

Truthiness in Orthodontics

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What is truthiness? Do we need more truthiness in orthodontics? The word is attributed to Comedy Central's Steven Colbert, and he defined it as "truth that comes from the gut, not books." Indeed, truthiness was selected as the Merriam-Webster choice for the word that best summed up 2006.

Now *truth* itself is an elusive word, and not all that comes from textbooks or from the gut is truth, at least as defined by evidence-based guidelines. Truthiness in orthodontics is a natural step in the evolution of a field. Lacking hard evidence, the conscientious practitioner will use past experience as the best information available to treat patients. Orthodontics is far from a perfect science, and experience (the origin of gut feelings) is the best teacher when there is no better information available. This step logically leads to the preceptorship style of training in which the experiences of one generation are passed on to the next. Automating this process leads to the proprietary school.

The important point is that, lacking better information, gut feelings will and should prevail since it usually will be somewhat better than chance alone. The problem is that as evidence-based information accumulates, we all have trouble abandoning ideas that have guided us. This difficulty is compounded by the fact that science rarely presents itself as a finished clinical application. Scientific truth usually comes in pieces that accumulate over time to become clinical applications.

The bigger problem in dealing with truth is that truth is rarely absolute. A case report is a truth for that specific set of circumstances, but it is weak evidence for making future decisions. It probably is exceeded only by an editorial in terms of the absence of real substantive information.

The encouraging feature of this is that true professionals continue to seek the best truth available. True professionals do not see the imperfection of a science as an obstacle or regard it as a frustration. Rather, they see it as an opportunity to grow, to improve constantly, to make the best decision possible with today's

state-of-the-art information knowing that this information can and probably will change tomorrow.

The more difficult problem for a discipline is our human desire to do the best and our inability to tolerate ambiguity. If someone has no threshold for ambiguity, he or she may well be attracted by an idea that promises absolute information and satisfies his or her comfort level for unambiguous clinical decisions. This may take the form of a named group that has stopped questioning and simply fills in information, presented as fact, wherever there is ambiguity. Here is truthiness in action. Such a group will derive comfort from confining their association to those of similar beliefs and often perceive the outside world as unwilling to listen to them. A common method of identifying such a group is to refer to them as a philosophy and identify them with a named technique or an eponym.

Now, philosophy is a noble field and is defined as the search for a general understanding of values and reality by speculative means rather than observational means. Science, on the other hand, is focused on observational means obtained through the scientific method with hypothesis formulation and testing.

A wonderful explanation of how we develop truthiness is in the field of cognitive dissonance. Cognitive dissonance is a well-established psychological theory first advanced 50 years ago by Leon Festinger, a social psychologist at Stanford. In essence, the theory says that when the human cannot tolerate incongruity between that which is felt (gut truth) and scientific fact, we resolve the conflict by rationalization. We cognate or rationalize to reduce the dissonance. Classic examples are habits we all have that we know are not good for our health, but we find a reason to continue them.

We have many practices in orthodontics that we know are in conflict with the evidence, but our feelings tell us to continue them. These practices are often the hot button areas that are controversial. When you cite one, someone will rise with emotion in its defense. Conclusions based on truthiness or gut feelings are

emotional issues. Fact-based science is accepted and even welcomed by the true professional. *Truthiness* is a wonderful word to describe feelings from the gut, not from science. It will always be with us. Our responsibility is to recognize it for what it is and, even when

we apply it, to constantly seek better scientific information on the subject.

Truthiness will always be with us. Our goal must be to decrease the amount and application of it by constantly developing better orthodontic science.