CHAPTER I

SCIENTIFIC INTERVENTION IN HOBBES’S POLITICAL PHILOSOPHY

The relationship between political philosophy and science is one of the perennial problems in the history of philosophy. The perenniality of the problem lies in the fact that it has invoked and is still generating lot of debates in the philosophical circles. One of the interesting aspects of the relationship is the intervention of science into political philosophy. The intervention of natural sciences into political philosophy has marked a significant change in the history of political philosophy. This intervention has changed the outlook of the political philosophers, who started looking at the tradition with a skeptical attitude. The political philosophy of Hobbes is an interesting instance of the intervention of physical sciences into political philosophy. It is interesting because, as pointed out by Leo Strauss, "Hobbes was the first who felt the necessity of seeking, and succeeded in finding, a nuova scienza of man and state" (1936: 1). Macpherson reasserted the intervention of science when he said that Hobbes 'had truly caught the spirit of the new science that was transforming man’s understanding of the natural world. This was the spirit of Galileo – bold hypothesis and closely reasoned deduction from it. to reach propositions that would match and explain the phenomena …' (1968:10).
This chapter discusses the political philosophy of Hobbes as an instance in the relationship between philosophy and science, more specifically political philosophy and modern science.

Hobbes was the first modern political philosopher to use science as a foundation of a social theory (Habermas: 1977: 56, 61). Dissatisfied with the traditional methods of philosophizing, which he thought had complicated the problems, instead of solving them, he criticized traditional philosophy for being 'a dream than a science'. He rejected the classical doctrines like Aristotle's physics and metaphysics. His rejection of classical doctrines does not imply that he did not give any value to the traditional way of knowledge. In the words of Strauss, Hobbes:

...certainly knew and valued the joys of knowledge no less than any other philosopher: but these joys are for him not the justification of philosophy: he finds its justification only in the benefit of man i.e., the safeguarding of man’s life and the increase of human power (1936:34).

Traditional ways of knowledge, for Hobbes, cannot become the justification of philosophy, for the sole justification of philosophy lies in safeguarding the life of man and increasing the human power. The benefits of this kind were sought to be attained by using science to political philosophy. His interest in the developments in modern natural sciences made him base political philosophy on the scientific method.
Hobbes's system of science is a synthesis of three parts: Materialism or Physics. Psychology and Civil philosophy. These three correspond to the three basic structures of human existence: Body. Man and Civil society. According to C.B. Macpherson, Hobbes intended to start his philosophy with:

*at Body*, which would set out the first principles of motion: of *man*, which would consider man as one kind of body in motion and would explain his *sensations, desires*, and behavior as results of his internal motion and the impact on it of external motions; and of the *citizen*, which would show what these motions would necessarily lead to and how their result might be altered for the better by knowledge of these laws and by rational fore thought (1968:19).

In this way, Hobbes conceived the project of a *system* of philosophy in three parts, the first dealing with *body*, which is physics: the second with the man. his physiology and *psychology*, and third with the artificial body. i.e., civil society. He used the method that was used for physics by Galileo to all the three parts of *philosophy*, i.e., to *physics, psychology* and political philosophy.

**Hobbes on Science**

Before discussing the influence of science on Hobbes. let us clarify his notion of science. He equates science with philosophy and uses both words interchangeably. This equation is clearly evident in Leviathan when he says: "Knowledge of the
Consequences of one Affirmation to another is called science. And this is the knowledge required in a Philosopher. (1968:147) Further, he says, "The Registers of Science ... are commonly called Books of Philosophy." (1968:148) The reason for this equation is his deep-rooted conviction that only the methods of science are infallible and can lead to sound conclusions. Therefore, philosophy should be scienticised. He was convinced that only practical efficacy of the scientific method can provide a solution in resolving the perennial problems of philosophy. Science or philosophy for him is not mere prudence rather it is an analyses of ratiocination that articulates the possibility of knowing the whatness of the things.

