Guest Editorial

They *still* shoot horses, don't they?

S. Jay Bowman

Here they are again, folks! These wonderful, wonderful kids! Still struggling! Still hoping! As the clock of fate ticks away, the dance of destiny continues! The marathon goes on, and on, and on! HOW LONG CAN THEY LAST!

Rocky, in *They Shoot Horses, Don't They?* (1969)

In the 1935 novel *They Shoot Horses, Don't They?* (by Horace McCoy),[1] and later popularized in a 1969 film version of the novel, desperate Depression-era couples enter into a dance marathon with hopes of winning a substantial cash prize. Weeks drag on as these poor, exhausted souls struggle to not only keep moving but also simply stay alive. Spectators pay to watch this grueling exploitation that finally ends, but without revealing any winners . . . primarily, because in this tragedy, everyone suffered. The title of this drama refers to the practice of shooting a horse after it has broken a leg to put it out of its misery.

Unfortunately, while enduring the current spectator sport of dismissing and diminishing the specialty of orthodontics, we continue to beat the dead horses of failed theories and practices. Yet nothing changes. Many of these notions seem to be repeatedly resurrected in the marketplace by clever entrepreneurs who repackage and retask them for the impressionable minds of new followers. Or, as Ghostbuster Winston Zeddemore said, "If there's a steady paycheck in it, I'll believe anything you say."

Defrocked disjoiners, self-proclaimed "mavericks," and aggrieved agitators, all with their own agitprop, become social organizers or pied pipers, leading lemmings to their sometimes nihilistic vision for the future of orthodontics. In these endeavors, it seems that ethics and professionalism have been conveniently abandoned. Think Johnny Rotten's last words to the audience at the conclusion of the Sex Pistols only tour: "Ever get the feeling you've been cheated?"

The most intriguing hypocrisy is the denigration of research on both sides of the moat separating the angry clinical villagers and the ivory tower pencil pushers. When research results don't square with the pious desires of docs found knee deep in the saliva of the clinical trenches or fit the investment of the shareholders of commercial suppliers, then data are simply discounted. Why not? There never appears to be a major downside consequence. In other words, no one dies from questionable orthodontics: "no harm, no foul" it seems.

On the other hand, there are also smug champions of the scientific method within our august specialty that have completely embraced the term "evidence-based" (at least as long as it agrees with their definition), meaning for them: if you can't ante up at least an RCT or, better yet, a Cochrane Collaboration for support of a particular position, then you 'ain't got . . . nuthin.' It doesn't seem that both extremes can ever establish a consensus, let alone be at least cordial anymore. All the while, the public becomes ever more misinformed, confused, and potentially mistreated. So, some folks give up and turn to "cheap-and-fast" or even do-it-yourself (DIY) alternatives, sadly encouraged by a few who have likely mistaken hypocrite for Hippocrates.

Since the advent of social media, we have seemingly dismissed our scholarly avenues of continuing education and are now subjected to the blind leading the blind, online. We have devolved into "like-minded" clusters of spitting and scratching detractors within so-called private and proprietary study clubs or attending commercial congregations, many exclusively for profit. Within these groups, there's plenty of name-calling, shaming of colleagues and, if you don't fit the meme of the operators of the group, you're simply excommunicated as a dim-witted, old-fashioned, and naïve caveman, summarily cast to the curb. Reminds one of the remarks in the comedy film, *Monty Python and the Holy Grail,* when the French soldier atop his castle wall is disparaging King Arthur with "I don't want to talk to you no more. Your mother was a hamster and your father smelt of elderberries!" Silly, isn't it? Here's where this sort of unseemly stuff should end. So, I quote the "Conscience of Orthodontics," Lysle Johnston:

It isn't unprofessional to question a person's science.

It's not uncollegial to demand proof.

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And, it's not impolite to point out glaring conflicts of interest.

In our over 100 years, every generation has had charismatic gurus flogging innumerable versions of magical types of braces or ingenious appliances made out of chunks of plastic that seem to be the holy grail for bone development and tooth-saving. We have run the full evolutionary gamut from pre–20th century functional appliances to treat glossoptosis or tongue swallowing to the growth industry of mandibular enhancement in small children in the 1980s and now, back full circle, to treating small airways even by promoting the idea of expanding jaws for 4-year olds or encouraging them to "chew their teeth straighter" on harder foods like to good old pre-industrial days. How quaint?

Prior to Edward Hartley Angle's disparagement of removing teeth, how was significant dental crowding and/or protrusion dealt with? How about the removal of some dental units? Certainly, that's always blasphemy to those who employ magical thoughts. It seems an answer involving extraction forceps is *never* satisfactory to some, despite the extraordinary amount of evidentiary support. What goes around always seems to come around again and again.[2] On its *face*, these perpetual arguments seem simply absurd. But wait! Perhaps, it's not that simple.

Anyone bothering to occasionally pick up a copy of *Psychology Today* knows there have been a number of neuroscience studies describing the biochemical effects of decision making, demonstrating that people seemingly cannot think straight. Yup, even after the evidence for their beliefs has been totally refuted, people fail to make appropriate revisions in those beliefs. This is termed the "backfire effect": when you won't let facts get in the way of a good belief. In Mercier and Sperber's book *The Enigma of Reason*[3] they point out that, "reason is an evolved trait and is an advantageous adaptation to our hypersocial niche as part of the human condition." Yet we are often incapable of reasoning. Quoting from their text, "Habits of mind that seem weird or goofy or just plain dumb from an 'intellectualist' point of view, prove shrewd when seen from a social 'interactionist' perspective. In other words, social support for humans has been more important than knowing the truth."

