Axioms, Osteopathic Culture, and a Perspective From Geriatric Medicine

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Osteopathic medicine is a rapidly growing discipline in health care that has much to offer the wider biomedical community. A distinction of the osteopathic medical profession is the importance of an overall guiding philosophy. Despite the osteopathic medical profession's success, there remains concern about the profession's ability to maintain its unique identity. Among many factors that have contributed to the profession's success, certain axioms from its earliest days are pertinent to the profession's identity. Maintaining a knowledge and appreciation of osteopathic axioms can play an important role in safeguarding the profession's identity. These axioms encapsulate osteopathic philosophy and, moreover, are universally useful for patient care. As osteopathic geriatricians, the authors explore the value and meaning of these axioms for anyone who treats patients, but especially for the care of the elderly. The authors also propose a new axiom, derived from the experience of 2 of the authors: "First try to blame it on the medications."

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An *axiom* is a maxim widely accepted on its intrinsic merit. It sums up an established rule, principle, or self-evident truth. Similar terms for it include *adage*, *aphorism*, *epigram*, *truism*, and *precept*. Axioms have a general universal and timeless appeal and are especially pertinent to the osteopathic medical profession's culture and history. Carol Trowbridge, biographer of Andrew Taylor Still, MD, DO, observed[1(pp164-165)]:

> The art of osteopathy can be found in Still's individualized patient oriented approach. Still could never bring himself to formulate a manual of osteopathic technique, insisting every case was unique. This individualized approach meant an overall guiding philosophy was highly important, so Still sought to make each osteopath a self-generating philosopher.

To teach his philosophy, Still frequently used easy-to-remember axioms to convey his ideas about patient care. From Still's time until now, osteopathic physicians have followed in this tradition, so much so that axioms are an important aspect of the profession's culture and identity. In the present article, we explore several osteopathic axioms and propose a new axiom based on our (D.R.N.'s and T.A.C.'s) background in geriatric medicine.

Each osteopathic axiom expresses a general principle about patient care. However, this discussion is not meant to be a reinterpretation of the 4 tenets of osteopathic medicine, first formulated in 1953: (1) the body is a unit, (2) the body possesses self-regulatory mechanisms, (3) structure and function are reciprocally interrelated, and

(4) rational therapy is based upon an understanding of body unity, self-regulatory mechanisms, and the interrelationship of structure and function.[2] The axioms discussed are informed by these principles, but it is beyond the scope of the present article to discuss in detail how they relate to each axiom. A few connections are made, but the primary focus is on the axioms themselves, their meanings, and their place in the osteopathic profession's culture and identity.

Find It, Fix It, and Leave It Alone

Although Still may have never written down the exact phrase "Find it, fix it, and leave it alone," he clearly spoke it, and his contemporaries considered this axiom to be important. Ernest Eckford Tucker, DO, who was an early student at the American School of Osteopathy (ASO), referred to "Find it, fix it, and leave it alone" as one of Still's frequently used epigrams.[3] M.A. Lane, professor of pathology at ASO, said it was Still's "well worn axiom."[4(p24)] W.J. Conner, DO—a close friend of Still's—said of this axiom, "we worked by that rule all the time."[5(p338)] This axiom was so strongly associated with Still that a 1909 Kirksville postcard bears a drawing of him alongside it (*Figure*). Also of note, Still writes in his autobiography something very similar[6(p228)]:

> When you know the difference between normal and the abnormal you have learned the all-absorbing first question, that you must take your abnormal case to the normal, lay it down, and be satisfied to leave it.

A recurrent theme throughout Still's writings is the importance of finding the underlying cause for the presenting problem. Still was critical of treatment based on the signs and symptoms of diseases, which he equated to guesswork and viewed symptoms as effects rather than causes. Treating symptoms does not mean the cause has been addressed.[7(p233)] He also called drug treatment of this time a "system of blind guess-work."[8(p15)] For Still, the underlying cause of disease was usually found in abnormal structures within the musculoskeletal system. He believed that the cause of disease could be found in a slight anatomic deviation from normal presentation, even an anatomic deviation as small as "the thousandth of an inch."[7(p18)] An overriding theme in his writings was the importance of identifying the cause, looking for the cause, searching for the cause, wherever these actions may lead. By "find it," he meant find the cause. Still wrote that each student should "think before he acts, to reason for and hunt for the cause in all cases before he treats; for on his ability to find the cause depends his success in relieving and curing the afflicted."[7(p11)]

Figure.
A 1909 postcard from Kirksville, Missouri, depicts the axiom that Andrew Taylor Still, MD, DO, frequently used. Reprinted with permission from the Postcard Collection at the Museum of Osteopathic Medicine.