As it is stated above, Hobbes in Leviathan defines science as. “Knowledge of the Consequence of one Affirmation to another”. (1968:147) According to this definition, science demonstrates the consequences of the affirmations. The affirmations have names as their elements and connections between these names to one another are called affirmations. Science proceeds from names to affirmations made by the relation of one to another till the knowledge of all the consequences of names pertaining to the subject in hand are reached. It begins with the imposition of names, which serves to remember the things named and function either as marks or signs. Science, in this way, for him, is also imposition of names, the analysis of meanings through definitions and construction of syllogism basing on ratiocination. It is often described as the process of unpacking of definition and the proper ordering of the names and terms. Consequences are the conclusions at which one arrives after examining the connections of affirmations to one another.
Hobbes makes a distinction between knowledge of facts and knowledge of science, and argues that the former is the thing of the past, which is irrevocable. But the later has a practical utility in the sense that once we know we have the knowledge we can demonstrate it and can also use it in the future course of action. Knowledge of facts deals with the dependence of one fact upon another. If we have the knowledge of this dependence then we know what causes produce what effect and what consequences follow from what affirmations. To quote Hobbes:

**Science** is the knowledge of **Consequences**, and dependence of one fact upon another: by which, out of that we can presentl) do, we **know how** to do something else **when we will**. or the like, another time: Because when we see how any thing comes about, upon what **causes**, and by what manner: when the like causes come into our **power**, wee see how to make it produce the like effects (1968:115).

This definition of science or philosophy stresses the importance of not only the theoretical knowledge of the cause and the effect or affirmations and consequences, but also the practical aspect of the ability to produce the effects or consequences in similar situations. In addition, Hobbes points out that science is not just the knowledge of 'what causes', in 'what manner' produce 'what effects', but the **ability** to recognize that the same cause will produce the same effect. According to him, if we have scientific knowledge then we know what cause will produce what effect in what manner. Further, he explains science as. "...the knowledge of effects
based on true reasoning from other knowledge of causes or knowledge of causes
based on true reasoning from knowledge of effects.” English Works of Thomas
Hobbes: 1839-45: 3) Knowledge, either of the causes from the effects or the effects
from the causes, which is based on true reasoning is explained as science. Reason
means nothing but reckoning, which is adding and subtracting of consequences, and
is attained by industry or practice.

Science, defined in this way, for him, signify two things - one, that it is
demonstrative in nature and two, that it is the knowledge of the relations between
causes and effects. The causal nature of the scientific knowledge is based on the
mechanistic explanation of nature, which stresses the importance of experimentality.

The definition of science, as a demonstration of the relations between
consequences and affirmations, include certain branches of knowledge, such as Civil
Philosophy and Natural science and exclude Theology. Civil and Natural History.

Hereafter EW.

One important observation in this regard, pointed out by Douglas Jesseph, is that
the traditional scholastic understanding of science is in no way different from
Hobbes’s definition when it comes to the fact that scientific understanding must be
rooted in the knowledge of causes. However, the Scholastic-Aristotelian philosophy
rejects the mechanical explanation of the natural phenomena which is accepted by
Hobbes and bases itself on non-mechanical principles like substantial forms and final
causes. (1996: 87)
Astrology and teaching about God's Worship. This exclusion is grounded on the tension between certainty and uncertainty of knowledge that these branches of learning impart. However, he does not deny the existence of non-scientific branches of study, rather, he drops these branches from the scientific status. Value to these non-scientific branches of knowledge is dropped only when they don't lead us from causal reasoning to true and certain conclusions. However, he states that sometimes even a non-scientific subject complements or aids science.

Science in Hobbes:

Hobbes, following modern science, sought to restore credibility to philosophy, which was lacking in all previous philosophical methods. More specifically, with the influence of his contemporary scientific developments, he applied Materialism, Law of Motion, Geometric method and resolutive-compositive method* or Analytic-Synthetic Method to his political philosophy. Let us briefly discuss these in the following.

Materialism:

Following materialistic conception of reality, he argues that matter is the only reality and it can be either matter or something produced out of matter. All the objects of nature are products of matter, and they exist as ultimate physical particles or as compounds of these ultimate particles. He rejects the existence of non-materialistic things such as spirit or soul. The seemingly non-physical entities such
as space and \textbf{time}, or thought or logical relations are the attributes of mind. Mind is a material \textbf{phenomena}, a complicated series of physical motions. To quote Hobbes:

\begin{quote}
...the \textit{Universe}, that is, the whole masse of all things that are is Corporeall. that is to say. Body: ... and consequently \textbf{every} part of the \textit{Universe}, is \textbf{Body}, and that which is not \textbf{Body}, is no pan of the Universe: And because Universe is All. that which is no part of it. is Nothing. (<1968:689)
\end{quote}

It follows from the above quote that material \textbf{body} is the only existent reality. \textbf{Body} is something which has an independent existence from our thought and which is extended in some part of space.

