The Meaning of Hegel's Logic

Introduction

This article is intended to introduce the reader to a study of Hegel's Logic. It is not intended as a substitute for such a study or as a commentary upon the Logic.

The writing of this article is based on the belief that there currently exists no substitute for Hegel's Logic as an exposition of dialectics. Although Hegel's writing is very inaccessible and suffers as a result of his philosophical idealism, an understanding of dialectics cannot be achieved without a study of his Logic. Consequently, this article is intended to aid this study. Further, I have taken the liberty of a certain amount of repetition, so that the most important points will stand out in the reader's attention.

Following Lenin's advice, we recommend a "materialist reading" of the Logic. That is, where Hegel talks of a "spirit" which expresses or "posits" itself in Nature or human affairs, we read a law or process manifested or expressed by Nature or human activity; when Hegel starts talking about God, we skip to the next paragraph.

In The Science of Logic and the later and more accessible Shorter Logic the subject is "Logic". As Ilyenkov explains in his essays From the History of Dialectics, Hegel created a revolution in the understanding of Logic by, among other things, widening the field of observation from "propositional algebra" (formal rules governing how the truth of one proposition follows from that of another) to the whole field of materialisation of human practice - social-historical development, science, religion, industry. Consequently, in elaborating the general laws exhibited in the development of human practice, he necessarily also uncovered objective laws true to the objective material world as a whole. "Thought" in the sense in which Hegel is dealing with it, is not just the consciousness of individuals, or even concepts as social-historical products, but rather an intangible "spirit" which corresponds to these most general forms, and enters consciousness as something objective.
Thus, when Hegel talks idealistically about The Absolute Idea, Thought, The Architect, etc., etc., we are able to "translate" his line of reasoning in the same way phrases like "a falling stone obeys the law of gravity" is easily comprehensible without assuming that stones are "governed" by some kind of natural or Divine Parliament and Judiciary.

Nevertheless, it is sometimes difficult to grasp his thought at the level of pure logic ("logic" in the sense we use the word in phrases like "the logic of events" or "logic of development"). Because Hegel is elaborating general laws of the development of all processes and things, it is possible and legitimate to grasp his meaning by giving his words a particular slant or context or interpretation.

The most fruitful of such interpretations is as a "theory of cognition", that is, to read the Logic as if it were a description of the laws of development of scientific knowledge. It is also useful to interpret the Logic as a description of the "logic of development" of social processes and movements.

In addition to reading Hegel's Logic, or as an alternative, the reader might prefer to use the text this site.

The Meaning of Hegel's Logic

I: The Structure of The Logic

The Logic has a uniquely Hegelian structure in which the whole is built up from triads: triads each component of which itself is a triad and so on ad infinitum. Consequently, although Hegel wrote The Science of Logic and The Shorter Logic in a kind of narrative which begins with Pure Being and proceeds step-by-step, page after page to The Absolute Idea as the apex of the lot, it is very difficult to read like this. You need to know where you are.

For a start, you need to first understand the overall triad, which I will call (taking a slight liberty with Hegel's structure) Being - Notion - Absolute Idea.

(Actually towards the end of the Logic, the third parts start falling off so that the Logic does not spill over into a new book, but comes to a stop with the Absolute Idea. As presented in The Science of Logic, the Absolute Idea is the culmination of the Doctrine of the Notion. The Science of Logic is presented as Being - Essence - Notion).
Being - Notion - Absolute Idea

The world first appears in thought as "one damn thing after another", immediate perception. Laws and tendencies, form and content, cause and effect, etc., are all present in this world which presents itself to us, but these moments are not yet disclosed, they lie "behind" Being.

Some say that these "mediated" aspects are part of the subject and are imposed upon the object. But this is not true; they are part of the object which has yet to show itself; otherwise, how could they ever come into subjective consciousness (innate ideas, faith?). And even if they did, how could they be "true" unless we accept that apart from existing in consciousness they also exist in the objective world, and our subjective concepts correspond to the object.

This immediate perception, or the world "in-itself", we call Being.

Human practice and individual consciousness may be said to "reconstruct" the world in the form of the mental images we have of it. These "mental images" are not just "snap-shots" of the various objects and processes, but the laws and concepts such as form, likeness, causality, means and end, genus and species, etc., etc., by which we both recognise and understand reality and reproduce it in our practice.

This "reconstruction" of the world has the form of concepts, concepts which are not immediately given in perception, but are the product of a long period of historical development. This conceptual image of the world is an "Other" of the world, a copy or negative of the world, which is not identical with the world, but approximates it in an opposite or negative form. It is not immediate, but mediated. That is, it is a world built up not from bits and pieces coming one after another, but from general concepts. We could call it a theoretical version of reality.

This conceptual form of the world "for itself", we call the Notion.

When we act in the world as humans (rather than simply as lumps of hydrocarbon) we act both as part of the world, immediate actors and agents, driven by unconscious urges and the ordinary forces of Nature, and, as an Other, as conscious, social individuals expressing our theoretical Notion of the world by consciously negating it, translating an idea of the world as it ought to be and could be, and putting it into the world, changing the world to bring it into line with our more or less well-founded Notion of it.

Practice is action of a material subject in the world, according to its Notion. It is the return of the Notion to Being, the unity of Being and its opposite, the Notion.

There is always a "gap" between what we set out to do and what we actually do, between our theoretical idea and our practical idea. To the extent that our Notion of the world, is an adequate reconstruction of the world of Being, then the negation of Being
by the Notion approximates what Hegel calls the Absolute Idea - the world fully conscious of itself and acting with absolute self-consciousness.

This ultimate of absolute self-conscious practice we call the **Absolute Idea**.

The Absolute Idea is nothing but everything that leads up to it. Consequently, there is nothing for Hegel to say when he gets to this chapter of the *Science of Logic*, but give a kind of general summary of what has gone before.

The Absolute Idea is the Subject which has become identical with the Object, and is in this sense just a return to the beginning - but at a higher level.

**Being - Essence - Notion**

Between Being (Book I) - immediate perception, and the Notion (Book III) - the conception of immediate perception in terms of notions, lies Essence (Book II). Essence is to do with how something of which we do not yet have a Notion enters consciousness - how we first form a notion of something. Being is about Notion-less perception; Essence is about the genesis or Becoming of the Notion; the Notion is about the development or concretisation of a concept.

We can only begin to grasp something new in terms of the concepts we already have. These past notions have their source in Being, but they are "out of step" with the new. New Being meets with itself in past Being. The result is a contradictory development of perception in which the inadequacy of past notions is brought out in the form of internal contradictions which arise as we penetrate deeper into immediate perception.

As Hegel puts it in *The Science of Logic*:

> It may be said that cognition begins in general with ignorance, for one does not learn to know something with which one is already acquainted. Conversely, it also begins with the known; this is a tautological proposition; that with which it begins, which therefore it actually cognises, is *ipso facto* something known; what is not as yet known and is to be known only later is still an unknown. So far, then, it must be said that cognition, once it has begun, always proceeds from the known to the unknown. [*Science of Logic, Analytic Cognition*]

The Notion represents an Other to the world of immediate perception, which approximates to the object but in an opposite or negative form. The thing is "posited" in Being, but confronts a "negative" in the form of past Being contained in theoretical form (prejudice) in the Notion. The interpenetration of Being and Notion is called Essence - a contradictory process which leads to the identification of Being and the Notion, the modification of the Notion brought about by the successive resolution of internal contradictions, the struggle to understand what we are doing.
The triad

The above demonstrates the "triad" of Hegel which runs through almost every sentence of the *Science of Logic*. Most people who are about to study Hegel, will have heard of "thesis - antithesis - synthesis". Actually, Hegel never used this expression. This may be because the expression tends to imply a reference to what I call "propositional algebra". Also, "thesis" and "antithesis", like "positive" and "negative" imply a specific kind of opposition, namely polarity, in which the "thesis" and "anti-thesis" can have no separate existence and a kind of symmetry which limits the concept unduly. Nevertheless, I think "thesis - antithesis - synthesis" fairly well sums up the form of Hegel's triad and we should not be ashamed to use it.

