Editorial

Use of the term subluxation in publications during the formative years of the chiropractic profession

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Abstract The term subluxation has come to have different meanings for different health care professions in the United States for over the past century. This controversy has resulted in some contention both internal and external to the chiropractic profession. Some current factions within the chiropractic profession hold the term subluxation to be synonymous with the identity of chiropractic itself; however, this term was not solely used by chiropractic during its formative years. The purpose of this article is to look at uses of the term by various professions (osteopathy, medicine, and chiropractic) at the turn of the century, a time in which the chiropractic profession was developing.

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Introduction

There may be nothing more sensitive to a group of health care practitioners than someone attacking a core value on which the group has pinned its entire existence. For some, this identity is associated with the word subluxation. The term subluxation has come to have different meanings for different health care professions in the United States over the past century. This has resulted in some contention both internal and external to the chiropractic profession.

Although Daniel David Palmer, founder of the chiropractic profession, argued that others had attempted to steal the concept of subluxation,¹ this term had been used by the medical profession many years before the birth of either chiropractic or osteopathy. In the 1863 medical textbook, Henry Hollingsworth Smith describes a subluxation as “An Incomplete Luxation, or a Subluxation, is one in which the bone is displaced from the articulation, but not entirely so, some portion of its articulating surface still remaining in the natural cavity or upon its edge.”² The standard medical description associated with traumatic injury was considerably different from the meaning of the term that would be confiscated by “irregular” (nonmedical) practitioners in decades to come. Chiropractic’s use (or misuse) of the term was not unique. Other professions used the term subluxation in a similar or nearly identical manner as DD Palmer’s early chiropractic descriptions. This raises the question if this term is unique to chiropractic and if the term should be a core component of the identity of the chiropractic profession in the present day. The purpose of this article is to look at similar uses of the term at the same period in which the chiropractic profession was developing.

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Discussion

One of the remarkable features of the first chiropractic text is that it was not written by the founder of the chiropractic profession, who was known for his newsletter publications, but by 3 of his graduates. Oakley Smith, Solon Langworthy, and Minora Paxson graduated from DD Palmer’s school between 1899 and 1902, only a few years after DD Palmer declared that he had discovered chiropractic. The 3 graduates established a rival school of chiropractic in Cedar Rapids, IA, less than 100 miles from where DD Palmer had founded the Palmer School. This act was done with some defiance of DD Palmer but also with the understanding that DD Palmer had validated them to do so by stating on their diplomas that they were recognized to “teach and practice” chiropractic. Langworthy, Paxson, and Smith’s American School of Chiropractic was founded in 1903. The American School of Chiropractic began advertising for students with several strong claims about what the school offered as evidenced in the advertisement in Fig 1.

Smith, Langworthy, and Paxson began working on a textbook for chiropractic because, at that time, one did not exist as the profession was not yet a decade old. In early 1906, they published a 2-volume set titled Modernized Chiropractic (Fig 2). The dedication reads

To the students of the first classes of the first chartered and organized school of Chiropractic, who, by their unflinching loyalty and friendship sustained and encouraged us in the enunciation of new truths and in the task which we took upon ourselves of placing Chiropractic upon a truly scientific basis, this work is humbly inscribed by their sincere friends, THE AUTHORS.

This was the first chiropractic textbook, beating BJ Palmer to that honor by just a few months. Thus, their mention of the term subluxation was the first to be seen in an educational chiropractic text. The authors provide a detailed description and clarification of what they meant by the term. They state that other professions were using the term in addition to chiropractors and made an attempt to clarify its meaning.

We are in hopes that the publication of this work will clear away the false conceptions which have hitherto been entertained regarding subluxations, not only by Chiropractors but also by the other schools believing in subluxation as the cause of disease.

In just a few short years, this book became critical for the survival of the chiropractic profession by enabling the successful legal defense of the Morikubo trial in 1907.
landmark trial established a foothold for the profession on the path to legitimacy and defining itself.\textsuperscript{6} It helped show in the legal arena that chiropractors were not practicing medicine or surgery because chiropractic had a distinct art, science, and philosophy.\textsuperscript{6,7} To accomplish this feat, the defense attorney based his argument on the information within \textit{Modernized Chiropractic}. Thus, the terms in this text helped to define and establish the identity of chiropractic.

One of the key characteristics of \textit{Modernized Chiropractic} was that the chiropractic subluxation was described as aberrant motion and/or displacement instead of using the “bone out of place” theory as used by others at that time.

