CHAPTER-II
THEORETICAL PRECURSORS OF JACK LONDON’S NOVELS

Including Ernest Haeckel’s *The Riddle of the Universe*, Karl Marx’s *Das Kapitol* John Milton’s *Paradise Lost*, and Herbert Spencer’s *The Philosophy of Science*, Jack London read Charles Darwin’s (an English naturalist’s) *The Origin of Species* during his stay in the Klondike in 1897 and 1898. Darwin had his greatest influence on London through the writings of Herbert Spencer. Darwin, in *The Origin of Species*, used the expression, which has been originally coined by Herbert Spencer, “Survival of the Fittest” which is more accurate than “Struggle for Existence”. He first used the phrase in *The Principles of Biology (1864 – 1867)*, Spencer wrote, “The survival of the fittest which I have here sought to express in mechanical terms, is that which Mr. Darwin has called “natural selection or the preservation of favored races in the struggle for life” (Sciambra 2). Jack London has claimed Herbert Spencer along with Karl Marx, as his teacher. This philosopher adapted Darwin’s theory of survival of the fittest to human society. From Spencer’s theory, as well as from other reactionary ideologists, it is understood that, as in the animal world, only the strongest will survive. On a larger scale, the fittest races and nations survive in this world. London repeatedly failed to keep his faith in the inevitability of Socialism with these theories. This contradiction of beliefs has influenced his work. Derek Freeman’s famous quotation on Darwin is, “In the *Origin of Species*, Darwin had not, in fact discussed the bearing of Evolution theory on the human species other than to remark that ‘Light will be thrown on the origin of man and history” (15).
Charles Darwin (1809-1882), the British Evolutionist wrote *The Origin of Species* (1859), in English. The grandson of Erasmus was Charles Darwin. Erasmus was the eighteenth century advanced thinker of mechanism of evolution. With the resources of Erasmus, Darwin had excelled in exploring the improvements acquired during an organism’s lifetime. In the first half of nineteenth century, Darwin was inspired and influenced by Alfred Russell Wallace’s independent discovery of his principle of natural selection and that paved a way for Darwin to establish the theory of evolution. Since Gregor Mendel (1822-1884) was an Austrian monk, he wrote his experiments that deal with Genetics, only in German. Though they were contemporaries, neither of them had read the other’s work. If they had done so, they and their works would have been recognized earlier. They would have developed their common aspects, like Natural Selection and Atavism, further. Mendel’s experiments on hybridization were in symbols, whereas Darwin’s were in words. Mendel’s experiments were translated in different languages posthumously by many. One of them was William Bateson, Professor of Cambridge University, who translated Mendel’s papers on hybridization into English, in 1902. Hence Jack London must have read this translation and applied Mendelism (Mendel’s laws) in his masterpiece *The Call of the Wild* in 1903. The contribution of Gregor Mendel to Genetics is called Mendelism. According to Webster’s dictionary, Meyyan states, “Genetics is the branch of Biology which deals with heredity and variation among related organisms largely in their evolutionary aspects” (1). Mendel’s laws are: Law of Dominance, Law of Segregation and Law of independent assortment. Meyyan highlights Mendel’s law of dominance, “one factor in a pair may mask or prevent the expression of the other. He called the variety that appeared in F1 generation (First filial generation) of his monohybrid cross as dominant and those which did not appear in the F2 generation as
recessive" (17). Meyyan stresses Mendel's law of segregation, "During gamete formation the gene of a particular character separate and enter different gametes" (18). Meyyan remarks Mendel's law of independent assortment, "...the genes for each pair of characters separate independently from those of other characters during gamete formation" (18). Brown comprises the term genetics as, "it is the name given to the study of heredity, the process by which characteristics are passed from parents to offspring so that all organisms, human beings included resemble their ancestors. The central concept of genetics is that heredity is controlled by a vast number of factors, called genes, which are discrete physical particles present in all living organisms" (3).

Before the time of Darwin's theory, it had been believed that the genes of a man's two parents not only were intermediated to him, but the heredity factors of his ancestors also passed on to him. Darwin had at one time glimpsed, that heredity was particulate, not blending. The very same statement was rediscovered and demonstrated by Mendel. Mendel said that every gene came from a particular one of his/her grandparents to whom that must have come from their great grandparents. Phenotypes are influenced by genotypes; that means: bodily forms and behaviours are influenced by genes or heredity factors. If some phenotypes are better than others and not influenced by genotypes, they remain unchanged. If genotypes produce above average, the genes must have come from his ancestors. Hence the genes, which must have come from high-fitness genotypes, remain unaltered whereas the genes, which have come from low-fitness genotypes, will pave the way for natural selection. The natural selection enhances the adaptability. Hence personality development is possible either by genotype (heredity factors) or phenotype (external forces due to natural selection) effects. Darwin states, "Important changes in the embryo or larva will
almost probably entail changes in the mature animal” (8). Darwin supports adaptability which is another factor for evolution or devolution: “The whole organization seems to have become plastic, and departs in some small degree from that of the parental type” (9). Further he remarks, “Under domestication, it may be truly said that the whole organisation becomes in some degree plastic” (57). Both Buck and White Fang are adaptable to the core in order to survive. Darwin states,

... animals and plants a cross between two different varieties, or between individuals of the same variety but of another strain, gives vigour and fertility to the offspring; and on the other hand, that close interbreeding diminishes vigour and fertility; that these facts alone incline me to believe that it is a general law of nature that no organic being fertilises itself for a perpetuity of generations; but that a cross with another individual is occasionally –perhaps at long intervals of time –indispensable. (71)

The environmental factors, not only affect the human behaviour or attitude but also the gene. Meyyan comprises Mendel’s view on the reasons for the changes of gene,