It would be quite contrary to the spirit of Hegel to attempt here to give a "definition" of the triad. You will learn as you study the triad in its multifarious forms and development in Hegel's *Logic*. But the purpose of this article is to aid your reading, so you will forgive a brief and inadequate description.

At first something is put forward, is posited, presents itself. It presents itself also by way of negating something else, its negation, that which it is *not*. That which it is not may be what it *was*, it's *form* as opposed to its content, a *pre-conception* of it, or merely its *negative* pole - the "anti-thesis". This "other side" is essentially connected with the thesis, the thesis already contains implicitly the antithesis, as an inner contradiction within itself. A new and higher concept arises on the basis of conceiving both the thesis and antithesis in this way as *identical* with each other. Thus a new thesis is posited, .... and so on.

Examples are superfluous. The whole of the *Logic*, and hopefully the explanations to follow here, demonstrate this dynamic. In reading the *Logic*, you should look back and forward as you begin each new chapter and section, and try to keep a bearing on where you are in terms of triads. You should feel free to skip back and forth so as to ensure that you grasp a particular triad before going too far "into it". But at the same time, don't expect to fully understand a concept until you have read through it, and followed exactly how its own internal contradictions build up and pass over into the next concept.

**System and Method**

According to Engels, the progressive content in Hegel is his "method" as opposed to his "system" which constitutes an idealistically perfected *structure*. If we develop a habit of trying to adhere to Hegel's system or structure (and the same applies to Marxism) in our theoretical work, we run the danger of pushing reality into a straitjacket, of justifying what exists, of adapting to and rationalising reality, rather than criticising and revolutionising reality.
"Whoever placed the chief emphasis on the Hegelian system could be fairly conservative in both spheres [politics and religion]; whoever regarded the dialectical method as the main thing could belong to the most extreme opposition, both in politics and religion." [Ludwig Feuerbach, etc. Part I]

Systematicity is a property of the objective world. The adequacy of countless concepts of systematicity in Nature has been proved by practice. However, with Marx, the concept of system in philosophy was transformed from an absolute to a relative. As marvelous a creation as is Hegel's system of the Absolute Idea, it is absurd to suppose that we can build up a systematic Notion of the world by perfecting such a system, or at least that a single writer can do so within the scope of a single book.

"The proof must be derived from history itself ... This conception [historical materialism], however, puts an end to philosophy in the realm of history, just as the dialectical conception of nature makes all systems of natural philosophy both unnecessary and impossible. It is no longer a question anywhere of inventing interconnections from out of our brains, but of discovering them in the facts. For philosophy, which has been expelled from nature and history, there remains only the realm of pure thought, so far as it is left: the theory of the laws of the thought process itself, logic and dialectics". [Ludwig Feuerbach, etc. Part IV]

Method and System are concepts indicating aspects of a theory, roughly analogous to tool and result: For instance, Marx used a specific method in his critique of political economy, the dialectical materialist method; the product was a system of concepts - commodity, value, surplus value, abstract labour, alienation, etc., etc. - the system of Marxist political economy.

How are we to learn from the practice of the great thinkers of the past? How can we copy their way of working in different circumstances and in confronting different aspects of the world?

All systems of concepts reflecting the general laws of motion of different aspects or "levels" of movement are inter-related and inter-connected, but distinct and different. At the most general level of abstraction we may share the same method, but in considering different aspects of the world, we shall find different systems of concepts applicable. Thus in a sense the method is that aspect of a theory which is absolute, less specific and more "transferable"; while system denotes that aspect of a practice which is relative, more specific, less "transportable". The method is the inner structure, the system the outer form; the method is manifested in the system, but the method must be true to the system. The method is the "germ" of the system.

I do not believe it is any more possible to grasp Hegel's method without labouring through his system, than it is to grasp the method of natural science without studying a science. Hegel's Logic is hard reading and the reader will find a road map useful if she/he is going to appreciate the countryside. Consequently, in what follows I shall unashamedly give emphasis to Hegel's system and only point out in passing and at the end aspects of his method, which is after all, most adequately demonstrated in his result, the system.
The job of you, the reader, is to study Hegel's Logic and learn to understand his method.

The Meaning of Hegel's Logic

II: The Meaning of “Being”

Being, the First Division of Hegel's Logic, in terms of the theory of cognition, is the first stage in the process by which people arrive at knowledge of the world.

In the study of philosophy, Being always denotes the "historical context" - the whole social, technical, cultural, political context in which the philosophy arises, and its position within that context.

When we say that the Logic is also a theory of the development of science and culture on the historical scale, we should make the proviso that it should not be used (as it tended to be by Hegel) as a straitjacket into which the real history of thought must be squeezed. Nevertheless, this aspect of the Logic brings out in especially clear form that each stage of the Logic is a self-sufficient and valid world-outlook ["a systematic whole of thought-terms", Shorter Logic §86n]. The Logic works out the basis of each outlook, its inner contradiction and where it leads to. Thus, the Logic also provides an approach to understanding different personalities, different viewpoints and political or social tendencies and methods which co-exist within a given situation.

In the history of philosophy the different stages of the logical idea assume the shape of successive systems, each based on a particular definition of the Absolute. As the logical Idea is seen to unfold itself in a process from the abstract to the concrete, so in the history of philosophy the earliest systems are the most abstract, and thus at the same time the poorest. The relation too of the earlier to the later systems of philosophy is much like the relation of the corresponding stages of the logical Idea: in other words, the earlier are preserved in the later: but subordinated and submerged. Shorter Logic §86n.

Being - Notion - Idea

The philosophy of Being is first of all "awareness". In this century it is the point of view expressed by, for example, Krishnamurti, and is strongly present in the martial arts; among the popular applied psychologists "active listening" closely expresses the standpoint of Being. It is also called seriality - "one damn thing after another".

Pure Being is the world an instant before you see it, it is the world through the eyes of a new born baby. Like the Zen teaching that demands of the devotee absolute awareness, absolute "thoughtlessness", it is, for consciousness, an unattainable moment - even though it is equally the beginning of all consciousness!
In the words of Jean Piaget:

"at first the universe consists in mobile and plastic perceptual images centred about personal activity. But it itself-evident that to the extent that this activity is undifferentiated from the things it constantly assimilates to itself, it remains unaware of its own subjectivity; the external world therefore begins by being confused with the sensations of a self unaware of itself, before the two factors become detached from one another and are organised correlatively" [The Construction of Reality in the Child, Conclusion]

As Hegel says, there is absolutely nothing you can say about being without in doing so "further determining" it, without putting in place of pure Being some particular, some finite, an example. Being is absolutely featureless, or rather does not yet show any feature. Thus, as Hegel says "Being is Nothing" [§86n], a discovery which impels us forward, to the necessity of further determination, to recognise things, to discover what lies behind Being.