Charles E. Still Jr, DO (grandson of Andrew Taylor Still), wrote of his grandfather[9(pp198-199)]:

> He often repeated his belief that if there was an abnormality it was essential to find the problem, fix it, and then leave it alone. He couldn't tolerate mindless routine manipulative procedures. On one occasion his eldest son, Dr. Charley, had given a treatment to an overweight woman. The whole treatment appeared superficial to Andrew. It seemed to him that Dr. Charley had made no attempt to reach the cause of her problem. Andrew suggested in no uncertain terms that "promiscuous pummeling" would be of little value to this patient or to any other patient.

Andrew Taylor Still's primary objection was that the cause was not addressed by the treatment, and that "fix it" means fix the cause. By saying "fix it," the axiom also suggests indirectly that structure affects function: if you fix the structure, then you fix the problem.

The third part of the axiom—"leave it alone"—has several implications. By saying "leave it alone," there is an implication that the body has an inherent ability to heal itself and that, when the underlying problem is fixed, the body will complete the process. Conner described an episode in which his brother David injured his right foot by jumping from the top of a wagon.[5(pp337-338)] The foot developed a chronic infection, which continued all winter. By May, the foot had multiple draining abscesses. Because David lived in another county, the family put him on the back of a wagon and drove him to Kirksville to be treated by Still. After only 1 treatment session, Still told David to go home because the foot would soon be all right. Conner wrote[5(p338)]:

> In a very few weeks every wound in his foot was healed and he threw away the crutches which he was using…. I mention this incident to show how positive in his work Dr. Still was. He knew he had fixed the structural difficulties which were interfering with circulation and nerve force in David's foot. The greatest axiom Dr. Still ever gave the world was, "Find it, fix it, and let it alone."

One story highlights how deeply Still felt about treating with precision. Still befriended a student who was unable to afford school. Still mentored the student, meeting with him weekly and paying for his room and board. During the student's final term, Still observed as the student treated a man with limited use of his left leg. Hoping to impress his benefactor, the student "manipulated the poor fellow from stem to stern, from port to starboard, and back again." This prompted an angry reaction from Still, who told the student he had not learned anything about osteopathy, that he was ashamed of the student, and that he might even not permit the student's graduation. Still then set the patient up for a manipulative maneuver and with one swift thrust caused a resounding *pop* and enabled the patient to walk away without a limp or pain.[5(pp418-420)]

The phrase "leave it alone" also warns against overtreatment. Hildreth stated that the reasoning behind this part of the axiom was "if treatment was given too soon after the correction of a lesion, the tissue was apt to be traumatized and the disturbance would be worse than before the treatment."[5(p92)] Consistent with this interpretation, Lane[4(pp24-25)] stated that the last 3 words are the heart of the axiom. To Lane, "leave it alone" did not mean to avoid touching the patient again after the first treatment. It meant that after a lesion is corrected, nature will do the subsequent work of obviating the need for frequent treatments. Lane also believed "leave it alone" was a "vigorous protest" against the drug treatments of Still's era,[4(p25)] which were often harmful. For example, a pocket medical formulary published in 1929 listed many dubious treatments for pneumonia and includes adrenaline, bloodletting, strychnine, digitalis, belladonna, ergot, creosote carbonate, quinine, and iron.[10(pp245-245b)] The practice of avoiding dubious drug therapies may help explain why early osteopaths were so successful.

Another facet of "Find it, fix it, and leave it alone" is that the phrase taken as a whole describes a process for patient care, a subject about which Still thought deeply. "Find it, fix it, and leave it alone" describes what we will

call the “universal practice template.” Consciously or not, every health care practitioner in every discipline around the world tends to follow this universal practice template or pathway when he or she treats patients. Every patient encounter follows the same general pattern; the patient presents with a problem, the practitioner makes an assessment or diagnosis, a treatment is developed, and a therapeutic trial ensues. Find the problem, fix the problem, and then leave the problem alone long enough for an adequate therapeutic trial. Keeping the universal practice template in mind provides focus for the patient encounter.