As orthodontics is certainly steeped in a scientific background, it would seem that we are aware of the risks of "confirmation bias": a tendency to accept information that supports one's beliefs while rejecting anything that might contradict them. This can also be called "my-side bias." If we are presented with the "other-side" argument, we're very skilled at pointing out its weaknesses, but we are astonishingly blind to our own. In other words, it's been much more of an advantage to us as a species to win arguments, not so useful, it seems, for clear reasoning. Or as a couple of Yale researchers (Sloman and Fernbach)[4] observed, "As a rule, strong feelings about issues do not emerge from deep understanding. This is how a community of knowledge can become dangerous." Orthodontics has hardly been immune.

In the book *Blind Spots: Why Smart People Do Dumb Things*,[5] the author cautions that our failure to question what we think we already know blinds us to other possibilities. Constant questioning and reevaluation and reexamination are hallmarks of the scientific method. In the chapter on science vs pseudoscience in Shermer and Gould's *Why People Believe Weird Things*[6] they define scientific progress as the "cumulative growth of a system of knowledge over time, in which useful features are retained and non-useful features are abandoned, based on the rejection or confirmation of testable knowledge." Yet the most frequent reason that people believe "weird things" is because they want to. It feels good. It is comforting and consoling. And changing a belief may be detrimental in terms of social or professional standing, not to mention the emotional toll, and dare I point out … financial ones.

In the reference, *Denying to the Grave: Why We Ignore Facts That Will Save Us,*[7] the authors discuss the disparity between what science tells us and what we tell ourselves. The present orthodontic concern is for persistent, yet unsupported, beliefs, often now perpetuated in memes throughout the blogosphere and preserved in proprietary publications or Web pages. Many of these beliefs may not just be demonstrably false but are also potentially harmful.

For a glaring example in orthodontics, we eternally resurrect the contradictory beliefs that attend the pendulum swing of the presumed "crimes-against-nature" effects of extractions. This is especially disconcerting since the evidence has been consistently clear that, on average, the removal of teeth is not detrimental but, in fact, is advantageous for those patients who need it: those presenting with significant crowding and protrusion. Yes, you and your patients can also still *breathe* easily—the research, like the airway, is clear.

Of course, what's most disturbing is those patients who don't *deserve* to be treated nonextraction, as they may receive a less-than-ideal result than they had bargained for. This is especially concerning since the *avoidance* of extraction has never been demonstrated to universally provide a more beneficial outcome. That is, unless you consider that forceps were not applied to some teeth (and as long as we kid ourselves that third molars aren't teeth and we don't mind the attendant

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20%–30% chance of impeded eruption of second molars via avoidance), and aggressively overtreating most little kids has also not proven to be routinely advantageous. And, when we "shine a light" on the silliness of dark mouth spaces, the truth, and more teeth, are revealed within a smile. So, we are really left with only two choices: more bone or less teeth. Which?

How about a compromise and just line up the "social six" in six months and bite be damned? When is good enough, just good enough? Have you ever had a *consumer* preface, "Doc, I just want this one tooth fixed," only to return as a *patient* with, "now, it feels funny when I bite down." "Funny how? Whattya mean funny? Like a clown?" How might this relate to potentially "funny" results for unsuspecting *consumers* who elect to "treat" themselves *sans* a health care provider? *Patients* don't want appliances; they actually desire results.

Although the majority of orthodontic patients don't require extractions, don't beat yourself up about it: it's okay to end the life of four viable teeth when needed. Moreover, the advent of miniscrew anchorage has concluded the parochial arguments. With screws, we predictably move teeth both ways: mesially or distally. The key is that we should have returned to focused treatment planning, like where do you want the teeth to end up? The anterior teeth can be maintained anteriorly *despite* extraction or they can be maximally retracted without all of those old fears of losing anchorage, and all the while, vertical dimension can be better controlled. It's "Game Over!"

So next time, when faced with, say, the extraction decision, analyze the arguments on both sides clearly without the interference of magical beliefs and then ask yourself "What is the downside of a bad decision here?" Erring on the side of nonextraction is most fashionable today, especially if you're in the "busyness" of clicking on computer buttons or dispensing plastic trays, but the negative pay-off for the patient may come later. Is that your concern?

Occasional extraction might not be welcome within the tribe you've joined, but it's actually a private decision between patient and practitioner; shhh, no one has to know. But I'm certain in response to this epistle that there will be a sudden appearance of refuting "alternative facts and foibles" found on forums and Facebook. And I'm confident some good old-fashioned name-calling and threats. My heart is aflutter with anticipation.

They *still* shoot horses, don't they? Perhaps, with over a century of this quarrelling, it's time to "put down" most of these disputes, put them out of their misery. Although I'm skeptical in the current spiraling, grim, and commercialized environment, hope springs eternal that most of us would really rather turn our focus on to quality patient care than fret about feeble rationalizations,[8] Google rankings, or bashing colleagues. Most, anyway.

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