Such reflection is only possible because we are natural human beings, with material brains, sense organs and material needs founded in Nature, in other words because we are part of Being, products of Nature. Further, every act of reflection or recognition, every determination, pre-supposes that we already have in our heads some concept, or Notion. These concepts (Notions) are social products acquired over millennia and passed on to individuals through society. In other words, Being becomes only because we are also not of the world, because we have separated ourselves from the world and are its Other.

The Notion is the concept we have of the world - the Other of the world. It is abstract in the sense that each Notion corresponds to but one aspect of the world, just as each moment of Being, each event, passing impression or statistic, is abstract, meaningless and disconnected.

However, the Notion, as a summing up of millennia of human practice, in comparison to the way Being comes before us as "one damn thing after another", is rich and concrete.

Abstraction, therefore, is a sundering of the concrete and an isolating of its determinations; through it only single properties and moments are seized; for its product must contain what it is itself. But the difference between this individuality of its products and the Notion's individuality is that, in the former, the individual as content and the universal as form are distinct from one another - just because the former is not present as absolute form, as the Notion itself, or the latter is not present as the totality of form. However this more detailed consideration shows that the abstract product itself is a unity of the individual content and abstract universality, and is, therefore, a concrete - and the opposite of what it aims to be. [The Science of Logic, The Notion In General]

In its development the Notion becomes more and more concrete, like the theory of chemistry which, once having established the Notion of a molecule as the smallest unit of chemical substance, builds up a more and more concrete picture of the molecule, with its atomic composition, its asymmetrical structure, is weak and strong bonds, associations, hydrogen radicals, carbon rings, ability to dissociate, etc., etc..
The development of Being however, is just the passing of one aspect after another, one fact or statistic or mental picture after another without mutual contact or effect; Being is like a diary as compared to a real autobiography, like things appear when you have no idea about what's going on. Each moment passes away and is replaced by another. But in its development, Being accumulates the "factual material" which is to form the basis of reflection and the formation of conceptual knowledge.

As one thing passes after another, certain qualities demonstrate some stability and fix themselves in our attention, we are able to measure things and perceive the ebb and flow of quantities and how one quality passes over into another at a certain point.

Between the development of Being and the development of the Notion lies the development of Essence, which begins when we think we recognise something, with an hypothesis, and goes through a contradictory development in which one thesis is contradicted by another and overcome by it, until an adequate notion of the thing is arrived at.

But in Being, we still have just "one damn thing after another".

The Subdivisions of Being
Quality - Quantity - Measure

The Subdivisions of Being are Quality, Quantity and Measure. Hegel says:

Quality is, in the first place, the character identical with being: so identical that a thing ceases to be what it is, if it loses its quality. Quantity, on the contrary, is the character external to being, and does not affect the being at all. Thus, e.g. a house remains what it is, whether it be greater or smaller; and red remains red, whether it be brighter or darker. Measure, the third grade of being, which is the unity of the first two, is a qualitative quantity. \[Shorter Logic, §85n\]

The first determination of Pure Being comes we when notice some property of the thing which is relatively persistent or stable, a quality; we also notice other qualities, and Being comes to us as a series of properties passing one after another. Further determination shows that a certain quality is in greater or lesser quantity; our representation is deepened by quality differentiated quantitatively within itself. Further determination brings us to notice the point at which quantitative change becomes qualitative change, when further quantitative change in a quality constitutes a qualitative change. Thus qualitative relation is reflected in quantitative relation. Measure is this unity of quality and quantity; qualitative change which is identical with quantitative change.

The movement of Being is this dialectic of quantity and quality. It is this passage of a quantity beyond its limits which throws forward the new quality and provides the motive force of contradictions which arise in the process of reflection.
Engels popularised this dialectic as the "second law of dialectics" in his article *Dialectics* published with *Dialectics of Nature*, the first being the Law of the Unity (Interpenetration) of Opposites, and third being the Law of the Negation of the Negation. Subsequently, it has frequently been used to introduce the idea of dialectics for novices.

**With What must Science Begin?**

The essay, *With What must Science Begin?*, with which Hegel introduces Book I of the *Science of Logic* is a stunning demonstration of the dialectical method:

... there is nothing, nothing in heaven, or in nature or in mind or anywhere else which does not equally contain both immediacy and mediation, so that these two determinations reveal themselves to be unseparated and inseparable and the opposition between them to be a nullity. [*With What must Science Begin?*, continued ...]

Being is the immediate, that is, un-mediated, given in itself and not by means of something else, in a round about way. But right from the outset, Hegel makes it clear that "neither in Heaven nor on Earth" is there anything that is not equally mediated as immediate. "Being is immediate" is not an absolute, but a relative truth. To elevate it into an absolute (like the ancients and like the gurus of "awareness") is one relative moment or stage of the Absolute Idea.

So, with what to begin? ...

.... to want the nature of cognition clarified prior to the science is to demand that it be considered outside the science; outside the science this cannot be accomplished, ... [*Science of Logic, With what Must Science Begin?*]

Against the method of (supposedly) beginning a science with arbitrary, unproven definitions and axioms, Hegel asserts that it is in the elaboration of the science itself that its nature is clarified, and can only be so. The demand of the pedant: "Define your terms!" is shown to be as empty as the supposed elaboration of a science (like geometry) from unproven axioms that have been plucked from who knows where. The subject must be allowed to speak for itself.

For example, the very first words of Spinoza's *Ethics* are:

I. By CAUSE OF ITSELF (*causa sui*) I understand that whose essence involves existence; or, that whose nature cannot be conceived except as existing.

II. That thing is said to be FINITE IN ITS KIND (*in suo genere finita*) which can be limited by another thing of the same kind. etc., etc. [*Ethics*]

Instead Hegel identifies the *real* beginning of the science: in Being, in Being in which subject and object are indissolubly immersed together, from which reflection emerges
from the realisation that Being is Nothing, from absolute awareness which is also absolute unconsciousness.

Thus the beginning must be an absolute, or what is synonymous here, an abstract beginning; and so it may not suppose anything, must not be mediated by anything nor have a ground; rather it is to be itself the ground of the entire science. Consequently, it must be purely and simply an immediacy, or rather merely immediacy itself. Just as it cannot possess any determination relatively to anything else, so too it cannot contain within itself any determination, any content; for any such would be a distinguishing and an inter-relationship of distinct moments, and consequently a mediation. The beginning therefore is pure being. [*Science of Logic, With what Must Science Begin?*]

We should compare this beginning with Marx's beginning of political economy, as explained in the *German Ideology* [1845]:

The premises from which we begin are not arbitrary ones, not dogmas, but real premises from which abstraction can be made only in the imagination. They are the real individuals, their activity and the material conditions under which they live, both those which they find already existing and those produced by their activity. These premises can thus be verified in a purely empirical way.

The first premise of human history is, of course, the existence of living human individuals. Thus the first fact to be established is the physical organisation of these individuals and their consequent relation to the rest of nature. Of course, we cannot here go into either the actual physical nature of man, or into the natural conditions in which man finds himself geological, orohydrographical, climatic and so on. The writing of history always sets out from these natural bases and their modification in the course of history through the action of people. [*First Premises of Materialist Method*, Marx]

Here Hegel demonstrates this method in relation to his subject, Logic. The logical category of Being cannot be further determined or it is no longer "Being", but something else, some determination of Being.