Even those who have been looked upon as the best authorities have always spoken and written of a subluxated vertebra as being one which has been moved from a fixed normal position to a fixed abnormal position, and being in a fixed abnormal position brought steady and uninterrupted pressure to bear on vital structures. A greater misconception of the real condition could not be entertained. It must be remembered that the spine is a movable column containing many segments, each of which is capable of movement—even when subluxation is present—unless solidly locked by very heavy osseous ankylosis, the fibrous ankyloses and milder forms of osseous ankyloses not destroying movement entirely.\textsuperscript{5}

The theory offered is one of altered motion, instead of a static displacement or partial dislocation (ie, partial luxation). The authors state:

> When a vertebral joint is normal it is capable of a certain definite field of motion over which its articular surfaces travel in performing the various movements to which it is subjected. Having as it does a circumscribed field of motion it must also have a center of motion, and when subluxation occurs it may be likened to a wheel, the hub of which is not in the center.\textsuperscript{5}

From this premise, the purpose of the chiropractor would be to restore normal motion, instead of moving bones “back into place.” Smith, Langworthy, and Paxson go on to say:

> The object, then, in the reduction of a subluxation is not to push or pull the bone from one fixed, constant, or persistent position to another position just as unchangeable. The real object is to change the center of the field of motion so that the hub of the joint will be where it belongs and this condition can only be brought about by so affecting the malformed structures surrounding the joint as to call into activity that inherent force with which they are endowed, which tends to self preservation and recuperation and whose success is in direct proportion to the degree of activity aroused. The Chiropractic Thrust is by far the best agency through which to secure the greatest degree of this activity.\textsuperscript{5}

The aberrant motion concept for subluxation (Fig 3) may be more in line with present day theories that help to explain the benefits of chiropractic manipulation.

DD Palmer’s early writings proposed an alternate approach to the use of the term \textit{subluxation}. He argues that a chiropractic subluxation is a partial luxation (ie, dislocation) of a joint. His theory purports that the partially dislocated bones will compromise surrounding soft tissue, such as nerves exiting the intervertebral foramina (Fig 4). And
because the nervous system is interconnected with the entire body, the end result of subluxations would result in disease.

A Chiropractic sub-luxation is a partial dislocation, slightly separated from its articulating surfaces. This condition does not necessarily involve a fracture. The subluxation partially occludes the intervertebral foramin, the dislocation completely. It is the partial sub-luxation that produces pressures upon nerves as they emanate through this opening, hence impulses are hindered, disease its result.1

Some of the other rival schools of chiropractic followed the Palmer definition for the term subluxation. Joy Loban writes in his textbook:

A vertebral subluxation is a displacement, less than a dislocation, in which the chief element is the partial loss of normal apposition of the articular surfaces of the subluxated vertebra with those of the vertebra above or below, or both. Or, Vertebral subluxation is a permanent partial dislocation.8

DD Palmer stated at that time that the medical profession recognized the entity of subluxation but gave it “little credence.” He also complained that the osteopathic profession had been using the term in a manner not to his liking. He states:

This form of sub-luxation, is as yet, given little credence by the medical profession. Since 1895, osteopathy has been purloining this idea, even to the extent of copying paragraphs of especially phrased material of The P. S. C. to write articles about them as the cause of disease. And yet, the same paragraph will tell how anemia is caused by bad, diseased blood. A slight comprehension of that which they are trying to make a leader of proves the incompetency to grasp its import in practice.1

The osteopathic profession had also been using the term subluxation as a means of describing the entity to which they directed their osteopathic manipulations. The osteopathic profession published their works in texts and in journal form years before chiropractic, likely because osteopathy had a head start in that this profession was founded in 1974. The earliest osteopathic journal aimed at professional audiences began around 1894, whereas Solon Langworthy's Backbone (the first chiropractic equivalent publication) was not printed until 1903 (Fig 5). Earlier chiropractic publications existed, mainly published by DD Palmer; but these publications were directed at patient and student recruitment, including testimonials and sales pitches.