Environmental factors such as food, light, temperature etc, exert considerable influence on gene expression in several cases. These environmental factors influence the frequency and grade of expression of the genes. The term penetrance refers to the percentage of frequency with which a gene produces its phenotypic effect. If dominant genes in homozygous or
heterozygous state or recessive genes in homozygous state always produce their effect, they are said to have complete penetrance. (41)

Based on Mendel’s concepts, Meyyan highlights, “If homozygous or heterozygous dominant genes or homozygous recessive genes fail to produce phenotypic effect in all the cases, they are said to have incomplete penetrance” (41-42). If the gene fails to bring up behaviour or an attitude in a man, that gene must have an incomplete effect. Mendel also has stated that food is another factor for changes. Bateson translated Mendel’s remarks on mutation, due to the presence of amino acids: “The mutations of primary concern are point mutations, which consist of single changes in the nucleotide sequence….However, when base changes result in new amino acids, new proteins appear. These new proteins can alter the morphology or physiology of the organism and result in phenotypic novelty or lethality”(145-147). Darwin quotes, “Changed habits produce an inherited effect, as in the period of flowering of plants when transported from one climate to another. With animals the increased use or disuse of parts has had a more marked influence”(8). Darwin further stresses,

Climate plays an important role in determining the average number of a species, and periodical seasons of extreme cold or drought, I believe to be the most effective of all checks…Even when climate, for instance extreme cold, acts directly, it will be the least vigorous individuals, or those which will suffer most. When we travel from south to north, or from a damp region to a dry, we invariably see some species
gradually getting rarer and rarer, and finally disappearing... (50)

Meyyan expounds Mendel’s concept of Mutation, “It is a sudden change of a
gene or chromosome from one form to another. It can be classified into various
types like, somatic, germinal, gametic, zygotic, dominant, recessive, back,
lethal, spontaneous, induced, macro, micro, gene, chromosomal and biochemical
mutation” (198-209). Among these types, dominant, recessive, back, induced,
macro and micro mutations are applicable to this study. Dominant mutation is,
“when mutation produces a dominant gene it is called dominant mutation. The
dominant mutation expresses its character immediately” (198). Meyyan
expounds Mendel’s type of mutation “Some mutations are large with prominent
phenotypic effects. These mutations are called macro mutations” (199). “Back
mutation is the reversion of mutation. Rarely a mutant gene changes into the
original gene. It is otherwise called reverse mutation” (199). Recessive mutation
is, “when the mutation of a gene produces recessive gene, it is called recessive
mutation. Most of the natural mutations are recessive in nature. When mutation
is recessive, the character is not expressed immediately; but it is expressed only
when the mutant gene occurs in double doses” (198-199). Meyyan illustrates
Induced Mutation according to Mendel is, “Mutations caused by external factors
constitute induced mutations” (199).

Mutation is the ultimate origin of genetic variation. There are various
reasons why gene-frequencies might change: immigration, emigration, random
drift, and natural selection. Immigration, emigration and random drift are not of
much interest from the point of view of adaptation, although they may be quite
important in practice. It is natural selection which accounts for the perfection of
adaptation, for the complex functional organization of life, and for such progressive qualities as evolution may exhibit. Genes in bodies exert an influence on the development of those bodies. Some bodies are better at surviving and reproducing than others. Evolution under the influence of natural selection leads to adaptive improvement. Evolution, whether under the influence of natural selection or not, leads to divergence and diversity.

Darwin’s “Theory of Evolution” can be summarized as follows:

1. Variation: There is variation in every population.
2. Competition: Organisms compete for limited resources.
3. Offspring: Organisms produce more offspring than can survive.
4. Genetics: Organisms pass genetic traits on to their offspring.
5. Natural Selection: Those organisms with the most beneficial traits are more likely to survive and reproduce.

In the chapter “Variation” Darwin states,

Even strongly-marked differences occasionally appear in the young of the same litter, and in seedlings from the same seed-capsule. At long intervals of time, out of millions of individuals reared in the same country and fed on nearly the same food, deviations of structure so strongly pronounced as to deserve to be called monstrosities arise; but monstrosities cannot be separated by any distinct line from slighter variations. All changes of structure, whether extremely slight or strongly marked, which appear amongst many individuals living together, may be considered as the indefinite effects of the conditions of life on each individual organism, in nearly the same manner,
according to their state of body or constitution, causing coughs or colds, rheumatism or inflammation of various organs. (6)

Jack London has simplified the above statement in his twin novels. Such individuals, Buck and White Fang, are affected by temperature, food habits and environment, which are analysed with appropriate proofs, in the next chapters. Darwin remarks, "Divergence of character may be explained, how the lesser differences between varieties will tend to increase into the greater differences between species" (48). Darwin states,

The laws governing inheritance are for the most part unknown. No one can say why the same peculiarity in different individuals of the same species, or in different species, is sometimes inherited and sometimes not so; why the child often reverts in certain characters to its grandfather or grandmother or more remote ancestor; why a peculiarity is often transmitted from one sex to both sexes or to one sex alone, more commonly but not exclusively to the like sex. It is a fact of some little importance to us, that peculiarities appearing in the males of our domestic breeds are often transmitted, either exclusively, or in a much greater degree, to males alone. (10)