But because it is the result which appears as the absolute ground, this progress in knowing is not something provisional, or problematical and hypothetical; it must be determined by the nature of the subject matter itself and its content. [*Science of Logic, With what Must Science Begin?*]

That is, the method of *Logic* is to be determined by the movement of the categories of logic itself.

As yet there is nothing and there is to become something the beginning is not pure nothing, but a nothing from which something is to proceed; therefore being, too, is already contained in the beginning. The beginning therefore contains both, being and nothing, is the unity of being and nothing; or is non-being which is at the same time being, and being which is at the same time non-being. [*Science of Logic, With what Must Science Begin?*]

Here is the archetypal disclosure of the identity of opposites: Being is Nothing! Being, not any particular type or stage of existence, just pure Being, precisely because it is simply Being, undifferentiated, undetermined, undeveloped Being, has no feature, no quality, you cannot be aware of it; in other words it is nothing.
That which begins, as yet is not, it is only on the way to being. The being contained in the beginning is, therefore, a being which removed itself from non-being or sublates it as something opposed to it. [Science of Logic. With what Must Science Begin?]

And Hegel here shows how this internal contradiction which is discovered in a concept (in this case the concept of "Being") is its "motive force", which drives the concept towards its own negation, i.e. Being is Nothing, is therefore Becoming.

**Being in Natural and Social Movements**

A social movement exists (in Hegelian language) "in-itself" before it finds any kind of voice, let alone becomes conscious of itself and organised under its own banner and program. Before there is a working class, there are many thousands of wage workers. Using the methods of bourgeois sociologists we can identify wage workers or any other category that is subject to measurement as a "category", but this utterly abstract procedure in no way demonstrates the existence of a "thing". Sociologists can dream up any category they like and count its numbers and measure the attitudes and behaviour of its members but such quantitative and qualitative measurement means very little. Only when a social group begins to speak and organise does it come into existence in any meaningful way.

In the beginning, any concept, social movement, etc., is indistinguishable from its whole social and historical context. The germ of a movement lies in the very conditions of its birth.

This stage of a social entity when it exists only in the most abstract sense of being a category of individuals is called "Being". It's first act will be precisely the recognition that it exists but it is Nothing.

Only then does it Become something. During the stage of Being, there may be momentary "showings" which however lead to nothing, and each coming together happens in isolation out of the conditions which exists at a particular place and time. They just come and go, without exerting any influence of what follows or what happens elsewhere.

Hegel explains the stage of "in-itself" in personal and political development as follows:

Thus the man, in himself, is the child. And what the child has to do is to rise out of this abstract and undeveloped 'in-himself' and become 'for himself' what he is at first only 'in-himself' - a free and reasonable being. Similarly, the state-in-itself is the yet immature and patriarchal state, where the various political functions, latent in the notion of the state, have not received the full logical constitution which the logic of political principles demands. [Shorter Logic §124n]

Or more generally:

Being, as Being, is nothing fixed or ultimate: it yields to dialectic and sinks into its opposite, which, also taken immediately, is Nothing. After all, the point is that Being is the pure Thought; whatever else you
may begin with (the I = I, the absolute indifference, or God himself), you begin with a figure of materialised conception, not a product of thought; and that, so far as its thought-content is concerned, such beginning is merely Being. [Shorter Logic §86n, my bold]

The Immediate and Development

I referred above to Being as a "motive force" which "drives" development. This is a way of visualising the understanding that, like any other phase of development of the Logic, Being does not just "terminate" and pass over into another, but continues within the more developed process, as one of its aspects.

For example, I remember reading Standford & Roak's book on group development, which identified seven stages of group development (Beginning, Norm Development, Conflict, Transition, Production, Affection and Actualisation). The writers took care to point out that every time a new member joined the group, and even to an extent every time you sit down to begin a new meeting, all these stages had to be recapitulated, even if in telescoped form!

The "materialised conception" which is the beginning of thinking, does not stop when you first reflect upon it. On the contrary, it continues unabated. Consequently, all the moments and stages of the Logic which flow from it continue, and constitute an inner content of the development from beginning to end.

Piaget, Historical and Psychological Development

As was pointed out earlier, care must be taken not to slip into the temptation to impose Hegel's schema of development onto the material processes under consideration. For example, Piaget points out in his Genetic Epistemology that the genesis of concepts in the individual may not only differ from the historical development, but may in some respects follow an opposite path:

"In the history of the development of geometry, the first formal type was the Euclidean metric geometry of the early Greeks. Next in the development was projective geometry, which was suggested by the Greeks but not fully developed until the seventeenth century. Much later still, came topological geometry, developed in the nineteenth century. On the other hand, when we look at the theoretical relationships between these three types of geometry, we find that the most primitive type is topology and that both Euclidean and projective geometry can be derived from topological geometry. In other words, topology is the common source for the other two types of geometry. It is an interesting question then, whether in the development of thinking in children geometry follows the historic order or the theoretical order. More precisely, will we find that Euclidean intuitions and operations develop first, and topological intuitions and operations later? or will we find that the relationship is the other way around? What we do find, in fact, is that the first intuitions are topological. The first operations, too, are those of dividing space, of ordering in space, which are much more similar to topological operations than to Euclidean or metric ones." [Genetic Epistemology, s. 2]

This emphasises the care that must be taken not to apply these categories, but only to recognise, or abstract them from the real development.
In the passage above, Piaget refers to the deduction of the Euclidean, Cartesian and topological geometry from Burbakian structures; but these structures represent a very developed Notion of mathematical form. The most general, abstract mathematical forms always arise out of the synthesis of "special" or limiting cases which are *always* historically prior. I think this is a general law of development, and reflects the features of Hegel's Being - Essence - Notion.

On the other hand, Euclidean geometry did not arise from "Euclidean intuitions" but from the very practical requirement of the conditions of ancient society to measure land and volume and incidentally time, and season. This development arose not from the simplicity of the conceptions involved, but from "Being", "the real individuals, their activity and the material conditions under which they live, both those which they find already existing and those produced by their activity" [German Ideology, Marx]. The requirement for geometrical measure originates in productive forces which characterised a particular stage of development of the relationship with Nature, which is in turn reflected across the whole spectrum of social and cultural activity. Undoubtedly, the ancient Greeks and Egyptians who founded metric geometry already had "topological intuitions and operations" in hand, as is *more than* demonstrated in their written language.

Likewise, it is hardly surprising that Cartesian Geometry arose in the period after Galileo's mechanics and cosmology and the circumnavigation of the globe, during the Thirty Years War. Meanwhile, topological geometry could only arise on the basis of problems posed within mathematics itself at the stage at which the whole body of natural science and industry had arrived at in the nineteenth century.

It must be kept in mind that Hegel's *Logic* achieves its marvelous universality only because of its **concrete abstractness**. The history of science and genetic psychology are both huge subjects in themselves, with or without a consideration of their relation to Hegel's *Logic*, and must be the subject of separate study.

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**The Meaning of Hegel's Logic**

**III: The Meaning of “Essence”**

At first, it appears that Hegel is using the word "essence" quite differently from the way it is used conventionally or in philosophy. In mediaeval philosophy and in the philosophy of Kant "Essence" refers to some elusive, unattainable, inner content of a thing which is hidden from perception. In ordinary language, we talk of the "essence of the matter", by which is meant it's "meaning" or significance, the most important or defining aspect of thing, besides which other aspects are just accidental or "unessential".
As it turns out, Hegel is indeed talking of the same thing, but his approach is distinctively "Hegelian".

