The Art Of Euclid’s Writing Essay, Research Paper

In Elements book one, Euclid incorporates stylistic devices in the process of proving a series of mathematical theories. One stylistic aspect of Euclid?s writing is his use of common notions, such as the whole being greater than the part, and postulates, such as drawing a line from any point to any point. His early use of common notions and postulates do not merely help to prove the particular proposition, but is used in later propositions to persuade the reader of his proofs as well as to instill confidence in himself and the reader of the conclusions he arrives at in the propositions.

Even before the actual propositions begin, Euclid lists the common notions and postulates of which he and the reader agree with. By doing this, Euclid and the reader have confidence in the proofs. In another way, the words ?common notions? and ?postulates? can be substituted by ?common sense? because it is ten points which everyone believes to be true. For example, the majority of the conclusions in proposition thirteen were arrived at using common notions. The last three steps in finally proving proposition thirteen were based on common notions. Since everyone agrees with the common notions, Euclid is confident that he is making a logical progression in proving that if a straight line set up on a straight line make angles, it will make either two right angles or angles equal to two right angles. Because of the general agreement of the postulates and the common notions, and by listing them in advance, Euclid is confident that he is correct when he makes assumptions based on them. In the same sense, the reader also holds the conclusions that Euclid arrives at to be true. Another possibility to Euclid?s use of postulates and common notions is that he often uses postulates to set up a problem in terms in which he knows to be correct and then concludes the proposition with a common notion. Euclid is confident that if he can arrive at a common notion for the last step, he is able to prove the proposition using that particular common notion. An example of this is proposition two in which his first step in proving the proposition uses postulate one and by a logical progression arrives at common notion one in the end to prove the proposition.

Another reason for Euclid?s use of common notions and postulates is the desire to persuade the audience that he is correct when he uses common notions to prove postulates. For example, in proposition four, which states that if two triangles have the two sides equal to two sides respectively, and have the angles contained by the equal straight lines equal, they will also have the base equal to the base, the triangle will be equal to the triangle, and the remaining angles will be equal to the remaining angles respectively, namely those which the equal sides subtend, Euclid?s last step refers to common notion four, which ultimately proves the proposition. Because Euclid knows the reader agrees with the common notions, he can easily persuade them when he stakes a claim in order to prove a proposition. Another example is proposition two, that places at a given point (as an extremity) a straight line equal to a given straight line, which is solely proven using postulates and common notions. In this case, Euclid can easily persuade the reader because every step of the proposition involved either a postulate or a common notion. Since the reader accepts all the postulates and common notions to be true, Euclid can easily persuade the reader when all a proposition contains is common notions and postulates. In another instance, Euclid uses both a postulate and a common notion to prove one of the steps of proposition fifteen which states that if two straight lines cut one another, they make the vertical angles equal to one another. By fulfilling the conditions of a postulate and a common notion, the proposition gives the reader no doubt that the proof will work.

Euclid also uses a proposition proven by a common notion to prove a later proposition. For example, propositions four and ten are correlated in this manner. Proposition four, which deals with congruent sides and their included angle, is used to prove proposition ten, which is used to bisect a given finite straight line. Euclid also proves propositions in succession, proving one using the propositions that directly precedes it. An example of this is propositions eighteen, nineteen, and twenty, which deal with greater angles subtending greater sides. He does this because he is confident that by using a proposition proven by a common notion, which has to be true, the later proposition that is based upon the earlier also has to be true. Not only is Euclid confident when he uses this reasoning, but so is the reader who is persuaded by reference to an earlier common notion.

Euclid?s writing has many stylistic aspects that help prove his theories of triangles and parallel areas. In using the various stylistic devices in his Elements, especially the use of common notions and postulates, Euclid systematically explains each step of his propositions with a reference each time to either a common notion or a postulate, or some other form. Since almost all of the propositions contain either a postulate or a common notion, Euclid persuades the reader that he is right because of the acceptance of postulates and common notions as true.