Osteopathic descriptions of vertebral subluxation can be found in various publications at the turn of the century. The term was commonly used in osteopathic literature and included points of clarification as to what the term meant.
This is in spite of the fact that no scientific research had been performed by any profession at that point in time to support these claims. For example, Hinckle (a medical doctor) describes the osteopathic use of the term:

Let us first understand what the osteopath means by a subluxation. A subluxation is usually defined as a partial or incomplete dislocation. While this is true it does not always convey the same idea to all physicians. Every movable articular surface has some position in which the muscles, ligaments, blood-vessels, nerves, synovial membrane and other tissues connected therewith are free from abnormal tension, pressure, and irritation. All the various positions from the slightest deviation from this normal to the point of complete dislocation are but varying degrees of subluxations. Any deviation from this normal position will produce tension, pressure and irritation of the tissues involved. Such deviations are therefore limited both as to degree of motion possible, and degree of time that this motion may be maintained without serious damage to the part.

Often, the description of subluxation was used in advertisements to explain the aim of adjustments or manipulations. These announcements attempted to explain the theories behind the practice of spinal manipulation, the principles behind sickness and disease, and the path to restoration of health. In addition to using the term for patient recruitment, chiropractors and osteopaths were fighting to establish professional ground through the legal realm; often, the term played a role in establishing legitimacy.

Fig 6A shows a typical chiropractic advertisement of the day. Fig 6B shows an osteopathic advertisement, which is strikingly similar. Each provides an example using the bone out of place theory in which it appears as if a bone has “slipped out” of normal position. The chiropractic patient recruitment pamphlet states that “Chiropractors do nothing but adjust the subluxated vertebrae with the hands, for the purpose of releasing the imprisoned functional impulse.” The osteopathic patient recruitment pamphlet suggests that the purpose of the osteopathic treatment, through structural readjustment, is to remove the restriction to the nerve supply and therefore allow the body forces to regain full health. Neither of these theories had anything more than subjective evidence on which to be based. As can be seen in the comparison of Fig 6A and B, chiropractors and osteopaths promoted nearly identical concepts of subluxation at that time.

Although chiropractors and osteopaths argued over which group held the accurate meaning of the term and principle of subluxation, the medical profession, on the other hand, did not look at this term with the same reverence. To better understand the medical profession’s negative reaction to manipulation of a vertebral subluxation, one must review the standard medical definition for this term. As it had been used for decades, the term vertebral subluxation in medical practice referred to a traumatic partial dislocation of the spine. When referring to a vertebral subluxation, it was...
understood by medical practitioners that there was damage to soft tissue structures; blood vessels and spinal cord would likely be compromised, which could possibly result in death. A surgical text from 1904 shows diagrams (Fig 7) and describes vertebral luxation and subluxation as follows:

**Distortion of the Vertebral Articulation.**—This injury may be produced by a direct blow upon the neck and rarely by muscular action. The most common cause is a fall on the head, which is followed by forced extension or flexion. Forced flexion is associated with anterior displacement of the upper vertebrae and is frequently associated with dislocation. As long as the continuity of the bodies of the vertebrae and their ligaments is preserved, overextension may simply produce distortion. (Kocher.) If extension is associated with torsion, the joint is more affected on the side to which the face is turned. Unilateral distortion results. With flexion and rotation, on the other hand, the opposite joint suffers the greatest amount of damage.... The term dislocation will be applied to those cases in which the articular processes are hooked over each other, whereas the term subluxation will be applied to those cases in which there is only partial dislocation. Both varieties may occur on one or both sides.  

As described in medical journals, luxations or subluxations were the result of trauma in which considerable damage was done to the spine. The following is a description by Dunn from a 1901 article published in the Northwestern Lancet:

The bony column which serves in part to protect the cord is composed in reality of two columns, in front a large one formed by the bodies and intervertebral discs, behind by the lesser columns on either side formed by the articular processes. In partial lesions one or the other of these columns remains intact, while in total lesions the spine is severed in two distinct portions. In the former class of injuries, the cord is likely to be less seriously disorganized, and the tendency to displacement is vastly less than in the second.

**Fig 7.** Image from the 1904 surgical textbook by von Bergmann E and von Bruns showing subluxation (partial dislocation of the vertebra) and luxation (full dislocation).  

Partial vertebral lesions may be further classified as follows:  
- a. Subluxations, and isolated luxations of the articular processes, unilateral or bilateral.  
- b. Contusions and isolated fractures of the vertebral bodies (compression fractures).  
- c. Isolated fractures of the laminae and spines.