London obeyed the above law. So the protagonists (Buck, White Fang and Martin Eden) are male. Darwin remarks, "Having alluded to the subject of reversion, I may here refer to a statement often made by naturalists – namely, that our domestic varieties, when run wild, gradually but invariably revert in character to their aboriginal stocks" (10). Darwin stresses, "If it could be shown
that our domestic varieties manifested a strong tendency to reversion, -that is, to lose their acquired characters, whilst kept under the same conditions, and whilst kept in a considerable body, so that free intercrossing might check, by blending together, any slight deviations in their structure, in such case, I grant that we could deduce nothing from domestic varieties in regard to species” (11). Darwin remarks, “Domestic races of the same species, also, often have a somewhat monstrous character…” (11). Monstrosity is apparent in London’s protagonists. Darwin states,

In attempting to estimate the amount of structural difference between the domestic races, we are soon involved in doubt, from not knowing whether they are descended from one or several parent species. This point, if could be cleared up, would be interesting; if, for instance, it could be shown that the greyhound, bloodhound, terrier, spaniel and bull-dog, which all we know propagate their kind so truly, were the offspring of any single species, then such facts would have great weight in making us doubt about the immutability of the many closely allied and natural species –for instance, of the many foxes –inhabiting different quarters of the world. I do not believe, as we shall presently see, that the whole amount of difference between the several breeds of the dog has been produced under domestication; I believe that a small part of the difference is due their being descended from anyone distinct species. In the case of strongly marked races of some other domesticated species,
there is presumptive or even strong evidence, that all are descended from a single wild stock. (12)

So domestication of wild animals brings a lot of changes in their genes and behaviours. Darwin also stresses indirectly some other factors are responsible for changes apart from climate, "Has the little variability of the ass and goose, or the small power of endurance of warmth by the reindeer, or of cold by the common camel, prevented their domestication?" (12). Those factors are probably food, safety and love provided by masters to animals for their domestication. Darwin remarks, "In a breed, which has been crossed only once with some distinct breed, the tendency to reversion to any character derived from such cross will naturally become less and less." (18). Darwin stresses, "One of the most remarkable features in our domesticated races, that we see in them, adaptation, not indeed to the animal’s or plant’s own good, but to man’s use or fancy (20). The term Darwinism is used for the evolutionary ideas of others, including Spencer’s "survival of the fittest" as free market progress, and Ernest Haeckel’s racist ideas of human development. Darwin did not share the racism common at that time. He was strongly against slavery, against ranking the so-called races of man as distinct species and against the ill-treatment of the people.

In the chapter “Natural Selection”, of Origin of Species Darwin states,

In a world of stable populations where each individual must struggle to survive those with the “best” characteristics will be more likely to survive and those desirable traits will be passed to their offspring. These advantageous characteristics are inherited by following generations, becoming dominant among the population
through time. This is natural selection ... This preservation of favourable individual differences and variations, and the destruction of those which are injurious, I have called Natural Selection, or Survival of the Fittest. (58)

In this book, he has dealt with the reason, why a species leads to adaptive improvement – natural selection. Walcutt remarks that Darwin employs the positive method to show how natural selection operates to produce new species; "It challenged the teleological concepts of purpose and design in the universe. For it attributed the physical changes of evolution to millions of accidents, innumerable false starts, and the pitiless waste of individuals and even of whole species. Studying man in the perspective of his biological development, it inevitably emphasized his animal nature" (7-8).

Ursula Goodenough quotes,

The Darwin – Wallace Theory of Natural Selection, proposed by Charles Darwin and A. Wallace in 1858, is unquestionably the cornerstone of modern evolutionary theory. Darwin envisioned selection as a two-step process. He realized, first, the variation had to exist within a population. Second, he proposed that the fittest members of the population would be at a selective advantage and would be most likely to transmit their genes to the next generation. When selection favours individuals at one extreme of the distribution, it is said to be directional. Selection is diversifying when two extremes are favoured at the
expense of the intermediate, whereas selection is stabilizing when intermediate phenotypes are favoured. (823)

A man may evolve into a super human, or remain as a man, or degrade himself to a beast. The prime reason for the above change is some influences. They may be either innate or stimulated by some external forces. The factors, which influence a person into another personality, may be progressive or regressive. Development may follow either a progressive (forward) movement or a regressive (backward) movement. Robert Tamarin expounds the theory of Mendel’s Natural selection in glossary of his edition, “The process in nature whereby one genotype leaves more offspring than another genotype because of superior life history attributes such as survival or fecundity” (10). Darwin states, “I estimated that the winter of 1854-5 destroyed four-fifths of birds in my own grounds” (50). The classification of genetics is classical, molecular and evolutionary genetics. Robert H. Tamarin quotes, “From a genetic standpoint, evolution is the change in allelic frequencies in a population over time. Charles Darwin described evolution as the result of natural selection” (13). According to evolutionary genetics, evolution is the change in allelic frequencies in a population over time. “Allelic frequency” means the same character of two genes. If the product carries the same character of another, this evolutionary change is known as evolutionary genetics. Darwin states, “Finally, I conclude that, although small isolated areas probably have been in some respects highly favourable for the production of new species, yet that the course of modification will generally have been more victorious over many competitors, will be those that will spread most widely, will give rise to most new varieties and species, and will thus play an important part in the changing history of the organic
world" (80). The behaviour of an untrained wolf is different from that of a trained wolf. Darwin states, "If we were to behold one kind of wolf, when young and without any training, as soon as it scented its prey, stand motionless like a statue, and then slowly crawl forward with a peculiar gait; and another kind of wolf rushing round, instead of at, a herd of deer, and driving them to a distant point, we shall assuredly call these actions instinctive" (195-196). The following words prove that a wolf has been evolved into a dog due to civilization and domesticity. Darwin states, "... for example, Le Roy describes a dog, whose great-grandfather was a wolf, and this dog showed a trace of its wild parentage only in one way, by not coming in a straight line to his master when called" (196). Darwin explains how a wild species has been evolved into a pet dog, "Some authors believe that long-continued domestication eliminates this strong tendency (wilderness) to sterility: from the history of the dog I think there is some probability in this hypothesis, if applied to species closely related together, though it is unsupported by a single experiment" (18). Darwin has proved that evolution is possible for an animal or plant, if it is either practiced so or under domestication. For example, the tiny buried-hind limb bones of whales are remnants of the walking legs of their terrestrial ancestors. As London had a passionate belief in evolution, he applied the same concepts in his works. The different breeds of dogs are trained for different purposes. Darwin states, "Savages now sometimes cross their dogs with wild canine animals, to improve the breed, and they formerly did so, as is attested by passages in Pliny" (23). Darwin replies to the question: when a dog was stopped crossing with wild animals, "Thus, a man who intends keeping pointers naturally trying to get as good dogs as he can, and afterwards breeds from his own best dogs, but he has no wish or expectation permanently altering the breed" (24). Further Darwin remarks, "How strongly these domestic instincts, habits and disposition
inherited, and how curiously they become mingled, is well shown when different breeds of dogs are crossed. Thus it is known that a cross with a bulldog has affected for many generations the courage and obstinacy of greyhounds; and a cross with a greyhound has given to a whole family of shepherd dogs a tendency to hunt hares” (196).