**Being - Essence - The Notion**

In Hegel's *Logic*, Essence is the Division which stands between Being and The Notion; Being and Essence constitute The Objective Logic, while the Doctrine of The Notion is The Subjective Logic. In the opening paragraphs of The Subjective Logic Hegel gives a summary of "the story so far":

The Notion is ... in the first instance ... the third to being and essence, to the immediate and to reflection. Being and essence are so far the moments of its becoming; but it is their foundation and truth as the identity in which they are submerged and contained. ...

*Objective logic* therefore, which treats of *being* and *essence* constitutes properly the genetic exposition of the Notion. ...

Now the Notion is that absolute unity of being and reflection in which being is in and for itself only in so far as it is no less reflection or positedness, and positedness is no less being that is in and for itself. This abstract result is elucidated by the exposition of its concrete genesis; that exposition contains the nature of the Notion whose treatment it must have preceded. The chief moments of this exposition ... has been given in detail in the Second Book of The Objective Logic. [*The Science of Logic*, The Notion in General]

Here Hegel is explaining Essence as the history of how a notion of something comes into being. In the first place there is just immediate consciousness "one damn thing after another" and then we *recognise* various things which do not simply pass away to be replaced by something else like unconnected images one after another, but something that lies behind Being. But each of these views proves inadequate, fails to explain various aspects of the thing, and is one after another *negated*. Each view or essence is not destroyed by its negation, but *overcome*, retained and superseded by a still deeper essence, such as in the history of astronomy from flat Earth to geocentric to heliocentric to infinite unbounded Universe, to the Big Bang, etc.

Prior to Hegel, this subject (The Doctrine of Essence) was not considered to be a part of Logic at all. Today it would generally be covered, if at all, by History and Philosophy of Science or Research Methods. It is called *Objective Logic* because it describes the process whereby knowledge proceeds unconsciously as if determined by objective law. *The Subjective Logic*, on the contrary, begins with an abstract Notion, which is made more and more concretely theoretical practice, such as the history of development of a science once its central founding Notion is formulated; for example, the science of chemistry after the discovery of the concept of the periodic table of elements.

Essence describes how you come to the Notion, to the "key" to understanding something which, once arrived at, is the basis for all analysis of and "logical thinking" about the thing. This process goes through all sorts of "mistakes" before finding the
"right road". Without this concept of Hegel's, it appears as if the Notion can only be arrived at by "inspiration" or "hunch".

Any mention of Essence implies that we distinguish it from Being: the latter is immediate, and, compared with the Essence, we look upon it as mere seeming. But this seeming is not an utter nonentity and nothing at all, but Being superseded and put by. The point of view given by the Essence is in general the standpoint of 'Reflection'. This word 'reflection' is originally applied, when a ray of light in a straight line impinging upon the surface of a mirror is thrown back from it. In this phenomenon we have two things - first an immediate fact which is, and secondly the deputed, derivated, or transmitted phase of the same. Something of this sort takes place when we reflect, or think upon an object: for here we want to know the object, not in its immediacy, but as derivative or mediated. The problem or aim of philosophy is often represented as the ascertainment of the essence of things: a phrase which only means that things, instead of being left in their immediacy, must be shown to be mediated by, or based upon, something else. The immediate Being of things is thus conceived under the image of a rind or curtain behind which the Essence is hidden.

Everything, it is said, has an Essence; that is, things really are not what they immediately show themselves. There is something more to be done than merely rove from one quality to another, and merely to advance from qualitative to quantitative, and vice versa: there is a permanence in things, and that permanence is in the first instance their Essence.

With respect to other meanings and uses of the category of Essence, we may note that in the German auxiliary verb, sein (to be), the past tense is expressed by the term for Essence (wesen); we designate past being as gewesen. This anomaly of language implies to some extent a correct perception of the relation between Being and Essence. Essence we may certainly regard as past Being, remembering however meanwhile that the past is not utterly denied, but only laid aside and thus at the same time preserved. [*The Shorter Logic, §112n*]

In this note to the first § of The Doctrine of Essence in *The Shorter Logic*, Hegel explains the meaning of Essence in its contrast to Being. At first, as I remarked above, it's just "one damn thing after another". Prices go up and down, politicians have scandals, strikes, take-overs, elections, etc. In so far as we are talking about "what is going on", these are "immediates", news items, things which appear and disappear, but "mean nothing to us". This is Being: how we perceive a thing before we recognise anything at all - chimera, images that do not show us the essence of the thing - but of course they do contain the essence, as well as these passing images.

We are only capable of recognising things that we already know from the past. A new concept of something cannot spring right out of immediate perception, it must be mediated through a whole process through things we already know about, and this process is Essence. To ascertain the essence of things, what lies behind the immediate, we begin by recognising things, the concepts of which we already have in our brains. But here we have not just an image that appears and passes away again, but what it is, so to speak.

The truth of being is essence. Being is the immediate. Since knowing has for its goal knowledge of the true, knowledge of what being is in and for itself, it does not stop at the immediate and its determinations, but penetrates it on the supposition that behind this being there is something else, something other than being itself, that this
background constitutes the truth of being. This knowledge is a mediated knowing for it is not found immediately with and in essence, but starts from an other, from being, and has a preliminary path to tread, that of going beyond being or rather of penetrating into it. Not until knowing *inwardises, recollects* itself out of immediate being, does it through this mediation find essence.

When this movement is pictured as the path of knowing, then this beginning with being, and the development that sublates it, reaching essence as a mediated result, appears to be an activity of knowing external to being, and irrelevant to being's own nature.

But this path is the movement of being itself. It was seen that being inwardises itself through its own nature, and through this movement into itself becomes essence. [The Science of Logic, Volume One The Objective Logic, Book II: Essence]

This excerpt is the opening of the Doctrine of Essence in the Science of Logic. "Essence is the truth of Being" It is the process of getting to the essence of what's happening, of going into it, of discovering its laws of motion, of explaining at first the main lines of development. Contradictions arise; the seemingly accidental aspects of the thing - the inessential - force us to deeper and deeper essence.

It is called "mediated" knowledge, because we use concepts to perceive Being, and these concepts have themselves their origin in Being. We recognise a scoundrel because "we've met his type before". Thus Essence is the movement of Being itself, rather than something external to, foreign to Being.

**The Development of Essence**

In the sphere of Essence one category does not pass into another, but refers to another merely. In Being, the forms of reference is purely due to our reflection on what takes place: but it is the special and proper characteristic of Essence. In the sphere of Being, when somewhat becomes another, the somewhat has vanished. Not so in Essence: here there is no real other, but only diversity, reference of the one to its other. The transition of Essence is therefore at the same time no transition: for in the passage of different into different, the different does not vanish: the different terms remain in their relation. When we speak of Being and Nought, Being is independent, so is Nought. The case is otherwise with the Positive and the Negative. No doubt these possess the characteristic of Being and Nought. But the Positive by itself has no sense; it is wholly in reference to the negative. And it is the same with the negative.

In the sphere of Being the reference of one term to another is only implicit; in Essence on the contrary it is explicit. And this in general is the distinction between the forms of Being and Essence: in Being everything is immediate, in Essence everything is relative. [The Shorter Logic, §111n]

Here Hegel points out that in Being, things come and go, rise and fall, and pass into one another - the opposites are independent of one another, whereas in Essence the opposites contradict one another and exist in contrast or opposition to one another. As a concept of the thing reaches its limit, and is transcended, it is superseded by *its* Other. The former retains its truth, although its truth is now shown to be relative and not absolute.