**Fig 8.** Portrait of DD Palmer, founder of the chiropractic profession.

Total vertebral lesions are thus classified:  
- a. Total luxations, i.e., of articular processes and of the body from intervertebral substance.  
- b. Luxation compression fractures, i.e., dislocation of one or both articular processes, and compression fracture of the vertebral body with relatively slight displacement, as the body in large measure retains its continuity.  
- c. Total luxation fracture, and oblique luxation fracture, i.e., dislocation of articular processes and displacement of the fractured body. Two or more vertebrae are often involved, and the line of fracture, though usually running from above downwards and forwards, is sometimes oblique from side to side. In the former case the upper fragment of the column is displaced downwards and forwards; in the latter case the displacement is lateral.

Total luxation fracture is a further stage of the simple compression fracture from similar but greater force.
Use of subluxation in the formative years of chiropractic

From the medical viewpoint, adjusting or manipulating luxated bones was nonsensical; and this concept was often attacked in medical publications.

We are going to treat a new bunch of quacks to a little free advertising. If this notice should do them any good, we apologise—it was unintentional. The newest claimant to quack notoriety is one D. D. Palmer, who sets forth his titles and his “system” in the advertising columns of the Medical Brief. His system is termed chiropractic, which we are told means handfixing—not the removal of hangnails, or subungual alluvial deposits, but the replacing, fixing, adjusting, repointing, repairing (not to mention regretting—on the part of the patients) of luxated bones which have so pinched the “nerves of innervation,” or “innate” nerves as to cause the greatest possible disturbance in that synthetic conception somewhat airily termed “the system.”

Publications in the medical literature discredited the use of finding and treating subluxations as quackery. This article published in the Journal of the American Medical Association criticizes the lack of educational training.

The “graduates” of this “school” do not need any special training in anatomy, physiology or therapeutics, as the whole system is summed up in one proposition: all diseases are due to the displacement of bones and consequent pressure on nerves and other tissues. The summary of treatment is simplicity itself: reduction cures. There are two kinds of disease: 1. one from displaced bones of the extremities, causing deformities, pain, etc.; 2. the other, dislocation of some of the vertebrae, giving rise to trunkal diseases. But the same treatment cures all. The stock of knowledge, therefore, consists in the knack of manipulation, with perhaps an element of hypnotism—certainly a large amount of suggestion.

The “school” that the above author was referring to was not a chiropractic school, but an osteopathic one, the American School of Osteopathy in Kirksville, MO.

Another example of a medical citation describing the osteopathic use of the term vertebral subluxation was written in a similar tone. This description denounces the type of health care practice and calls to light the lack of proper diagnosis for the condition the osteopaths were attempting to treat using spinal manipulation. The author writes:

Recently a Western contemporary related a striking instance of the dangers arising to the community from the practice of this fad. Two osteopaths were called to attend a child suffering with an acute eruptive disease. They diagnosed the case in their usual manner as being one of a “vertebral subluxation”, and rolling up their sleeves commenced at once their massaging to replace the partially dislocated bones and nerves of the child’s vertebral column. The child did not improve, of course, and soon other members of the household and neighborhood were stricken with the same affliction. In due time the osteopaths themselves were attacked and prostrated with this highly infectious vertebral dislocation, which unfortunately for them and for the whole innocent community was not a dislocation at all, but smallpox.

Another medical author showed similar disdain, viewing chiropractic and osteopathy as having the same directive and stating that chiropractors “use the limbs as levers—manipulate muscles and overcome tension and right subluxations as do the osteopaths. There is no more reason for the existence of chiropractic and osteopathy as distinct methods of treatment than an Episcopal Methodist and a Free Methodist in religious sects.”

In the era preceding Flexner’s report, tension was building between the “regular” (ie, medicine) and “irregular” (ie, eclectics, homeopathy, chiropractic, osteopathy, etc) health care practitioners. An increasing number of battles filled the courts as each profession battled to establish legitimacy and the right to practice. Citations throughout medical journals expressed concern for other types of practitioners and questioned boards of examiners to address this issue.

The cities are filling with quacks and charlatans. Their advertisements fill the newspapers, and their signs insult the community on every corner. The cancer specialist plies his nefarious trade undisturbed. The traveling fakir goes from town to town without hindrance. The “chiropractic” doctors vie with the osteopaths in setting our vertebrae in line. Every year a new school of practice is born and prepares to assail the legislature for a separate examining board. It can be truthfully said that never before, either previous to or since the establishment of our board of examiners, has the state been so over-run with illegal practitioners. That is why we ask, what is the matter.