Spencer adapted the theory of evolution into a social system in which those individuals, species, or races with the best acquired characteristics would survive. Spencer’s writings were particularly responsible for the rise of Social Darwinism in the late nineteenth century. The theory of Social Darwinism and Spencer’s “survival of the fittest” influenced London to write on evolution. Social Darwinists believed that societies, as do organisms evolve over time. Nature then determined that the strong survive and the weak perish. In Jack London’s case, he thought that certain favored races are destined for survival. Certainly the Anglo-Saxon and Teutonic races, represented for London, the superior. At the brawling end of the nineteenth century, London’s thought was developed out of the ferment of socialism and Darwinian beliefs and later he became a Spencerian evolutionist. London was a voracious reader of Herbert Spencer’s works. Spencer was closely linked to Darwin in London’s thought. Due to that influence, he has written in a letter to his friend Cloudesley Johns and summarized Spencer’s major laws: “Matter is indestructible; motion is continuous; Force is persistent; the transformation of forces is the equivalence of forces” (Hendricks and Shepard 101). Here the forces may be generated within oneself or from the environment. In that same letter London stressed on Spencer’s words. “Obviously, Spencer’s appeal was his assurance that there was a “scientific” basis for eventual liberation of individuals and possible harmony for them within their environment” (Spencer 513). Hence London agrees that
there will be no harmony, unless an individual changes himself or adapts himself to the environment. Earle Labor quotes,

All can hope to do is to identify some of the more important factors—some of the urgent needs which cause us to read, some of the basic characteristics of fiction which enable it to satisfy those needs. By using canine rather than human protagonists, London was able to say more about this situation: and he highlights the statement of London as: Every autobiography implies a theory of human nature, and Jack London’s is a straightforward, unrepentant one. For him, environment is the determining factor in human action. Man is an animal and is at the mercy of biological determinism”. In the essay “What Life Means to Me” (Cosmopolitan, March 1906), London bluntly states, “My environment was crude and rough and raw. I had no outlook, but an uplook rather.” It is this “uplook” that he spends a lot of time on in his various self-portraits as he depicts his instinctive desire for survival in a hostile world. (142)

London derived from Spencer the belief that all things are interrelated. Spencer has contended that everywhere in the universe one can see the incessant redistribution of matter and motion, expressed by evolution and dissolution. The final result of the process in society or in an organism is the achievement or equilibrium. Spencer acknowledged ultimately an unknowable factor acts as a driving force behind the system of equilibrium. Spencer applies,
Darwinian natural selection to societies and explains the movement of societies from homogeneous to more heterogeneous groups, from uncivilized to civilized stages. (Spencer 341-42) He argues a priori that each stage of evolution initiates a higher stage (Spencer 435) and ignores the possibly bleak implication of his view of entropy. (Spencer 514) He cheerfully asserts:

After finding that from it are deducible the various characteristics of Evolution, we finally draw from it a warrant for the belief that Evolution can end only in the establishment of the greatest perfection and most complete happiness. (Spencer 517)

Spencer’s ideas electrified London’s mind. London derives the theory of evolution from Charles Darwin, and from Herbert Spencer he learns that the process is not arbitrary, but actually tending toward harmony and an integrated, happy society. London firmly believed in evolution and determinism, and the influence of heredity and the milieu, as evidenced by much of his work and abundant notes. Countless of his story outlines the fact with evidence that he intended to dramatize the influence of heredity and the environment, such as the following:

Write a book in two parts – Part 1 – begin with father and mother and develop the heredity, all the potencies of the boy. Then a healthful environment that realizes the good potencies, defeats the bad ones, or even makes the bad ones powerful for good. Part 2 – take some basis, same father and mother, same baby and
bad environment and work out a different life.