Although the template seems obvious, failure to adhere to it leads to inferior outcomes. Trying to fix a patient’s illness without correctly finding the right diagnosis means the intervention will likely fail. An intervention can fail through overtreatment or fail through inadequate therapeutic trial duration, such as switching an antibiotic or antidepressant before the full therapeutic effect can be achieved. Another way in which treatments fail is by hanging onto an ineffective treatment plan for too long. Therefore, knowing the proper therapeutic trial duration for each intervention is very important. The optimal therapeutic trial many range from seconds to months.

The issue of over- and undertreatment is particularly important in the elderly population, especially in those who are frail and older than 85 years. The physiologic reserve capacity of multiple body systems are often reduced as a result of normal aging and chronic disease. Fixable problems can be difficult to identify among a confusing mix of chronic diseases and atypical presentations. When a fixable problem is identified, physicians should carefully weigh the benefits and risks of the intervention. Undertreatment is suboptimal because it is unlikely to correct the problem, and as physicians we want to help the patient. Overtreatment is problematic because frail body systems are unforgiving of errors in treatment intensity and adverse events. One adverse drug event can lead to a cascade of organ system failures, and recovery is slower and harder to achieve. For these reasons, using this axiom with precision is especially advantageous for elderly patients. At times, the potential benefit of fixing it will not be worth the risk. It takes great clinical judgment to know just when to leave it alone.

You Treat What You Find

“You treat what you find” is a lesser-known axiom from Still. It was Still’s habit to teach through lectures highlighted by colorful analogies and dramatic illustrations. Tucker[3] recalled one of these lectures, during which Still began by telling the class he was going to draw a pig on the blackboard. In good humor, with chuckles from him and chuckles reciprocated from the class, he drew something like a pig, but it soon developed a long neck and two long legs and a fanlike tail. He turned back to the class, chuckled again, and the class chuckled back. Suddenly, his mood changed; he drew himself up and demanded, “How many of you diagnosed a pig?” He threw down the chalk, paused for effect, then continued[3(p33-35)]:

> You read in your text books that pneumonia is such and such and so and so. Maybe it is. But you look for yourselves, according to osteopathic teachings, and see everything, not just what the book says. I never fail to find, and my graduates never fail to find, such and such a condition in the body. It is a turkey, not a pig. You will never find it if you never look for it; but if you look for it you will find it. If you treat that case according to what the book says, you will get the result that the book promises, which is not much. If you treat what you find as osteopathic physicians you should be able to cure your cases. What is osteopathy? You exam the body; as an engineer; and the body itself shows you what to do, what needs to be done. You treat what you find.

This account conveys skepticism toward accepted conventions. Still had good reason to be skeptical of the treatments prescribed in the medical textbooks of his day. In this particular account, he refers to textbook treatments of pneumonia, which—as previously mentioned—were of dubious value.[10(p245-245b)] Even in this day

of modern evidence-based medicine, skepticism toward accepted medical practices has a constructive role when expressed as a critical examination of the medical literature. This attitude of skepticism was discussed in the classic editorial by Sackett et al,[11] who described what evidence-based medicine is and what it is not. The authors define evidenced-based medicine as the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. Inherent to evidence-based philosophy is the principle of evaluating the medical literature critically—with skepticism—and then of applying the best evidence judiciously to fit the individual. Sackett et al[11] took the position that external clinical evidence can inform, but can never replace, individual clinical expertise. It is this expertise that determines whether the external evidence applies to the individual patient.[11] In this sense, "You treat what you find" is complementary to evidence-based medicine philosophy because the axiom represents an admonishment to apply what you know to the conditions you find in an individual patient. This sentiment is expressed elsewhere in Still's writings. "You must reason, I say reason, or you will finally fail in all enterprises. Form your own opinions, select all the facts you can obtain. Compare, decide, then act. Use no man's opinions; accept his works only."[7(p147)]

The axiom also stresses the need to keep an open mind about the diagnosis and not be unduly biased by the authority of the previous diagnosis. The patient's past medical history is of great value, and a previous diagnosis given by another health care practitioner is likely to be correct. However, previous diagnostic labels can be incorrect, which is important because treatment based on an incorrect diagnosis will lead to suboptimal treatment. There are barriers between physicians and other health care practitioners to revising a previous diagnosis. For example, a primary care physician can be reluctant to challenge a diagnosis given by a specialist, especially if it falls within the specialist's area of expertise. Likewise, specialists may uncritically accept a previous diagnosis, especially if it falls outside their area of expertise. Physicians who are still in postgraduate training and who are given the task of completing hospital admission orders can be reluctant to deviate from a diagnosis given by others, even when the clinical picture clearly shows something else. Reluctance and caution toward reassessing an established diagnosis is appropriate. However, clinical conditions are constantly changing, new information comes to light, and initial assessments are not always correct. Every physician and health care professional needs to recognize when the pig has morphed into a turkey.

