The Angle Classification, Does it Mean Anything to Orthodontists Today?*

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Sound reasoning, for successful accomplishment, is based upon fundamental facts. These facts become basic principles as they prove their value in the solution of problems. As basic principles become systematized and applicable a science is evolved. Dr. Weinberger, in his history of orthodontia, tells us that "Many, before Fauchard wrote concerning irregularities of the teeth and their correction—. However, the first important device that marks a distinctive step was described by him in 1723." Thus at this early date facts regarding orthodontia were being established. Additional material was contributed by Bourdet (1757), Hunter (1771), Fox (1803), Delabarre (1819), Schange (1841), Harris (1850), Farrar (1888) and many others. These various contributions, however, remained dissociated and chaotic until Dr. Edward H. Angle, in 1889, began to systematize them. In this manner basic facts regarding orthodontia became basic principles and much new data was made apparent. Ten years later, in March 1899, the Dental Cosmos published Dr. Angle's Classification of Malocclusion. It is generally recognized that as a result of this great contribution, together with the fundament of normal occlusion, which he also taught, orthodontia became a science and Dr. Angle the founder of scientific orthodontia.

Although Dr. Angle's Seventh Edition contains the full content of his classification, the original presentation seems, at least to me, somewhat more comprehensive. This essay consists of some thirty pages and is worthy of the most careful and intensive study. It contains the Angle Classification and the principles leading to its consummation. It should be read in its entirety, to be appreciated and Dr. Weinberger expresses my sentiments when he states, "fearing that injustice might be done same by reviewing or extracting parts, the author advises his readers to review the article in the above mentioned journal." However, I will quote parts of that portion entitled "Classification of Malocclusion," to again familiarize you with it and, also because I wish to use it in support of my title. Dr. Angle says,

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"In reality all cases of malocclusion may be as readily arranged in well defined classes as plants, animals, or the elements; and by thoroughly mastering the distinguishing characteristics of occlusion and of the facial lines peculiar to each class, the diagnosis of any given case is greatly simplified—. In diagnosing cases of malocclusion we must consider first, *the mesio-distal relations of the dental arches;* second, the individual positions of the teeth. In what is said upon diagnosis and the classification which follows, *for convenience,* two points have been selected, from which to note variations from normal in the arches. These points are indicated by dark lines in the engravings, which show the normal relations of the cuspids and mesio-buccal cusp of the upper first molar with the buccal groove of the lower first molar." The next portion of the text, I believe, answers many of the criticisms of this classification, if properly interpreted. It reads as follows: "Of course, in determining the mesio-distal variations ALL of the teeth are to be taken into consideration, but the points indicated have long been favorites with the author in beginning the diagnosis of cases, for the reason that the first molars and cuspids are far more reliable points from which to judge, owing to the fact that they are found to occupy NORMAL positions far more often than any of the other teeth, the molars being less restrained in taking their positions, while the cuspids, owing to their history and great size, force their way usually to relatively normal positions in their arches." In regard to the above may I say that the facial lines and skull anatomy must not be forgotten at this time and that the axial inclinations of the teeth, mesio-distally, must be considered. Dr. Strang considers the apical position of the upper cuspids as quite constant for calculations in most cases. His reasons, as taken from his "Textbook of Orthodontia," are:

1. That the apical third of this root is situated in fairly dense bone and is so deeply placed that perverted facial muscles are not so apt to effect displacement.

2. That its late erruption prevents disturbing environmental forces from acting upon it over a long period of time.

3. That being the longest of the tooth roots it more strenuously resists displacement and that this tooth tends to seek its rightful place to the extent of displacing the proximal teeth.

4. That the crown of this tooth is of such shape that perverted forces of occlusion and mastication are not as detrimental in effecting the displacement of this portion of the root as in the case of the molars and premolars.

The tabulated classes of the original Angle Classification, in somewhat different wording than that found in the later versions, is as follows:

CLASS I

"Relative relation of the dental arches, mesio-distally, normal, with malocclusion usually confined to the anterior teeth.