(Tavernier and Courbin 49)

Spencer placed so much importance on the "struggle for existence" and the "survival of the fittest" that he could not look with approval on any organized exercise of the social wills that might in any way protect the unfit. But Spencer used his evolutionary philosophy to justify predatory capitalism and the elimination of the "unfit" in sweatshops or mine explosions. "In the evolutionary scheme of things, certain laws have to be obeyed. Man may be a higher animal, but his survival, like that of all animals, depends on his adaptability—and London always represents himself as a very adaptable animal" (Labor 143). The similarity between man's and dog's method of survival suggests that both obey such laws because both are part of the evolutionary process. Man is merely a higher order of animal, and his survival, his progress towards a higher state, are dependent upon his adaptability. Although London struggled fiercely to succeed after he returned from the Klondike, he asserted that he did not believe in free will. When London delivered a public speech on Environmentalism, for the Ruskin club, on February 8, 1902, he insisted "So we must conclude that there is no such thing as free will. Environment determines absolutely; the individual moves along the line of least resistance". Although London believed that one does not have control over one's volition, that environment determines absolutely, he thinks that human action alters his environment and thus leaves room for his own intervention in the historical process—how else can he strive equally hard as a writer. In the Northland, environmental and hereditary traits are more forcefully evident because of the heightened struggle. Under stress, the naturalists believed that man showed his latent animal traits—his atavism—and reverted to that state. Atavism (back to savagery) is a salient feature of naturalism.
Among the ten children of Charles Darwin, two died during their infancy and Annie Darwin died when she was ten years old. Till her death, Darwin had visited the Anglican Church regularly as a Unitarian Christian. Her death made him to become an atheist. In due course his atheism turned him to be a naturalist. In the chapter "Descent of Man" of The Origin of Species, Charles Darwin states, “How so many absurd rules of conduct as well as so many absurd religious beliefs have originated. We do not know; nor how is it that they have become, in all qualities of the world, so deeply impressed on the minds of men; but it is worthy of remark that a belief constantly circulated during the early years of life, while the brain is impressionable appears to acquire almost the nature of an instinct; and the very essence of an instinct is that it is followed independently of reason" (122). London was influenced by his views on Naturalism also. Walcutt says on realism of London,

London’s special genius appears in his command of detail and pace. He knows how to produce realism and suspense by giving the minutest factual items of a situation –and how on the other hand to jump over large areas of fact and make the reader supply the information or the meaning. He can bring the most seasoned sophisticate to the edge of his chair and have him fidgeting with anxiety as a story builds toward its climax. (44)

The prefaces of Emile Zola’s plays are essays on Naturalism, especially in Therese Raquin (1867). Zola was influenced by the writings of
Honore’ de Balzac, Claude Bernard, Charles Darwin, Jules Michelet and Hippolyte Taine. He influenced George Orwell, Tom Wolfe and Naturalist Literature. For Zola, subjects appropriate to naturalism could be, (1) those based on scientific findings, in which the playwright establishes real character and allows them to interact according to inevitable laws of heredity and environment (2) those which faithfully record events observed in real life. Of this kind Zola states in the Preface of *Therese Raquin*, “Instead of imagining an adventure complicating it, preparing stage surprises which from scene to scene will bring it to a final conclusion, one simply takes from life the history of a being, or of a group of beings whose acts one faithfully records” (Rothwell ix). Further he states, “I am waiting for some one to put a man of flesh on the stage, taken from reality, scientifically analyzed, and described without one lie. I am waiting for some one to rid us of fictitious characters of these symbols of virtue and vice which have no worth as human data. I am waiting for environment to determine characters and the characters to act according to the logic of facts combined with logic of their own disposition” (xi). These words show the impact of Darwinism in his mind. When Zola wrote essays around 1883, Freud was to write *The Interpretation of Dreams*. As he wished, his facts are proven scientifically. Zola’s work *La Bete Humaine* (1890) means “The Beast in Man”. London was impressed by the thoughts of Zola.

‘I am simply an observer, who states the facts...’ –Emily Zola

Emile Zola (1840-1902) was a contemporary of Mendel and Darwin. Realism focuses on literary technique whereas Naturalism focuses on philosophical position. Emile Zola’s phrase “human beasts”, can be studied through their relationships to their surroundings. He described this method in *Le roman experimental* (*The Experimental Novel*, 1880). Besides Emile Zola, the other influences on American Naturalists are Herbert Spencer and Joseph Le
Conte. Naturalist writers believed that the scientific laws behind the forces that govern human lives might be studied and understood. Donald Pitzer states “The naturalistic novel can be described that the protagonists will be conditioned or controlled by environment, heredity, instinct or chance” (10-11). Characters in the naturalistic fictions are frequently ill-educated or lower-class characters whose lives are governed by the forces of heredity, instinct and passion. The key themes of naturalism are survival, determinism, violence, taboo, survival of the individual and brute within each individual.

London’s stories of the Klondike are still valid because the Gold Rush was an actual experience of Americans in the actual part of the continent; the Darwinian struggle for survival at that time was a foremost preoccupation in American thought. In his stories, “London asserts the Kiplingesque myth of the superior White Race, but he also adapts it to a naturalistic framework. For the survival thesis is clearly Darwinian in import. Too, the tone in which the survival and natural selection principles are adumbrated is obviously naturalistic” (Ownbey 87). The naturalistic novel must be a documentary novel based solidly on physical reality and crammed with facts and data actually seen and experienced. Reality, hard and brutal as it might be, must be described with an exact minuteness of detail. The novelist must collect human documents through careful preparation and endless toil. Zola, the father of naturalism, thoroughly has researched the topics he dramatizes. In fact, Zola has compiled an enormous amount of documentation and has files on most things. The attitude of the naturalistic writer towards his material must be one of utter noninvolvement, abstaining from positive or negative comments, presenting facts objectively, never showing his own personality or turning to the reader for sympathy. The naturalistic novel should neither preach nor satirize but only
dramatize human life objectively and draw no conclusions, as the conclusions are implicit in the material. Zola has wanted the naturalistic novel to be a powerful social tool, but he feels that an accurate and objective picture of society and mankind presented with clinical detachment is more effective than a compassionate dramatization of man's misery. Zola believes that morality is no more relevant to art and literature than to science. Thus moral implications have no place in the naturalistic novel, which should never condemn its characters for their actions. The naturalistic novel is therefore "amoral" in the sense that it recognizes no relevance to morality. So the naturalists were previously damned as "immoral", in particular, because of their frank portrayal of sex. Indeed it frankly portrays all aspects of human life, such as prostitution, free love, social misery which are the burning questions of the day.