All \textit{sensations}, \textit{emotions} and \textit{feelings}, he argued, emerge from the human \textbf{body} as a result of the perception of external objects. Thus, human behavior is determined by the \textbf{material} objects that act from outside.

\textit{Law of motion:}

Another significant aspect along with matter in the philosophy of Hobbes is motion. \textbf{Motion}, together with matter plays an important role in explicating a mechanistic model. He explains motion as the cause of all things that have a cause. He relates motion to all existent \textbf{things}, in other words, to all corporeal \textbf{things}, which have a cause. This leads him to the conclusion that only material things exist and they have motion as the cause of their movements. He also explains motion in terms
of place. He says, "Motion is change of place." (1968:693) This definition explains motion as something that changes its place always. According to him, "life is nothing but the motion of limbs." He recognizes eternity of motion as something natural when he says that:

When a body is once in motion, it moveth (unless something else hinders it) eternally. (1968:88)

In this way, he states that since the motion is eternal it is also natural to material bodies. He accepted the Law of inertia of Galileo. Galileo while opposing the traditional conception of the theory of motion, which states that motion comes to the object because of some external force, argued that motion is natural to the objects and all objects stay in motion until something obstructs the movement. If something hinders a moving body, it will not stop the movement instantaneously, but in a period of time. Hobbes’s explanation of Sense, Imagination, Memory and Speech include motion as the basis. For instance, while explaining the Sense, he states, the 'qualities called Sensible' are nothing but "so many several motions of the matter" that in turn produce "divers motions, for motion produceth nothing but motion." (1968:86) He

3 Alexander Rose, a contemporary of Hobbes, has refuted the argument that life is the motion of limbs. He argued on the one hand that there is life even if there is no motion like in sleep or in hysterical paralysis. And on the other hand, there is motion without life "as in a wooden leg." Thus, Rose concluded by saying that life is cause of the motion and not vice versa (in John Bowie: 1969.65).
states that all sensations, emotions and feelings emerge from the human body as a result of perception of external objects. Human behavior is determined by outside material objects.

Further, Hobbes explains two kinds of motions: one, vital motions, which begins in generation and continues without interruption throughout the whole life, such as blood circulation, pulse, breathing, etc. And two, volitional motions, such as motions involved in speaking, moving etc., as willed by the human minds. The first one is the basis of all physical life and the second, the basis of all social and civil life.

1 Hobbes made a radical shift in the assumptions of political philosophy. This shift is similar to that of Galileo's reversal of the formulation of law of uniform motion. Galileo reversed the earlier view of the law of motion, which states that an object at rest would stay the same unless something moves it: by assuming that an object in motion would stay in motion unless something stops it and its motion does not require the continual application of outside force. Hobbes instead of finding rights and obligation only in some outside force, which was the case before him, assumed that they were entailed in the need of each human mechanism to maintain its motion. (Macpherson: 1962: 77) The revolution that he brought in moral and political philosophy, Macpherson argued, constituted in the assumption that equal right was entailed in equal need for continued motion.
Matter and motion formed the subject matter of the philosophy of Hobbes, to which he applied the methods of natural sciences in order to demonstrate his civil philosophy. This makes the influence of the methods of Newtonian and Galilean sciences on his works profound. They guided him to achieve his objective of making political philosophy a science, on the basis of rigorous methodology.