In the following excerpt from the Doctrine of the Notion in The Shorter Logic, Hegel contrasts this process of the struggle of opposites characteristic of the process of
Essence, with the Development of the Notion from the initial abstract Notion to the absolutely concrete Idea, in which the former is not overcome by the later, but rather is absorbed into it, as one and the same Notion becomes more concrete:

The onward movement of the notion is no longer either a transition into, or a reflection on something else, but Development. For in the notion, the elements distinguished are without more ado at the same time declared to be identical with one another and with the whole, and the specific character of each is a free being of the whole notion. [The Shorter Logic, Development of the Notion, §161]

The initial moments of Essence are partial, limited impressions. Reality is infinitely complex and multi-sided, so what we think we see initially soon proves inadequate. It is the "exception which proved the rule". What seems at first inessential, accidental, not bearing on the question at issue at all, may prove in fact to be essential, but can only be so perceived as we run into contradictions and are forced to penetrate deeper. The movement of Essence is to become ever more comprehensive and more and more adequate to actuality, although not yet able to grasp the Notion of the thing itself.

The initial moment of Essence is Identity or reflection-into-self, the Understanding's uncritical identification of the thing with itself:

This identity, as it descended from Being, appears in the first place only charged with the characteristics of Being, and referred to Being as to something external. This external Being, if taken in separation from the true Being (of Essence), is called the Unessential. But that turns out to be a mistake. Because Essence is Being-in-self, it is essential only to the extent that it has in itself its negative, i.e. reference to another, or mediation. Consequently, it has the unessential as its own proper seeming (reflection) in itself. But in seeming or mediation there is distinction involved: and since what is distinguished (as distinguished from identity out of which it arises, and in which it is not, or lies as seeming) receives itself the form of identity, the semblance is still not in the mode of Being, or of self-related immediacy.

The sphere of Essence thus turns out to be a still imperfect combination of immediacy and mediation. In it every term is expressly invested with the character of self-relatedness, while yet at the same time one is forced beyond it. It has Being - reflected being, a being in which another shows, and which shows in another. And so it is also the sphere in which the contradiction, still implicit in the sphere of Being, is made explicit. ... [The Shorter Logic, § 114, The Unessential]

The theory of Essence is the most difficult branch of Logic. It includes the categories of metaphysic and of the sciences in general. These are the products of reflective understanding, which, while it assumes the differences to possess a footing of their own, and at the same time also expressly affirms their relativity, still combines the two statements, side by side, or one after the other, by an 'also', without bringing these thoughts into one, or unifying them into the notion. [The Shorter Logic, § 114]

The Sub-divisions of Essence
Simple Essence (Reflection) - Appearance - Actuality

We shall now go through the three main sub-divisions of Essence, namely Reflection (or Existence or Simple Essence), Appearance and Actuality. In the Science of Logic, Hegel sums up the divisions of Essence as follows:
At first, essence shines or shows within itself, or is reflection; secondly, it appears; thirdly, it manifests itself. In its movement, essence posits itself in the following determinations:

1. As simple Essence, essence in itself, which in its determinations remains within itself.
2. As emerging into determinate being, or in accordance with its Existence and Appearance.
3. As essence that is one with its Appearance, as Actuality.

Reflection

In this first section of Essence Hegel himself is uncertain of how to structure the material. He apparently revised the material countless times and between the publication of the Science of Logic in 1812 and the final revision of the Shorter Logic in 1830, and the Chapters of this Division change unrecognisably. Within this first section he deals with "Identity, Difference, Opposition" and Contradiction; with the maxims of identity and diversity; with positive and negative (polarity); with the unity of the essential and inessential, likeness and unlikeness.

"Reflection" means the generation by a thing of an image in something else, its Other. Reflection has its objective base in the universal property of material entities to reflect the properties of other objects with which has contact. Essence is in fact the process of development of Reflection which leads to the Notion. Reflection begins with Identity, the identification or recognition of a thing. This identity is upset and undergoes a contradictory development. This development is called Essence.

We will return to Reflection and the various subjects Hegel expounds under this category in the next chapter, after a consideration of the subdivisions of Appearance and Actuality.

Appearance (Form & Content)

The movement of essence is in general the becoming of the Notion. In the relation of inner and outer, the essential moment of this emerges, namely, that its determinations are posited as being in negative unity in such a manner that each immediately is not only its other but also the totality of the whole. But in the Notion as such this totality is the universal - a substrate which is not yet present in the relation of inner and outer. [Part C of Essential Relation in The Science of Logic]

The movement from Existence to Appearance. "What it is, turns out to be just an appearance" - leads towards an understanding of the relation between form and content - of why the content has this form, and not another. Thus appearance does not get away from Essence, but contains it as "show".

Existence stated explicitly in its contradiction is Appearance. But appearance (forth-showing) is not to be confused with a mere show (shining). Show is the proximate truth of Being or immediacy. The immediate, instead of being, as we suppose, something independent, resting on its own self, is a mere show, and as such it is packed or summed up under the simplicity of the immanent essence. [The Shorter Logic, § 131n - note to first § of Subdivision of Appearance]
The essence is, in the first place, the sum total of the showing itself, shining in itself (inwardly); but, far from abiding in this inwardness, it comes as a ground forward into existence; and this existence being grounded not in itself, but on something else, is just appearance. In our imagination we ordinarily combine with the term appearance or phenomenon the conception of an indefinite congeries of things existing, the being of which is purely relative, and which consequently do not rest on a foundation of their own, but are esteemed only as passing stages. But in this conception it is no less implied that essence does not linger behind or beyond appearance. Rather it is, we may say, the infinite kindness which lets its own show freely issue into immediacy, and graciously allows it the joy of existence. The appearance which is thus created does not stand on its own feet, and has its being not in itself but in something else. ... [Shorter Logic, § 131n]

In the early stages of natural science, the different branches described the various *phenomena* as they came to the senses and to experience, heat, optics, mineralogy, zoology, astronomy etc. Only much later is it possible to study biochemistry, electromagnetic radiation, the structure of the atom, processes which are not evident to the senses at all, but are conceivable only on the basis of a long period of theoretical development. The period of phenomena is the stage of Appearance in the development of science.

As soon as, by the accumulation of the properties of a science or a thing or event, we have been able to identify *what it is*, there begins a process of penetration from essence to deeper essence. This is the dialectic of form and content or Appearance.

For example: a new recruit to the organisation is a particular age and gender, comes from a particular social milieu and "spontaneously" expresses certain political opinions, etc. In the course of time, we come to know the content of this form and in fact, the content *manifests itself*; the enthusiastic new recruit becomes a real member, occupying a specific position in the spectrum of political opinion in the organisation, exhibits certain strengths and weaknesses and responds to events developing along a particular line which not only was not previously visible, but could not be said to have previously existed.

*Form & Content*

It must be seen here that the dialectic of Form (person ... recruit) and Content (recruit ... member) is driven forward by the continual "in-flow" of being to essence (more and more interaction). Being does not "stop" and pass over to Essence; Being *drives* Essence deeper and deeper. Every appearance retains its validity as it is overcome by a deeper truth. (The recruit *is* a person, the member *is* a demonstration).

First a form appears, but the form proves to have a different content, and comes into conflict with its content, content overthrows form and the content becomes a new form.