Finally Zola believes that just as animals are transformed by the surroundings in which they live and which they have to adapt in order to survive, human beings are also fashioned by their environment and become amoral. He feels that man cannot be separated from his milieu: that his clothing, his house, his city, his province, which is all part of him and that everything, takes place in his heart or in his mind, is motivated by his milieu and in turn affects that same milieu. He sees these concepts as basic facts of life over which man has no control: the influence of heredity and the environment. A healthful environment that realizes the good potencies defeats the bad ones or even makes the bad ones powerful for good and a bad environment with same baby, same mother and same father, London works out differently. He employs bad parents and bad environment for Buck; and bad parents and good environment for White Fang. He finds changes in their destiny. Like other naturalists, London shows that a deterministic inevitability characterizes all the encounters. Though
man appears "civilized," the various episodes reveal that within every creature is a latent atavism. The pressure of environment coupled with a biological inclination towards man's animal nature combine, to prove the Darwinian Theory for London. His first collection of stories introduces the plots, characters, and themes that link London significantly with American literary naturalists. These stories describe man's attempts to survive against the forces of nature, the threat of savages, and the competition with other fortune seekers in the North Country. One new concept is predominant in his works: his adaptation of a Darwinian inspiration, the superiority of the "inevitable" white man.

The theory of naturalism that was established by Zola also has evolved into many facets. The evolution of naturalism can be briefly stated. While the evolution of naturalism was going on in one side, the spiritualists who believed in divine nature, soul and body were also there behind the development of naturalism in American thought. In due course, the pessimists were increased in size, due to the deterioration of man's faith in Nature and God. Nature is the physical expression of divine reason and in its laws it reveals the forms and purposes of God. The scientific penetration of nature has become a spiritual quest, therefore, into absolute being. The philosophical basis of this quest is monistic: spirit and nature, soul and body, are various expressions of one unified reality. This monism is the dream that glows behind naturalism in American thought. Time and experience divide it into streams of optimism and pessimism, freedom and determinism, will and fate, social reformism and mechanistic despair. "When the Nature which was assumed to be a symbol and version of God and of man's spirit grew under scientific analysis into a force which controlled man's will and presently made it seem an illusion, then it became
alien and terrifying; and man's nature too revealed, upon further exploration, depths that were repellent rather than godlike" (Walcutt 12).

In the eighteenth century nature was sentimentalized under a myth that human nature was the pattern and model of reason: The proper study of mankind is man. Literary naturalism has some major themes and motifs:

They are determinism, survival, violence and taboo. The theme of determinism, which is of course basic, carries the idea that natural law and socioeconomic influences are more powerful than the human will. The theme of survival grows out of application of determinism to biological competition; the theme of violence grows with the transfer of emphasis from tradition to survival. Animal survival is a matter of violence, of force against force; dangling from survival and violence, comes as an assault on taboo: sex, disease, bodily functions, obscenity and depravity, which are to be found in the province of physical survival. (Walcutt 20-21)

In that province, where the naturalists focus their attention, cannot be ignored. The forms which the naturalistic novel assumes are "clinical, panoramic, slice-of-life, stream of consciousness, and chronicle of despair" (Walcutt 21). When these forces operate in or through the whole body of society, a panoramic novel appears. The minute and faithful reproduction of some bit of reality, without selection, organization, or judgement, every smallest detail presented with "scientific" fidelity, is the formless form of a slice-of-life novel. The same approach, but to the content of the mind rather than to the external reality, gives a stream of consciousness novel, in which every smallest detail of thought is
presented without selection, organization, or judgement. And finally there is the chronicle of despair, in which a whole life is depicted as the weary protagonist trudges across the dreary wastes of the modern world and finds, usually, an early death.

Walcutt comments, "Zola is the fountainhead of naturalism, in a double and possibly a triple sense. He is a source of naturalistic theory, he is a model for many novelists, and he is to a lesser degree a source of critical method in the interpretation of fiction" (30). The naturalism in Zola's novels appears, not in the operation of heredity forces but in the themes and motifs - violence, taboo, and the concept of determinism replacing the old moral setting in which characters are free to choose and therefore responsible for the consequences that follow. In the work of Zola, heredity forces and mechanistic psychology have very much the same status. Zola admits that naturalism is only a method and the works remain apart. Zola himself seems to be using the words, form and method very loosely. Critics of American literary naturalism have spent much more time in dissecting the characters with some forces such as environment, heredity, instinct, and chance. Naturalism has its roots in the renaissance, its background in the Middle Ages. The medieval idea is that man was of a fallen creature in a dualistic universe. This dual universe was divided into heaven and earth, God and Satan, eternal and temporal, and in man, soul and body. Its value point is always towards the eternal, towards salvation and God - away from the temporal, the worldly, and the natural; for nature is under God's curse. Man too, by his own fall, is under God's curse. Having both body and soul, he is torn in the eternal battle between good and evil. Man's physical nature - his desires and instincts - is, by and large, the Devil's playground; it has contributed to the original Fall and it continues to corrupt his will and his reason. He firmly asserts that all phenomena are subject to physical laws. Lynn explains, "The literary
naturalists attempted to apply the uses of scientific inquiry to the creation of fiction. From Zola’s “experimental novel” emerged an array of concepts ranging from Darwinian characters motivated entirely by animal instinct to themes, plots, and setting that were not scientific in any sense, but naturalistic. London has experimented the destiny of the two different characters Buck and White Fang by keeping them grown in two different environments” (75).