The contribution of mechanistic psychology to Hobbes's political philosophy is clearly evident in Leviathan. Hobbesian physics explains man in terms of material and motion, i.e., man as a material being acted upon by the world. Man is said to be governed by appetites, passions, imaginations, and emotions. The object of perception is motion, which enters to our minds through sensation. To quote Hobbes, "...there is no conception in a man's mind, which hath not at first, totally, or by parts, been begotten upon the organs of sense. The rest are derived from that original." (1658:85) The effects of matter in motion becomes light, figure, color, sound, odor, savor, heat, cold, hardness, softness in man. All the conceptions of man originate first through the sense organs. Memory and imagination come from the image of the object that brain retains after the object is removed from the sense. Hobbes calls these obscure motions as decaying sense and says that these are the phantasms, which make up our thinking material. When language, i.e., naming of the objects, is added to thinking the computation with the words becomes possible. This computation or reckoning, which is adding and subtracting of names, is called reason. All our thinking is subjected to sense and it is either rooted in science or experience. Thinking that is rooted in science is rational and thinking that is rooted in experience is out of sensations.
Few memories stimulated by new sensations produce harmful consequences and lead to the feeling of aversion. Few other memories, which are pleasant, produce a feeling of pleasure or desire. The pleasure and pain or aversion and desire emerge from the physical forces of attraction and repulsion and lead to a consecutive action.

Hobbesian account of motion of the mind extends beyond sensation and cognition to passions. Passions are understood as after effects of sense. When we see something, the thing imparts motion to the inner most part of the organ of sight, which is sensation and make the mind cognize the object. The motion and agitation of the brain, which we call conception, can be continued to heart, and there by called passion. The heart controls circulation of the blood, which is the 'vital motion' in the body. When the motion derived from an act of sense encourages vital motion, man experiences pleasure at the sight, smell or taste of the object and increases his contact with the object so as to prolong or intensify the pleasure, which is passion.

Since life itself is but motion we can never be in tranquility. This implies that we can never be without desire or sense, which are consequences of simple forces of motion. Human life can never be without desire and fear. Desire is unending and fear is permanent. These two, desire and fear, are the natural conditions of life, which makes the life of man 'solitary, poor, nasty, brutish and short.' This, further, leads to the state of war, which is war of every one against every one. State of war forces people to think of avoiding fear of death and Hobbes’s political philosophy is based on this self-interest.
Hobbes’s chance reading of the geometry of Euclid at the age of forty literally changed his life and introduced him to a mode of reasoning that he later sought to transfer to natural and civil philosophy. (Aubrey. 1950: 332) According to this method, the physical world is a mechanical system under which anything that happens is to be explained in terms of a preceding event. Identifying man with matter, he begins his explanation with the law of motion and goes on to build his philosophy on the basis of geometric method.

The importance of geometry is due to the fact that geometry studies the general law of motion. All human techniques and arts are special cases of human actions which in turn, are nothing but special cases of motions. Geometry is that part of philosophy, which studies the effects, figures and properties, resulting from the notion of moving bodies. Since all arts are special applications of geometrical theorems, studying the properties of these moving bodies, Hobbes concludes, that the geometrical method is the method of philosophy.

The two important features of geometry that he was attracted to were: one, carefully analyzed, defined and explicated terms, which form the beginning of the argument and make the conclusions ‘indisputable.’ And two, the precision and exactitude of the arguments, which leaves no room for any doubt regarding the validity of the conclusions. This is the reason why geometry is regarded as ‘the only
science that it hath pleased God hitherto to bestow on mankind.' (Hobbes. 1968: 105)

Hobbes argues that once the true definitions of a system have been introduced then all its properties can be easily demonstrable by one who understands the relevant definitions. Based on this assumption, it is argued that civil philosophy is also demonstrable, because as man creates the commonwealth, its causes are fully knowable to men, and therefore there is room for a genuinely demonstrative science of commonwealth.

**Resolutive-Compositive method:**

Although geometry can completely satisfy the criteria for genuine scientific knowledge, its application is left with a serious problem. The precision and exactitude of the geometric method is based on the simple self-evident propositions that are employed in the beginning of the deductive process. Simple elementary and clearly defined propositions that form the beginning of the geometric deduction signify the validity of the conclusions. That means geometric method starts from the simple primary propositions, which are themselves definitions and the principles of demonstration. However, the problem involved here is ‘how to arrive at such primary propositions in political philosophy?’ Now the problem for Hobbes is - how to reach such basic primary propositions, which need no further explanation.
Commenting on this, Macpherson says:

To do this he needed a hypothesis more specific than the general one about motion, and he needed a method more inclusive than the deductive method of geometry. (1968: 25)

Since the application of geometric method to political philosophy is not possible, as it is not possible to reach the indubitable definitions in political philosophy Hobbes looked for a new method which can give the exactitude of the Geometry. This necessitated him to look for a two-part method, which would show how to reach such simple starting propositions, as well as what to do when one had them. Hobbes found it in the method used by Galileo – the ‘resolutive-compositive’ method” (Macpherson, 1968: 25-6). This method is also known as analytic synthetic.