CLASS II

Retrusion of the lower jaw, with distal occlusion of the lower teeth.

DIVISION 1

a. Narrow upper arch, with lengthened and prominent upper incisors; lack of nasal and lip function. Mouth breathers.

b. Same as a, but with only one lateral half of arch involved, the other being normal. Mouth breathers.

DIVISION 2

a. Slight narrowing of upper arch; bunching of upper incisors, with overlapping and lingual inclinations; normal lip and nasal function.

b. Same as a, but with only lateral half of arch involved, the other being normal; normal lip and mouth function.

CLASS III

a. Protrusion of the lower jaw, with mesial occlusion of the lower teeth; lower incisors and cuspids lingually inclined.

b. Same as a, but with only one lateral half of arch involved, the other being normal."

The tabulation which follows is most revealing and deserves consideration in serving as a guide.

"Out of several thousand cases of malocclusion examined the proportion per thousand belonging to each class was as follows:

CLASS I	692
CLASS II	
Division 1	90
Subdivision 1	34
Division 2	42
Subdivision 2	100
CLASS III	34
Subdivision	8
	1000"

This is the original Angle Classification which served as a basis for scientific orthodontia and which inaugurated the rapid progress made by this science in the thirty-four years since its introduction. By this system all malocclusion of the teeth can be arranged into three characteristic groups which not only classify, but also suggest a mode of treatment and retention for each class. Naturally there were and still are many criticisms to this method of classification, but I believe, most of these arise from a failure to fully comprehend the principles involved. There have also been several who have attempted to make constructive changes in the tabulation of malocclusion but this has invariably led to confusion and complications.

Some of the more common mistakes made in classification are illustrated by the following photographs, taken from the Text Book of Orthodontia, through courtesy of Lea and Febiger, Publishers.

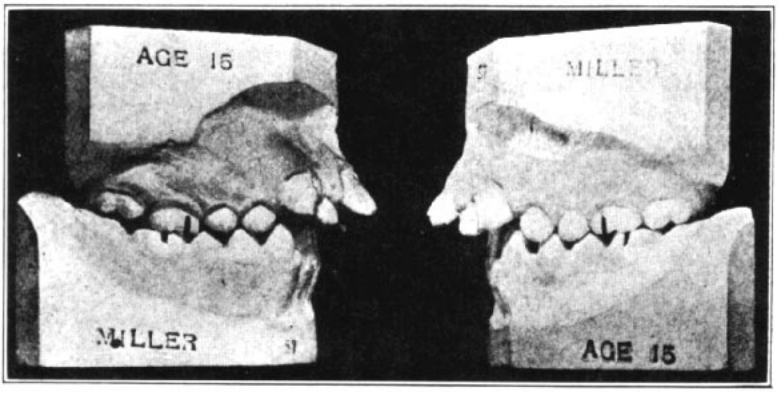

Figure 1

Figure 1. A Class I case with the maxillary teeth mesial to normal skull anatomy, being mistaken for Class II, Division 1 case. It will be noted that the crowns of the upper canines are in mesial axial perversion, due to the fact that premolars and molars have been carried forward mesially by abnormal pressure. A study of the facial lines reveal the mandible in normal skull relationship. Therefore, this is considered a Class I case with the maxillary teeth mesial to normal.

Figure 2. A Class I case with the maxillary buccal teeth mesial to skull anatomy, being mistaken for a Class II, Division 2 case. In this instance the upper canines may not be in mesial axial perversion in which

case the exception of a change in the apical third of these roots is noted. This has been brought about by the action of a strong and tense musclature of the lips whereby the roots are also shifted mesially forward. The mandible is in normal skull relationship as judged by the facial lines. Hence, the case is classified as a Class I with the buccal segments of the upper arch mesial to normal.

