evidence of our evolution from quadrupedal creatures includes chimps having C-shaped spines, as do human babies. However, this design is logical, given that babies spend most of the day on their back. At around 13 months, they can stand up in their crib by holding on to the railing. Soon after, the back begins to develop the shape for human adulthood.

This chapter follows the trend of most of the rest of the book. Bezzerides gives the evolutionary explanation for back problems, then explains that it may not be the whole story. He then gives his version of the whole story. However, this accounts for most of the perceived problems, but does not provide evidence of poor design. The problem is *not* evolution resulting in poor design, but rather poor lifestyle habits. Leading expert on the human spine, Richard Porter (1935–2005), the first Sir Harry Platt professor of orthopaedic surgery at Aberdeen University,[7] explained many important good design features:

> "When you start to examine the biomechanics of the curved spine, asking why it's that shape, and what's good about it, you find that the arch of the spine has a beautiful purpose. Like the arch of a bridge, it adds strength. Because of that arch in the lumbar spine, a person with a lumbar lordosis can lift proportionally more weight than a gorilla with its kyphotic (opposite curvature) spine! So it's not surprising that treating back pain with postures and exercises that restore the lordosis works exceedingly well."[8]

Bezzerides acknowledges:

> "… that back pain occurs in epidemic proportions [in Western society] because we do not put our backs, with all their interconnected bones, muscles, ligaments, and tendons, through the same historical paces we once did. It suggests spines become misaligned and discs slip because our backs are not flexible and strong enough *owing to general inactivity* [emphasis added]" (p. 187).

Yet this alleged poor design claim is a common reason to reject the creation explanation.[9] Strong back muscles play a major role in supporting the health of the spine by maintaining the proper alignment of the spinal vertebrae. Having had back pain for years, my doctor put me on a particular exercise regimen. As a result, no more back problems.

Birth and menstruation

Most mammals do not menstruate, but reabsorb the excess blood and tissues, a process called *covert menstruation*. When the endometrium and blood are expelled, it is referred to as *overt menstruation*. Of the 5,416 species of mammals, those that undergo overt menstruation include only 181, or 5% of the total. This includes many primates, four species of bats, a rodent named the spiny mouse, and elephant shrews (pp. 211–212). The fact is that evolutionists do "not have the foggiest clue as to how or why it [menstruation] evolved. … it turns out, it is wildly complicated and still not terribly well understood" (p. 217). Nor is there any evidence of its evolution. We do know that until all of the hundreds of required parts exist, and are assembled into a functional entity, no reproduction can occur.

A good reason exists for this 'wildly complicated' system, namely that for most mammals a very short window exists during which females are fertile and it is very wasteful for the thick endometrium to be present all day, every day. The illustration Bezzerides uses to demonstrate this fact is that it is very wasteful to keep the house lights on 24/7 if visitors stop by for only a few days a month (p. 222). Moreover, "Women menstruate because their bodies have more control over their reproductive cycles than most other mammals" (p. 236).

The chapter ends with the claim that as the human brain, and thus the head, evolved and became larger, it

became more difficult to birth babies (pp. 297–301). Thus, a trade-off occurred, which resulted in one of the most commonly claimed examples of poor design, namely the problem childbirth presents for humans. Evolutionists claim that the human birth mechanism was well-designed in our evolutionary animal ancestors, but the comparatively rapid enlargement of the human brain that occurred as we evolved from ape-like ancestors created problems. They claim that the main problem is that the human birth canal diameter did not correspondingly evolve to be larger to accommodate the evolution of a larger brain.

As a result, evolutionists argue, the human head size enlarges too quickly in embryonic development, and thus is often too large to pass easily through the birth canal opening. This theory, called the *obstetrical dilemma*, is the currently dominant evolutionary thinking behind this claim.[10]

Bezzerides writes of this claim among others:

> "If we claim that organisms and their parts have been specifically designed by God, we have to account for the incompetent design of the human jaw, the narrowness of the birth canal, and our poorly designed backbone".[11]

In contrast to this common claim, evolutionary zoologist Professor Clive Bromhall writes, "it is simply not true that the [human] brain grows so fast that it 'forces' the baby to be born before it is ready", as is often claimed by evolutionists.[12] Bromhall concludes that biological research has documented that the human brain does *not* grow as fast as that of most animals. The fact is,

> "... the human body develops at an incredibly slow rate—it takes far longer [for humans] to progress from one developmental stage to the next than any other primate."[13]
>
> "The vast majority of the size difference between human brains and those of other primates results from a *far longer period of growth after the baby is born* [emphasis added]".[13]

Chimps' brains nearly double in size between birth and adulthood; in contrast, the human brain quadruples in size and does not stop growing until around age twenty.

So much for the Darwinists' claims. Actually, humans, as a whole, have *fewer* birthing problems due to the brain size and birth canal ratio issue than do many primates. The many examples include squirrel monkeys, who must actively help with their own birth.[14] Usually the claim is made that humans have more design problems that most animals. But, as Bezzerides correctly noted, some animals have birthing problems that are worse than those of humans (p. 298). And as usual with 'bad design' arguments, they ignore the biblical creation model that includes the Fall. Genesis 3:16 suggests that the obstetrical dilemma was not part of the original "very good" creation, but was the result of the Fall.

Conclusion

As a whole, this book was an excellent read. However, it assumes evolution throughout, while providing no evidence for it. One would expect that evidence for evolution would be a focus of the book, given its purported theme, noted in the title *Evolution Gone Wrong*. Instead of *Evolution Gone Wrong*, a more accurate title would be *Modern Society Gone Wrong*. Also, the author's feelings about Christianity were clear. For example, with regards to menstruation, "the Bible in the Book of Leviticus . … is chock-full of ridiculousness" (p. 217).

Aside from this problem, the book was packed full of interesting information, some of which was new to me. It is easy to see why Bezzerides was a very popular professor, which, no doubt, unfortunately allows him to influence many students to accept human evolution, given his one-sided presentation in this book.

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