London also eagerly read Ernest Haeckel’s book The Riddle of the Universe, in which the German biologist proposed the essential unity of organic and inorganic nature. Haeckel believed that living protoplasm was first developed by spontaneous generation, and he supported Lamarck’s theory of the inheritance of acquired characteristics. Haeckel’s ideas appealed to London because of his attack on Christianity and spiritualism. He believes on a new trinity: truth, beauty and virtue impressed London very much. “Haeckel and Spencer appealed to London because of their “scientific” explanation of fundamental laws of nature” (Labor 46). Obviously, Spencer’s appeal is his assurance that there is a “scientific” basis for eventual liberation of individuals and possible harmony for them within their environment” (Spencer 513). Johnston compares London with Haeckel and Spencer.

Haeckel’s monism held that there was “one sole substance in the universe which is God and nature, body and spirit or matter and energy”. Like Spencer, he explained that the fundamental laws of nature were the chemical law of the conservation of matter and the physical law of conservation of energy. (Johnston 45) Herbert Spencer converted Darwin’s biological hypothesis into a cosmic generalization. Walcutt remarks,
Darwinian hypothesis could have been interpreted as defining a condition of endless and hopeless flux, in which improvement and decay alternated with no discernible purpose. But Spencer affirmed that once society had evolved to perfection it could maintain itself in that state indefinitely. But Spencer placed so much importance on the "struggle for existence" and the "survival of the fittest" that he could not look with approval on any organized exercise of the social will that might in any way protect the unfit. (Walcutt 9)

After understanding these various theorists and their concepts, London applies them indisputably in his works, which have universal appeal.

Atavism is a biological term referring to the reemergence of inherited ancestral traits in a person. Mendel's (the father of genetics) research was rediscovered at the turn of the century and it demonstrated what Darwin himself had at onetime dimly glimpsed, that heredity is particulate, not blending. Whether or not offspring are bodily intermediate between their two parents, they inherit, and pass on, discrete hereditary particles – which are nowadays called genes. An individual either definitely inherits a particular gene from a particular grandparent or it does not. Every one's gene comes from a particular one of his or her great grandparents. This argument can be applied repeatedly for an indefinite number of generations. Discrete single genes are shuffled independently through the generations like cards in a pack, rather than being mixed like the ingredients of a pudding. If heredity is particulate, natural selection really can work. If the genes disappear, it will be because of bad luck, or because of natural selection – because something about those genes influences
the probability that individuals possessing them will survive. The presence of atavism argues greater adaptability in its possessor, for it means that he has not been frozen into a rigid pattern. From atavism he moves by natural steps to the superman, whom he considers at one time to be superior because he is non-moral and, at another, an anti-social irritant who cannot survive in the complex modern world. He attaches virtue presently to will and self assertion, now to social adaptability. When such atavistic power surges up, nothing can safely oppose them, and they exult in the glory of it. London’s heroes are likely to evince this atavism when they are thrust into the struggle for survival under brutal frontier conditions.

London’s works are best remembered for naturalism. John Perry argues, “Instead of evolving according to the progressivism of Herbert Spencer and Benjamin Kidd, Buck regresses both morally and socially” (Stille 8). His argument to stand as a leader like Buck was his own view but Buck is devolved into an unbeatable leader. London had a strong belief in the fact that man’s character is determined by heredity and environmental factors, as the father of psychology, Sigmund Freud (1856-1939) and his contemporary Carl Jung (1875-1961) have proved. One’s adaptability for survival depends on one’s nearness to a primitive state, because he would be closer to that than any other influences. Freud tells in his work *Civilization and Its Discontent*,

We came upon a contention which is so astonishing that we must dwell upon it. This contention holds that we call our civilization is largely responsible for our misery, and that we should be much happier if we gave it up and returned to primitive conditions. I call this contention astonishing because in whatever way we
may define the concept of civilization, it is a certain fact that all the things with which we seek to protect ourselves against the threats that emanate from the sources of suffering are part of that very civilization (91).

Sigmund Freud says that such type of primitivism lingers in the deepest part of one's consciousness. Simply it is called "id". Cowardice argues unfitness in the struggle for existence more directly than dishonesty, deceit, or any of the "moral" failings which would impair a man's status in a more civilized community. The structure of the personality consists of id, ego and super ego. The id consists of everything psychological that is inherited and that is present at birth, including the instincts. It is the reservoir of psychic energy and furnishes all the power for the operation of the other two systems (ego and super ego). Freud said that the ego represents reason and good sense. It is emerged between the needs of instinct and the demands of a society. Freud believed that personality develops in a series of stages from birth to maturity which is called "progressive", and if it is in reverse, it is known as "regressive". The super ego, is the last system of personality to develop, represents the voice of morality, the rules of parents and society.

Unconscious thoughts find expression in dreams, slips of the tongue, apparent accidents and even in jokes. Wade and Tavris remark, "After analyzing many dreams, including some of his own, Freud concluded that our nighttime fantasies provide a 'royal road to the unconscious' (387). Dreams are constructed through highly complicated intellectual activity. The reason for animal's dream is stated by Freud in his work, The Interpretation of Dreams, "I do not myself know what animals dream of. But a proverb to which my
attention was drawn by one of my students, does claim to know. 'What,' asks
the proverb, 'do geese dream of?' And it replies: 'Of maize'. (A Hungarian
proverb 'pigs dream of acorns and geese dream of maize') The whole theory
that dreams are wish-fulfillments is contained in these two phrases" (165).