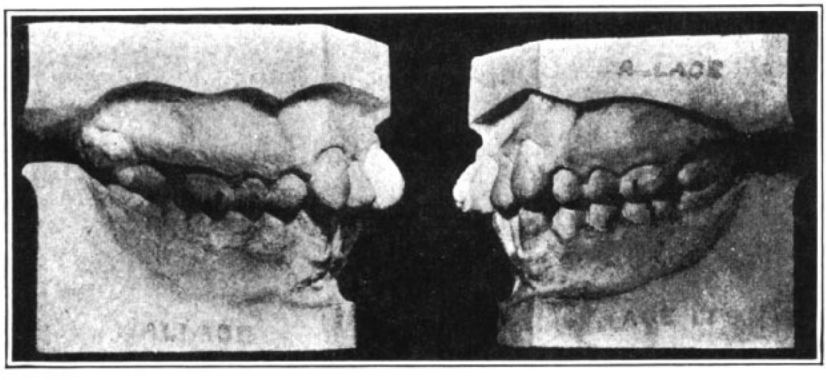

Figure 2

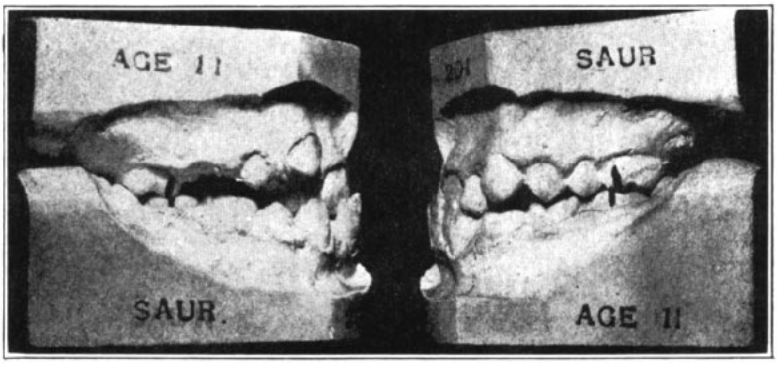

Figure 3

Figure 3. A Class I case with the anterior teeth simulating a Class III case. In this instance the relationship of the jaws to skull anatomy was considered normal with the perversion confined to the anterior teeth. The body of the mandible was judged of normal size.

Figure 4. A Class III case simulating a Class I case. In this case the lower jaw was considered as being in mesial relationship to the skull anatomy, thus establishing a Class III case. The crowns of the upper teeth have accompanied the forward drift of the lower teeth, which, at first glance, gives the appearance of a Class I case.

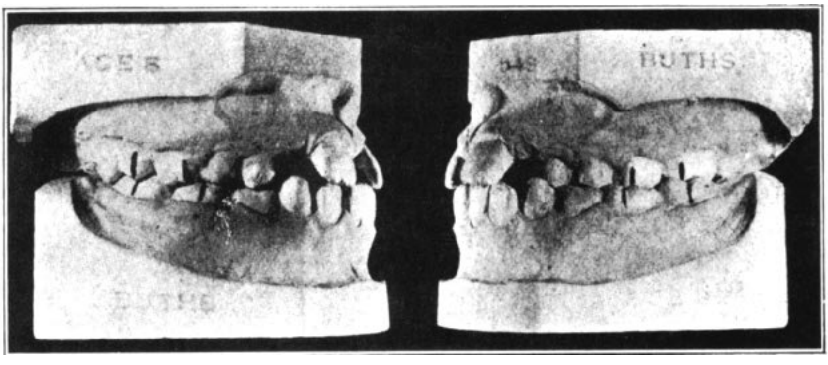

Figure 4

Hence in the relationship of classification to treatment, it is important that a case must be correctly analyzed if the proper treatment is to follow. Serious errors may result from a mode of treatment suggested by an incorrect analysis and classification. Should a Class III case, simulating but mistaken for a Class I, be so treated the maxillary incisors must be carried labially beyond the line of occlusion. This would not only produce a markedly toothy appearance marring the facial lines but might result in a destruction of the alveolar process or possibly an absorption of the roots of these teeth. Similarly a Class I case complicated by a mesial drift of the buccal segments of either one or both arches must also be recognized and treated accordingly or the incisors suffer because of the labial displacement from the line of occlusion.