Another concept implied by "You treat what you find" is that if you do not look for it, you will never find it. In other words, interview the patient yourself, examine the patient yourself, look at the medication list yourself, and look at the laboratory findings and other test results yourself. If a specific condition comes to mind for a differential diagnosis, then it is generally a good idea to either confirm or rule out that condition. You treat what you find, and the findings will show you how to treat.

The axiom "You treat what you find" is especially useful in elderly patients because atypical presentations of disease are common.[12-14] A fever may be absent during an infection, or an acute coronary event can manifest as acute confusion rather than chest pain. Textbook presentations are less common as a patient reaches an advanced age and comorbid conditions complicate the clinical picture.

If You Talk With Your Patients Long Enough, They Will Tell You What Is Wrong With Them

Although there is little evidence that he actually said it, Sir William Osler is widely credited with the aphorism "Listen to the patient. He is telling you the diagnosis."[15] The osteopathic version, or at least the version most familiar to us, appears to be "If you talk to your patients long enough, they will tell you what is wrong with them." The latter axiom was so frequently used by Max T. Gutensohn, DO, and so fondly recalled by his students that it has become part of the profession's heritage.

Although the central idea is the same in both versions, like many things allopathic vs osteopathic there are subtle distinctions. The former stresses passive listening, while the latter stresses conversation between the physician and the patient.

Gutensohn was a faculty member at the Kirksville College of Osteopathic Medicine, coauthor of the 1953 osteopathic concept statement,[2] president of the American College of Osteopathic Internists, chair of the American Osteopathic Association Research Bureau, and interim president of the college in Kirksville, and he had a long career as an internist. His reputation as a diagnostician within the osteopathic medical profession was legendary. Toward the end of his long career he was asked about his legendary diagnostic abilities. His response is the best explanation of the axiom and a window into osteopathic culture[16(pp18-19)]:

> Part of it is the osteopathic approach. You learn how to touch people and to let them tell you what is wrong. I found out about a patient's family as quick as I could. I always had the feeling that if I could talk to patients long enough, they would tell me what was wrong with them. I firmly believe your mind knows what's wrong.
>
> I loved diagnosing. I had to read a lot because I was teaching. I had to read to keep up to date, and that just naturally fell in with diagnosis. I always got along with patients very well. After a while, I found out that somehow, seemingly, they would be talking along, and all of a sudden it would come to my mind "I know what is wrong with them." I just think what they said rang a bell in my knowledge.
>
> [Once,] I asked the patient [who had been evaluated at several prominent psychiatric hospitals and was given the diagnosis of anxiety] if there was anything that had ever happened to her that no one had ever asked her a question about. She said, "My urine turns brown." Well, I had the diagnosis. She had porphyria. That wasn't any great acumen of mine. She told me.

We highlight a few of Gutensohn's statements. He said, "Part of it is the Osteopathic approach. You learn how to touch people and let them tell you what is wrong." Touch conveys a wide range of diagnostic information through the tactile senses, and it strengthens the patient-physician relationship. Learning to listen is the key to letting the patients tell you what is wrong. The axiom implies that learning how to touch and learning how to listen to the patient are what a student can learn at an osteopathic medical school. Gutensohn's description of the osteopathic approach encapsulates osteopathic culture and values, handed down to Gutensohn, and now passed along to contemporary osteopathic trainees and physicians. The axiom also makes a good recruitment tool for osteopathic medical schools. What can be learned at an osteopathic school that is distinctively different from an allopathic school? The student can learn "how to touch people and let them tell you what is wrong."

Gutensohn also alluded to the need for a diagnostician to have a strong medical knowledge base. He linked having a strong medical knowledge base to being a good diagnostician. Because he was teaching, he had to keep up to date on medical literature, and this prowess in learning "naturally fell in with diagnosis." A strong medical knowledge base requires being a disciplined reader, having self-motivation, and keeping up to date with the current medical literature. The inference is clear: knowledge has to be there for the "bell to ring."