J.W.N. Watkins (1965) observes that in his social contract argument Hobbes is implicitly making a certain kind of use of the ‘resolutive-compositive’ method expounded by the Pauduan scientists of his day such as Harvey and Galileo. This methodological doctrine of resolution and composition was developed in the sixteenth century by Italian philosophers known as the ‘School of Padua’, whose most famous exponent was Jacopo Zabarella (1532-89). Galileo was strongly influenced by this school. Some modern interpreters of Hobbes like Leo Strauss. Macpherson also argued that Hobbes’s conception of analysis and synthesis is an inheritance from Galileo. Douglas Jesseph (1996: 95) argued that, though there is no
method. According to this method, the best way to understand a system or a process is to resolve it into its components, analyze these components, and then recompose or synthesize them via a theory that explains their interrelationships and interactions. Galileo applied this method and explained all the physical phenomena in terms of simple forces of motion. For him, resolution part is an exercise in imagination. This exercise assumes that the observable thing to be explained is a compound effect of some simple unobservable factors. Hobbes borrowed this method from Galileo to make his political philosophy scientific. This borrowing may raise a question about the originality of Hobbes's contribution to political philosophy. Douglas Jesseph argues that though Hobbes has no originality in distinguishing between analytic and synthetic methods from his previous philosophers, he adds slightly different twist by phrasing them in terms of causes and effects. To quote Jesseph:

In the Hobbesian scheme the difference between analysis and synthesis lies in the comparison between the order of reasoning and the order of cause and effect: to reason analytically is to proceed from effects to (possible) causes, where as the synthetic mode of reasoning follows the natural causal order and moves from causes to effects. (1996:92-3)

I doubt that Galileo also employed the technique of analysis and synthesis, there no evidence of direct connection between Hobbes and Galileo.
Apart from the **originality** of order of reasoning and order of cause and
**effect**, the application of the method is also an original contribution of **Hobbes** to
political philosophy. According to Macpherson this application of the method is both
‘difficult and simpler than the science of mechanics.’ (1968:26) It is difficult because
political philosophy is concerned with the motions of men in relation to each other
and these motions are complex and difficult to understand than the motions of mere
physical objects. And it is simpler because since men are the parts of the political
**organization**, they can have direct knowledge of the motions within themselves.
Hobbes describes his application of the **resolutive-compositive** method as:

...for as in a **watch**, or some such small **engine**, the **matter**, **figure**, and motion of the wheels cannot well be **known**,
except it be taken in sunder and viewed in parts: so to make a
more curious search into the rights of States and duties of
**Subjects**, it is necessary. (I say, not to take them in **sunder**, but
yet that) they be so **considered**, as if they were dissolved. (i.e.)
that wee rightly understand what the quality of the human
nature is. ... and **how** men must be agreed among **themselves**.
that intend to **grow** up into a well-grounded State. (1983:32)

Hobbes sought to construct **coherent** theoretical explanations from simple
basic factors by applying the scientific technique of - **resolve**, **idealize** and
**recompose** - to political philosophy. **In** accordance with Galileo **Hobbes**’s
application of **resolutive** part of the method is also an exercise in imagination. The process of
resolution takes us to the fundamental causes or the first principles from which all the phenomena of nature are derived. In this connection, it is important to note that the resolution or dissection involved here need not be taken as literal. Regarding the investigation of the basic principles of nature it is sufficient to perform a ‘thought experiment’ in which natural phenomena are resolved only in thought. Using this thought experiment, he derives motion and matter as the basic principles of all the natural phenomena, and individual as the basic part of the civil society. Here, it is necessary to quote Hobbes’s own statement that stresses the need of the thought experiment:

Civil philosophy is demonstrable, because we make the commonwealth ourselves. But because of natural bodies we know not the construction, but seek it from the effects, there lies no demonstration of what the causes be we seek it from effects, there lies no demonstration of what the causes we seek for, but only of what they might be. (EW VII. 184)

This explanation states that it is not the physical dissection that is involved in resolution but it is the resolution in thought. Hobbes with the help of motion and matter as the basic principles explains all natural phenomena and also the composition of civil society. He had in imagination reduced the motions of man to simple forces of matter and motion. These are self-evident to any reasonable inquirer. He also believed that his rational composition of these factors was so
logically correct that no honest inquirer could disprove their validity. Hobbes expresses this fact clearly in his introduction to *Leviathan*. He says:

Whosoever looketh into himself, and considered! what he doth, when he does think, opine, reason, hope, fear, &c. and upon what grounds: he shall thereby read and know what are the thoughts, and Passions of all other men. upon the like occasions ...[and] when I shall have set down my own reading orderly, and perspicuously, the pains left another, will be onely to consider, if he also find not the same in himself. For this kind of Doctrine, admiteth no other Demonstration.

(1968: 82-3)

Hobbes, thus, felt that there is no need of showing the guesswork and logical trial and error by which he arrived at his postulates. That is the reason why he does not take his readers through the process of resolution, instead starts right away with the postulates and the compositive reasoning. It is for this reason, that some of his interpreters like C.B. Macpherson contended that his use of resolutive-compositive method is partial. Hobbes, to quote Macpherson, "...does not take us through the resolutive stage of his reasoning, but starts us straight away with the postulates and
the compositive reasoning." (1968: 29) However the application of the method is not partial, and reasons are given for omitting the resolutive part in its application.

To sum up, the method that Hobbes used is a ‘resolutive-compositive’ method and he takes note of matter and motion but not soul, and studies matter according to scientific methods of his time. Using the resolutive part of the method, he first refers to individuals as the basic parts of a society, and then refers to motion and matter as the basic elements of every physical set up. Following Galileo’s law of inertia, which

6 Macpherson pointed out this partial use of scientific theory only to say that, as in most scientific theories the order in which it is presented is different from the order in which it was discovered. (1968: 30) According to Richard Peters, Hobbes’s method did not in fact provide him new truths. It only helped him to systematize opinions that are as old as Thucydides, which is the earliest work produced by Hobbes, before he got introduced to the science. (1956: 46) However, Richard A. Talaska, contended this view and argued that ‘Hobbes also used his method to serve for invention.’ (1988: 210) While criticizing Hobbes’s use of science, Richard Tuck stated that. Hobbes ‘offered a science: but when one takes a closer look would find that his science is of an extremely exiguous kind. By clearing away all that he thought doubtful, he was left with a bare a priori materialism, according to which the universe must consist of material objects causally interacting with one another, but the real character of these objects and their interactions is unknowable.’ (1985: 114)
regards motion as the basis to **everything**, he expounded a materialistic **philosophy**. The basic pillars of his philosophy are *Matter* and *motion*. Hobbes's materialism is a bridge between science and mechanics and its logic is as elegant and brittle as any to be found in political thinking. In using science as the foundation for his **philosophy**, he undoubtedly thought that he had discovered the key for unlocking the door to a true political **philosophy**, which would at the same time furnish an irrefutable foundation for political order. This can be seen as an attempt by him to transform political philosophy into science. By doing so he thought he could bridge the gap between speculation and practice. With the use of different scientific theories that were prevalent in his time, Hobbes became an important instance in the process of the transformation of political philosophy into science.