Dr. Alexander Sved, writing in *The Angle Orthodontist* of July, 1931, under the title of "An Analysis of the Most Important Diagnostic Methods Used in Orthodontia," says "That his (Angle's) statements were taken up in a more restricted sense than they were originally intended can not be denied, and a broader interpretation of his teachings would be of advantage." He concludes his analysis of the Angle system by saying "Angle has enunci-

ated basic principles which can only be enlarged upon, but never can be dispensed with."

If then, I have accomplished my purpose I believe you will agree with me in answer to the question of my title, that the Angle Classification, if properly interpreted and understood, means as much, if not infinitely more to orthodontists today than ever before. It has not only proved its importance in good results but its principles are becoming more apparent with the proper comprehension of its full meaning.

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Discussion of Dr. Hummel's Paper

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I do not know as there is anything that I can add to Dr. Hummel's excellent presentation. However, there is one point that I wish to emphasize. History records and it is common knowledge that prior to Dr. Angle's entrance into the field of orthodontia, many biologic as well as mechanical facts had been discovered, but, so far as orthodontia was concerned, they represented only a mass of uncorrelated knowledge. Orthodontia had not discovered its problem and was struggling along, directing its efforts toward aligning the teeth to effect their straight appearance. Teeth were considered to be the significant factor and even they were sacrificed when they interfered with the desired result. Numerous attempts had been made at classification but all were based on symptoms and therefore lead to empirical methods of treatment.

This was the state of affairs when Dr. Angle entered the field but he soon gave to orthodontia that which it most needed—a new goal to shoot at and, further, paved the road to make the going more smooth. He taught that *occlusion* was the basis of orthodontia, because occlusion was the great end of the denture. It must be so, he reasoned, for the preparation of food is the primary function of the teeth. To place function before esthetics was an "about face" for the profession. Most men were at first loath to accept function as the goal but he assured them that by establishing occlusion, thereby making possible normal function, esthetics would take care of itself for only through normal function could there be correct form, a fact which had long been recognized by the biologist. But a knowledge of the relations of the occlusal surfaces of the teeth does not constitute a knowledge of occlusion. Nature requires years to build the denture, during which time

innumerable forces are at work. To understand occlusion in its broadest aspect means not only a knowledge of the occlusal surfaces of the teeth but of their forms, and further the growth and normal development of the jaws and muscles together with the development of the teeth and the normal periods for taking their positions in the arches. Thus there was opened to orthodontia the fields of general science for application of available knowledge together with an incentive for the discovery of new facts. The classification itself was but a yard stick to measure deviation from the normal and utterly useless to anyone not familiar with the principles upon which it was based. It was a biologic concept and of value only when applied with a knowledge of the forces of occlusion, obtainable only from a knowledge of the fundamental sciences.

Orthodontia has not been satisfied and has not ceased its search for a rule that can be applied without thought. Numerous efforts have been made to mechanically classify malocclusions, which up to the present time have failed. Dr. Angle's classification therefore remains today as the only means available for use in the analyses of malocclusions. Additions may be made but never will they supplant its principles which are fundamental to the solution of our problems.

There is one other point that I wish to mention. So long as esthetics remained the goal to be achieved in the correction of malocclusions, the simple machines—the screw, the lever, the inclined plane and pulley—served adequately as an orthodontic appliance, but with the development and application of fundamental biologic knowledge new demands were placed on them. Accordingly we have seen a gradual evolution of appliances until the development of the edgewise arch, which mechanism, in skillful hands, is capable of effecting normal relationships of individual teeth in the same denture and also controlling the relationships existing between the two dental arches. Surely the classification, with all that it embraced, has been responsible for this development and may still serve for further advancement.

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