Gutensohn said that he "always got along with patients very well" and "found out about a patient's family as quick as I could." A rapport with a patient means much more than obtaining a good family history. Getting to know the patient as a person, having a conversation, and getting a patient to feel comfortable are important for affirming the axiom's strongest idea: that when a physician's manner puts a patient at ease, then a patient's sense of his or her own body can be a guide to an accurate diagnosis.

First Try to Blame It on the Medications

We propose a new axiom pertinent to the care of the elderly: "First try to blame it on the medications." The

longer version would be "When a patient presents with a new complaint, first try to blame it on the medications because you will often be right." Obviously, medications are not the cause for every complaint, but adverse drug reactions, drug-drug interactions, and drug-disease interactions are very common. As part of the medical history, the medication list should be carefully reviewed. Considering each medication and its potential harms and interactions is a rewarding exercise. The medication list is fertile ground for discovering the cause, or at least finding contributory factors and risks, of the patient's condition. Searching the medication list is also cost-effective. Before ordering expensive diagnostic tests, first try to blame the medications.

Polypharmacy is common in older adults because of multiple comorbidities, multiple treating health care professionals, and multiple drugs available to treat various diseases.[17,18] However, definitions of *polypharmacy* vary greatly. It has been defined alternately as concurrent use of many different medications,[17] an excess number of inappropriate drugs,[19] or concurrent use of 3, 5, or even 10 medications.[20] In 2012, Gnjidic et al[19] found that approximately 5 or more concomitant medications is a good discriminating number to identify older men at risk for medication-related frailty, disability, mortality, and falls.

Because there is great variability to how older individuals respond to medications, it is often difficult to recognize adverse drug events.[19] Complicating the picture, patients with multiple morbidities and medications present with overlapping symptoms. Although sometimes helpful, the proximity to starting a new medication does not always correlate with the onset of an adverse drug event. Intolerance to a medication can develop many years after its initial use because of the physiologic effects of aging. A prescription cascade occurs when an adverse drug reaction is misinterpreted as a new medical condition, triggering the prescription of another medication.[21]

One example of such an occurrence is the prescription of amlodipine for hypertension. The patient later develops peripheral leg edema, and furosemide may be prescribed to manage the leg edema. Later, a potassium supplement is added to manage hypokalemia associated with the furosemide. Then the patient gets heartburn from the potassium supplement, so a proton pump inhibitor is prescribed. The medication cascade can be avoided by switching to another class of antihypertensive agents rather than adding a medication to manage an adverse event of the initial medication.[22] The utility of the axiom is that it reminds the physician of a productive area to start to look for diagnostic answers. It is as Still said: "You will never find it if you never look for it."[3(p35)]

At the present time, the osteopathic profession is experiencing exponential growth. The *2012 Osteopathic Medical Profession Report*[23] indicated that between 1935 and 1975, the profession grew from approximately 8000 to 12,000 osteopathic physicians in the United States.[23] Thus, it took the profession 40 years to grow by approximately 4000 osteopathic physicians. Today, the osteopathic profession in the United States grows by more than 4700 osteopathic physicians every year, and the rate of growth is only accelerating with the addition of new colleges of osteopathic medicine. In 2012, including new graduates, there were more than 82,500 practicing osteopathic physicians in the United States. These data should both please and alarm every osteopathic physician. Will we be able to sustain a distinctive culture in the face of such explosive growth? In 1 small study, Carey et al[24] evaluated a sample of 54 office visits and used a 26-item list to compare the actions of 11 osteopathic physicians with those of 7 allopathic physicians. The videotaped patient encounters were scored in a blinded fashion. The results showed that the osteopathic physicians were more likely to discuss the patient's emotional state, to use the patient's first name, to discuss health issues in relation to social activities and family life, and to discuss preventive measures specific to the complaint.[24] The investigators concluded that osteopathic physicians seem to have a distinctive communication style. Draper et al[25] showed that the decision to study at an osteopathic medical

school by prospective students is strongly associated with the level of agreement with osteopathic philosophy and the intention to use osteopathic manipulative treatment in future practice. Although these findings are encouraging, the challenges facing the osteopathic profession remain.

Conclusion

There are many other osteopathic-related axioms we could discuss. The profession's past is particularly rich in axioms and other types of wise sayings intended to communicate concepts of patient care. Taken together they contribute to the osteopathic medical profession's distinctiveness and its contribution to the wider biomedical community. Remembering our heritage through axioms is 1 way to ensure that the profession's culture is passed on to the next generation and that the profession's distinctive contributions to health care are sustained.

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