The above understanding of Hobbes’s political philosophy being based on scientific **method**, particularly *resolutive-compositive* method and its continuity from materialism to political **philosophy** through psychology can be named as a traditional interpretation. According to this interpretation Hobbes deduced the civil society from his theories of matter and motion by following deterministic psychology. The civil **society** is resolved into its basic **parts**, i.e., individuals and individuals are further deduced to their basic **elements**, matter and **motion** by following a strict determinism. In this way, the traditional interpretation claims two aspects in Hobbes: 1. That Hobbes’s **philosophy** is a unified **system**, or to use C.B. Macpherson’s phrase 'monolithic structure' and. 2. That the basis of this structure is science.
However, this traditional interpretation of representing Hobbes's philosophy as a monolithic structure has been contested subsequently. The monolithic structure has been probed, attacked and broken up, as it is said by Macpherson, to ‘rescue a substantial part of it from what were thought to be fatal weaknesses in other parts.’ (1962: 9) According to Macpherson the first wedge to break the monolith was driven between Hobbes's theory of materialism and his political philosophy, which reached its culmination in Strauss's work *The Political Philosophy of Hobbes, Its Basis and Genesis* (1936). The second wedge between empiricistic psychology and political philosophy was driven by A.E. Taylor in his article "The Ethical Doctrine of Hobbes" (1938). Similar view with a few differences was expressed by Warrender in his work *The Political Philosophy of Thomas Hobbes: His Theory of Obligation* (1957). These interpretations of the modern period which opposed the traditional interpretation by probing and breaking the monolithic structure can be named as the modern interpretations of Hobbes.

Stuart Brown Jr., while discussing these modern interpretations states that there are at least three reasons why these interpretations radically oppose the traditional interpretation. They are:

1. There are passages in Hobbes’s works, which discusses obligation in terms of language that cannot be explained by the traditional interpretation. These passages assert that men are obliged *in foro interno* to keep covenants even in state of nature and *list* the duties of the sovereign to his subjects. In contrast, following traditional
interpretation we understand that obligation has its origin only in
civil society made through a contract and the sovereign has
absolute authority and has no duties towards his subjects. From
this, one assumes that either Hobbes is ‘systematically
inconsistent’ or that the traditional interpretation is ‘some how
mistaken and in need of substantial revision.’ Since the first
alternative does not lead us anywhere, the modern interpretations
have chosen the second alternative.

2. Since the traditional interpretation assumes continuity between
psychological egoism and political philosophy, if the
psychological egoism is false then the political philosophy must
also be either untenable or false. Hobbes’s descriptive account of
psychological egoism now seems incredibly crude and plainly
false. Hence if we are to take him seriously we must look at the
traditional interpretations with deep suspicion. This suspicion must
start with the assumption that his ethical theory could turn out to
be logically independent of his philosophy.

3. Even if Hobbes did not distinguish between his theory of empirical
psychology and political philosophy, we should now distinguish
between these two and determine whether Hobbes could in
principle have done so without damaging his philosophy.
For these reasons the modern interpretations of Hobbes given by Strauss, Taylor, Warrender, and Macpherson have taken a view that is radically opposed to the traditional interpretation. In contrast, they argued that science is not the basis of Hobbes's philosophy. In order to substantiate this argument they probed the monolithic structure projected by traditional interpretations and broke it. They claimed discontinuity in the philosophical system of Hobbes between materialism, psychology and political philosophy. This led them to establish the independence of political philosophy. Now the interesting aspect to be studied is the occasion for the arrival of these modern interpretations. What is the reason that occasioned such an upsurge in the works on Hobbes? Is it the developments in Hobbesian studies that occasioned this upsurge or the developments in the field of the discipline political philosophy? The occasion of this upsurge cannot be understood only by looking at the developments within either Hobbesian studies or political philosophy. Though it is true that the attitude of the authors of Hobbesian studies has changed during the twentieth century, the studies themselves cannot occasion the upsurge. There must be some other happening that occasioned the upsurge. This occasion is the developments within the field of science.

As already stated, the twentieth century developments in science, especially Einstein's Special theory of Relativity, contested the earlier theories of science such as theories of Newton and Galileo. With the background of these developments the sudden upsurge in Hobbes's studies in the twentieth century can be understood with more clarity. These developments in science indirectly occasioned the upsurge in the Hobbesian studies. They have changed the outlook of the modern interpreters of
Hobbes and made the probe into Hobbesian monolith possible. Wittingly or unwittingly, the modern interpreters were influenced by the developments in science. The following chapters discuss the attempts of Leo Strauss, A.E. Taylor, Warrender and Macpherson in providing alternative interpretations of Hobbes.

In chapter II, Leo Strauss's interpretation of Hobbes's political philosophy is discussed. According to him, Hobbes's political philosophy is based on the method of 'self-observation'.