As for the use of subluxation in the chiropractic profession, not even the founder provided consistent use of the term. Throughout DD Palmer’s writings, he would sometimes use the term luxation when referring to the entity to which he applied the chiropractic adjustment. When referring to the first chiropractic adjustment, DD Palmer states:

Since relieving Mr. Lillard of deafness, I have learned that this affection may be caused by luxation of other vertebrae. In some persons a prenatal effect, which cannot be improved by adjustment.

Elsewhere, he writes:

A Chiropractic luxation is a partial separation of two articular surfaces, which are readily replaced by the hands of a Chiropractor.

And again he uses the term luxation when describing the entity to which the chiropractor would provide hand adjustments:

D. D. Palmer has placed this much disputed question under the light of the midday sun. He has developed a
well defined science that has no resemblance whatever to any therapeutical method. In fact, it is not therapeutical. The luxated vertebrae are replaced by hand adjustments, these unique movements being unlike those used by any other school. The Chiropractor adjusts any one or all of the 300 articular joints of the human body, but more especially the 51 of the spinal column. They use the long bones as fulcrums, and levers to replace their luxated joints. When adjusting vertebrae, the processes are used. There is a wide difference in the opinions of the above writers on spinal luxation.1

However, DD Palmer (Fig 8) was not the only chiropractor to use the terms *vertebral subluxation* and *vertebral luxation* interchangeably. Langworthy included similar terminology in his article “Is Chiropractic a Fad?” stating:

Disease, which is the result of vertebral luxation, may manifest itself several feet away from the point of interference. This is accounted for by the fact that pressure upon any nerve trunk results in abnormal action at the end of the nerves. For example, a luxation pressing upon certain lumbar nerves may be the cause of rheumatic pains in the feet. While pressure upon certain other nerves of different length in the same region may result in lumbago or pain in the lower back. The difference in the two diseases is simply the difference in the length of the nerves involved. It will thus also be seen that a vertebral luxation may cause disease in a distant organ without necessarily producing pain at the point of pressure.23

As most learned health professionals would likely agree, a truly dislocated (ie, luxated) spine would be the result of substantial trauma and would likely not benefit from additional force or thrust from any sort of practitioner. Thus, it would be reasonable to assume that medical practitioners at the turn of the century who read the writings of chiropractors such as DD Palmer or those of osteopaths would be suspect that anyone should be applying manipulative forces to luxated spines and that this type of treatment would benefit the patient in any manner. It seems as if DD Palmer’s enthusiasm for writing, and possible lack of clarity of use and definition of various terms, may have added to confusion and provided an easy target for medicolegal attacks.

The purported theory that adjusting subluxations would bring health was not based upon research and science because the infrastructure was not yet in place by which to carry out legitimate research on the relationships between subluxation and disease. Unfortunately, at the time, the ideas underpinning the concept of subluxation were only based on theory and not classic research methods, including experimental designs.24,25 Although theory is essential, one must investigate concepts by providing data to substantiate the claims being made. It would be many decades later before the chiropractic profession would have enough resources to address this issue. The timing could not have been more perfect to cripple investigative efforts because the chiropractic profession was heading into the center of a legal storm and cultural changes that drained resources away from the profession. Some have criticized the chiropractic profession for the creation of new terms when already existing terms would suffice. But, in this case, it may have been better to have developed a unique term instead of borrowing from the medical vocabulary to establish a truly unique identity. As is often done during a period of cultural change, similar symbols or terms are borrowed and then modified as a new way of thinking takes place. The term *subluxation* may have been selected because it was a term already in existence in the medical lexicon and thus familiar to others. Although it was likely the closest medical term existing at that time, the use of the term led to controversy in the medical profession. I suggest that the term *subluxation* was poorly borrowed from the medical profession and may have caused more harm than good for the chiropractic profession based upon the resulting confusion and apparent misuse. It is possible that there would have been fewer misunderstandings if a new term was developed as the chiropractic profession established its legitimacy; however, we will never know for certain. At present, the chiropractic profession still struggles to face its identity, either with or without this term that has so many different meanings.

**Conclusion**

According to publications at the turn of the century, chiropractors were not the only ones using the term *subluxation* to distinguish themselves as a distinct profession; nor were they the only ones to use the term as a unique identifier for the methods in which they attempted to assist patients to achieve better health. Thus, use of the term *subluxation* (ie, a bone/joint entity causing nerve interference that was adjusted to restore health) was not unique to chiropractic. This term has drawn contention throughout the profession’s history, which continues to the present day.

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