The first thing to note about how Hegel talks about Form and Content is that the content is also *a form*, but a deeper more developed form; on the other hand, there can be no formless content nor form without content. As Hegel explains:
The essential point to keep in mind about the opposition of Form and Content is that the content is not formless, but has the form in its own self, quite as much as the form is external to it. There is thus a doubling of form. At one time it is reflected into itself; and then it is identical with the content. At another time it is not reflected into itself, and then it is external existence, which does not at all affect the content. We are here in presence, implicitly, of the absolute correlation of content and form: viz., their reciprocal revulsion, so that content is nothing but the revulsion of form into content, and form nothing but the revulsion of content into form. This mutual revulsion is one of the most important laws of thought. But it is not explicitly brought out before the Relations of Substance and Causality.

Form and content are a pair of terms frequently employed by the reflective understanding, especially with a habit of looking on the content as the essential and independent, the form on the contrary as the unessential and dependent. Against this it is to be noted that both are in fact equally essential; and that, while a formless content can be as little found as a formless matter, the two (content and matter) are distinguished by this circumstance, that matter, though implicitly not without form, still in its existence manifests a disregard of form, whereas the content, as such, is what it is only because the matured form is included in it. Still the form still suffers from externality.

In a book, for instance, it certainly has no bearing upon the content, whether it be written or printed, bound in paper or in leather. That however does not in the least imply that apart from such an indifferent and external form, the content of the book is itself formless. There are undoubtedly books enough which even in reference to their content may well be styled formless: but want of form in this case is the same as bad form, and means the defect of the right form, not the absence of all form whatever. So far is this right form from being unaffected by the content that it is rather the content itself. A work of art that wants the right form is for that very reason no right or true work of art: and it is a bad way of excusing an artist, to say that the content of his works is good and even excellent, though they want the right form. Real works of art are those where content and form exhibit a thorough identity. [Shorter Logic, §133 Content and Form]

Frequently, social movements go through a process of transforming from one form to another, of "shedding form" until finding the form which is true to its content. The converse process takes place when we are trying to determine what something is; at first it appears to be this, but then on closer examination it proves to be that.

The Subdivisions of Appearance: Existence - Appearance - Essential Relation

We are still in the phase of recognising a thing, of reflection of Being in past Being (knowledge in the form of Notions, as Essence), albeit, what it is at a deeper and deeper level. We are still in the phase of characterisation, but not yet of connecting with others, of concrete understanding, of cause and effect, of freedom and necessity.

Thus essence appears. Reflection is the showing of illusory being within essence itself. Its determinations are enclosed within the unity simply and solely as posited, sublated determinations; or, reflection is essence which, in its positedness, is immediately identical with itself. But since essence is ground, it gives itself a real determination through its reflection, which is self-sublating or which returns into itself; further, since this determination, or the otherness, of the ground relation sublates itself in the reflection of the ground and becomes Existence, this endows the form determinations with an element of self-subsistence. Their illusory being completes itself to become Appearance.
The essentiality that has advanced to immediacy is, in the first instance, **Existence**, and an existent or thing - as an undifferentiated unity of essence with its immediacy. It is true that the thing contains reflection, but its negativity is, in the first instance, extinguished in its immediacy; but because its ground is essentially reflection, its immediacy sublates itself and the thing makes itself into positedness.

Secondly, then, it is **Appearance**. Appearance is that which the thing is in itself, or its truth. But this merely posited Existence which is reflected into otherness is equally the transcending of its self in its infinitude; to the world of appearance is opposed the world that is reflected into itself, the world of essence.

But the being that appears and essential being, simply stand in relation to one another. Thus Existence is, thirdly, **Essential Relation**; what appears manifests what is essential, and this is in its Appearance.

The relation is the still-imperfect union of reflection-into-otherness and reflection-into-self; the perfect interpenetration of both is Actuality. [Science of Logic, Section Two of the Doctrine of Essence]

**The Development of Appearance**

Appearance is the dialectic of Form & Content, or to put it another way, Form & Content is the "essence of appearance". Appearance is firstly the truth of existence, realised as essential relation. Appearance develops in a process with the build-up of a multiplicity of forms, all standing in contradictory relationship to their content.

**The Appearance of Capitalism**

The appearance of capitalism is money - and money which makes money in the form of interest-bearing capital; wages, the apparent "fair day's pay for a fair day's work"; the rule of the market over people, the relation of person to person in the form of commodity-to-commodity: all appearances, **real illusions**, forms which have a real content.

**Actuality (Cause & Effect)**

From Appearance, we have all the phenomena of the thing and in Actuality we see the truth of phenomena with all the inner and outer forms equally immediate and essential.

Actuality is the dialectic of Cause and Effect, which reaches its fullest development in the concept of Reciprocity, a totality in which every aspect and form of the thing is both cause and effect of every other; and the truth of Reciprocity is Necessity, and the truth (or "understanding") of Necessity is Freedom, which is the Notion.

Actuality is the process of concretising the picture of the thing with all its possibilities and interconnections, of understanding of a thing in terms of all the conditions of its existence, the factors determining its growth, etc.; all the parts become identical with the whole: "All that is rational is real and all that is real is rational".
Actuality is the unity, become immediate, of essence with existence, or of inward with outward. The utterance of the actual is the actual itself: so that in this utterance it remains just as essential, and only is essential, in so far as it is immediate external existence.

We have ere this met Being and Existence as forms of the immediate. Being is, in general, unreflected immediacy and transition into another. Existence is immediate unity of being and reflection: hence appearance: it comes from the ground, and falls to the ground. In actuality this unity is explicitly put, and the two sides of the relation identified. Hence the actual is exempted from transition, and its externality is its energising. In that energising it is reflected into itself: its existence is only the manifestation of itself, not of another. [§ 142 start of Subdivision of Actuality in the Shorter Logic]

The concrete, all-sided study of the phenomenon leads to an understanding in which the circle of cause and effect has been closed - it could not be other than it is.

According to Hegel, cause and effect are relative moments, denoting a limited moment of understanding, especially insofar as we are concerned with complex issues such as in history and the development of science. The dialectic of cause and effect passes over to the concept of reciprocity - where every effect is equally a cause, and every cause equally an effect, and cause and effect are dissolved into mere relativity by absolute reciprocity.

Substance (Possibility & Contingency - Real Possibility)

The beginning of Actuality is Substance - "the totality of Accidents" [Shorter Logic § 151], or all the essential and inessential attributes of things, in their infinite manifold necessary interconnection.

The dialectic of Substance takes the form of Possibility, which is translated through actuality, the actual conditions (contingencies which are Facts), into Real Possibility. The fullest development of this dialectic arrives at a conception of Necessity.

Hegel says:

The problem of science, and especially of philosophy, undoubtedly consists in eliciting the necessity concealed under the semblance of contingency. That, however, is far from meaning that the contingent belongs to our subjective conception alone, and must therefore be simply set aside, if we wish to get at the truth. All scientific researches which pursue this tendency exclusively lay themselves open to the charge of mere jugglery and an over-strained precisionism. [Shorter Logic § 145n]

The essence of this dialectic is the correlation of Necessity, distinguished from what is accidental, which is cause and effect.

Causality (Cause - Effect - Reciprocity)

When we try to explain something, we enquire into its cause. At this point the Cause is absolutely independent of the Effect. But the cause is also an effect, and is efficient only under a complex of conditions which are also both cause and effect. Thus, the view of causality reconstructs the conditions and possibilities in a network of relations of
causality. In its fullest development, this cause - effect/cause - effect - cause chain bends back upon itself, becomes a circle in which there is no beginning, but a reflection of the all-sided interconnection of things which have their ground equally in themselves as in an Other. This concept is called Reciprocity.