Wade and Tavris remark, “Psychology is defined as the scientific
behaviour and mental processes and how they are affected by an organism's
physical state, mental state and external environment...Psychology's main goals
are to describe, understand, predict and control or modify behaviour and mental
processes” (1-2). Mental process is not for animals -this statement is to be kept
aside because Buck and White Fang are not to be seen as animals, here they are
personified as central characters. Charles Darwin accepted a mind-body
dualism, the inevitable controversy followed about whether animals had
consciousness and, if so, to what degree; and how low one must go to simpler
forms before consciousness ceased. The controversy ended in a stalemate, and to
be resolved by later animal psychologists and the behaviouristic movement. This
movement concluded that the study of mind was impossible, and one might
better look to the observable behaviour and forget about whether or not minds
existed. The importance of behavioural aspects along with biological aspects of
animals influenced him.

Wade and Tavris quoted the words of Freud, “No mortal can keep a
secret. If the lips are silent, he chatters with his finger tips; betrayal oozes out of
him at every pore” (18). Sigmund Freud (1856-1939) viewed aggression as a
basic human instinct lodged in the unconscious part of the mind. Charcot, Freud,
Janet, Mc Dougall, and Stern are categorized as Personality theorists and
Helmholtz, Pavlov, Thorndike, Watson and Wundt are experimental
psychologists. The experimentalists derived their inspirations and their values
from the natural sciences while Personality theorists remained closer to clinical data and their own creative reconstructions. Hall and Lindzey expound the concept of Freud, in the chapter ‘The Nature of Personality Theory’, “Two generalizations are concerning personality theory. First, it is clear that personality theory has occupied a dissident role in the development of psychology. Second is that personality theories are functional in their orientation. They center about issues of crucial importance for the survival of the individual” (3). One of the key themes of Naturalistic writings is ‘survival of the individual’. The personalities of Buck, White Fang and Martin Eden who are erected as icons of individuals, are entirely changed, in order to survive. The process of civilizing the individual involves the formation of a mask behind which the real person lives. This mask comprises all the characteristics and qualities expected of the individual in his chosen position. This mask also inhibits and controls the rest of the personality, in particular the shadow. The shadow is the other side of the personality repressed by the mask. It is the primitive, uncontrolled, vital, and animal part of any human being. As Sigmund Freud and Jung, the contemporaries of London, have stated, London has poised both the heredity and environmental factors in Buck, White Fang and Martin Eden.

The idea of the survival of the superior organism, together with his ego’s enormous demand for identification with the American promise of success, created in London, a powerful drive for learning and literacy as a way of victory over his circumstances. Hence self-identification became predominant in his works. Wade and Tavris quote, “Most psychologists study forces within the individual – biological, cognitive or motivational – that affect a person’s behaviour. An approach to psychology that emphasizes social and cultural
influences on behaviour is called the socio-cultural perspective” (22). It is clear that personality theorists have customarily assigned a crucial role to the motivational process. How one is motivated himself or herself. If he meets his basic needs, safety needs, love needs, esteem needs and Self-actualization, one after another, his personality gets evolved. These works, *The Call of the Wild, White Fang* and *Martin Eden* are not only enriched by the theories of his precursors but also paved a way for the readers to find out one more theory, Abraham Maslow’s Theory of Motivation. Maslow has brought forth the factors which involve elevating a man to find himself through a picture in a pyramidal shape.

Abraham Harold Maslow (1908-1970) was an American psychologist. He is noted for his conceptualization of a “Hierarchy of Human needs” and is considered as the father of humanistic psychology. Maslow has been a very inspirational figure in personality theories. Humanistic psychologists believe that in every person there is a strong desire to realize his or full potential, to reach a level of self-actualization. To prove that humans are not simply and blindly reacting to situations, but they are trying to accomplish something greater. Maslow created a visual aid to explain his theories; he called it the Hierarchy of Needs. It is a pyramid that depicts the level of humanistic needs, psychological and physical. When a human being executes the steps of the pyramid, that individual will have reached self-actualization. Maslow explains this concept in the chapter, “The Developing Person through the Lifespan”.

The bottom of the pyramid is the “Basic needs” of a human being, food and water. The next level is “Security and Stability”. These two steps are important to the survival of the person physically. Once the
individual has basic nutrition and shelter, then he instantly looks to accomplish more. The third level is "Love and Belonging" and this is a psychological need. Once an individual has taken care of himself physically, then they are ready to share themselves with others. The fourth step occurs when the person feels comfortable with what he has accomplished, and then he reaches "Esteem level". This level is success and status. The top of the pyramid is "Self-actualization" and that occurs when it is believed that the individual has reached a state of harmony and understanding. (44)
Maslow's Hierarchy of Needs (original five-stage model)

- **Self-actualisation**
  - personal growth and fulfilment
- **Esteem needs**
  - achievement, status, responsibility, reputation
- **Belongingness and Love needs**
  - family, affection, relationships, work group, etc
- **Safety needs**
  - protection, security, order, law, limits, stability, etc
- **Biological and Physiological needs**
  - basic life needs - air, food, drink, shelter, warmth, sex, sleep, etc

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Jack London's best assimilation of different theories of Charles Darwin, Gregor Mendel, Emile Zola, Herbert Spencer and Sigmund Freud without any controversies was composed in his master piece The Call of the Wild in a fine blend. This is the main reason for its huge publication till date, all over the world. All the above theorists stated their respective theories that would be understandable only for scientists and scholars through their works. But Jack London read and got assimilated them, and made those theories easily understandable even for a layman, through his writings. As he had understood all the theories of his precursors very clearly and applied as they are, his works
are free from any disputes or contradiction of the successors of the theorists who are still exploring their concepts. Hence his works are suitable to read all time. Certainly his attempts were a revolution in bringing a tremendous change in the public's mind and to be interested in those theories.