At this point Causality has become identical with Possibility and Contingency, a whole system of necessary Action and Reaction.

In the study of great historical events, there is always controversy as to causes, the significance of particular conditions or events, the role of certain individuals etc.. Hegel has this to say:

... in so far as the relation of cause and effect is admitted, although improperly, the effect cannot be greater than the cause; for the effect is nothing more than the manifestation of the cause. It has become a common jest in history to let great effects arise from small causes and to cite as the primary cause of a comprehensive and profound event an anecdote. Such a so-called cause is to be regarded as nothing more than an occasion, an external stimulus, of which the inner spirit of the event had no need, or could have used a countless host of other such in order to begin from them in the sphere of Appearance, to disengage itself and give itself manifestation. [Science of Logic, Formal Cause]

The completion of the stage of Actuality is summed up by Hegel as "Freedom is the understanding of Necessity":

... the process of necessity is so directed that it overcomes the rigid externality which it first had and reveals its inward nature. It then appears that the members, linked to one another, are not really foreign to each other, but only elements of one whole, each of them, in its connection with the other, being, as it were, at home, and combining with itself. In this way, necessity is transfigured into freedom - not the freedom that consists in abstract negation, but freedom concrete and positive. [Shorter Logic, § 158n]

Freedom and Necessity

This understanding of the thing, at which the dialectical development of the opposite tendencies within a thing has become quite comprehensive, brings thought to the Notion of the thing, the conception of the object as a unity of opposites - to the "freedom of the Notion".

When anything is said to be necessary, the first question we ask is: Why? Anything necessary accordingly comes before us as something due to a supposition, the result of certain antecedents. If we go no further than mere derivation from antecedents, however, we have not gained a complete notion of what necessity means.

What is merely derivative, is what it is, not through itself, but through something else; and in this way, it too is merely contingent. What is necessary on the other hand, we would have to be what it is through itself: and thus, although derivative, it must still contain the antecedent whence it is derived as a vanishing element in itself. Hence we say of what is necessary, 'It is'. We thus hold it to be simple, self-relation, in which all dependence on something else is removed.

Necessity is often said to be blind. If that means that in the process of necessity the End or final cause is not explicitly and overtly present, the statement is correct. The process of necessity begins with the
existence of scattered circumstances which appear to have no interconnection and no concern one with another. These circumstances are an immediate actuality which collapses, and out of this negation a new actuality proceeds. Here we have a content which in point of form is doubled, once as content of the final realised fact, and once as content of the scattered circumstances which appear as if they were positive, and make themselves at first felt in that character. The latter content is in itself nought and is accordingly inverted into its negative, thus becoming content of the realised fact. The immediate circumstances fall to the ground as conditions, but are at the same time retained as content of the ultimate reality. From such circumstances and conditions there has, as we say, proceeded quite another thing, and it is for that reason that we call this process of necessity blind. If on the contrary we consider teleological action, we have in the end of action a content which is already foreknown. This activity therefore is not blind but seeing. To say that the world is ruled by Providence implies that design, as what has been absolutely predetermined, is the active principle, so that the issue corresponds to what has been fore-known and forewilled.

The theory however which regards the world as determined through necessity and the belief in a divine providence are by no means mutually excluding points of view. The intellectual principle underlying the idea of divine providence will hereafter be shown to be the notion. But the notion is the truth of necessity, which it contains in suspension in itself; just as, conversely, necessity is the notion implicit. Necessity is blind only so long as it is not understood. [Shorter Logic 147n]

Reciprocity and the Notion

It is important to distinguish between Reciprocity and the Notion. The learned professor of history will be well aware of how every cause in a particular historical period or juncture was equally an effect and every effect a cause, and be able to trace the constitution of the government, the history of migrations, the development of industry and warfare, etc., etc., all inextricably linked to one another. Such a learned professor may rile against the historian who seeks to understand that period or historical juncture, to put forward a Notion or concept of it, a proposition which gives a "meaning" to what was happening. "Far too simple!", "It was much more complicated than that!", "But it was just as much such and such".

Reciprocal action realises the causal relation in its complete development. It is this relation, therefore, in which reflection usually takes shelter when the conviction grows that things can no longer be studied satisfactorily from a causal point of view, on account of the infinite progress already spoken of. Thus in historical research the question may be raised in a first form, whether the character and manners of a nation are the cause of its constitution and its laws, or if they are not rather the effect. Then, as the second step, the character and manners on one side and the Constitution and laws on the other are conceived on the principle of reciprocity: and in that case the cause in the same connection as it is a cause will at the same time be an effect, and vice versa.

The same thing is done in the study of Nature, and especially of living organisms. There the sexual organs and functions are similarly seen to stand to each other in the relation of reciprocity.

Reciprocity is undoubtedly the proximate truth of the relation of cause and effect, and stands, so to say, on the threshold of the notion; but on that very ground, supposing that our aim is a thoroughly comprehensive idea, we should not rest content with applying this relation. If we get no further than studying a given content under the point of view of reciprocity, we are taking up an attitude which leaves matters utterly incomprehensible. We are left with a mere dry fact; and the call for mediation, which is the chief motive in applying the relation of causality, is still unanswered. And if we look more narrowly into the dissatisfaction felt in applying the relation of reciprocity, we shall see that it consists in the
circumstance that this relation, instead of being treated as an equivalent for the notion, ought, first of all, to be known and understood in its own nature. And to understand the relation of action we must not let the two sides rest in their state of mere given facts, but recognise them, as has been shown in the two paragraphs preceding, for factors of a third and higher, which is the notion and nothing else.

To make, for example, the manners of the Spartans the cause of their constitution and their constitution conversely the cause of their manners, may no doubt be in a way correct. But, as we have comprehended neither the manners nor the constitution of the nation, the result of such reflections can never be final or satisfactory. The satisfactory point will be reached only when these two, as well as all other, special aspects of Spartan life and Spartan history are seen to be founded in this notion. [Shorter Logic § 156n]

Having discovered that causality is a relative concept, the historian who does not understand dialectics (the positivist, for example) remains trapped in a meaningless morass of "interaction". Only a dialectical Notion, the "truth of necessity", can transcend this impasse.

The Actuality of Capitalism

The Actuality of capitalism is the identity of inner and outer: the extraction of value from the labour of workers by means of the wages system, the accumulation of surplus value through interest charges, etc. Actuality means understanding the identity of appearance and existence. It is manifested in the explication of the cause of its effects, as capitalism as the cause of impoverishment, etc., and alienation resulting from wage-labour as the basis of the rule of capital.

**Essence in Natural and Social Developments**

When a social movement first finds a voice, it speaks not with its own voice, but in the language of concepts which history has given it. Thus the first working class organisations were the guilds inherited from feudalism. Before speaking through a mass revolutionary socialist party, the workers build their own bourgeois parliamentary party.

The Division of Essence is that long drawn out and contradictory period from when a class first gets organised in whatever form it finds available, expressing itself in the "socially acceptable" terms of the day, and then goes through a process of the dialectic of Form and Content: the movement takes a particular form, but within this form a new content develops, this content eventually shows itself, overthrows the old form and takes on a new form more adequate to the content, continually revolutionising itself. This is the stage of Appearance.

Through the various forms a movement adopts it begins to learn, its defeats and setbacks are seen not as "bad luck" but as essential; the search of form becomes concentrated, until Form becomes identical with Content. "Freedom is the understanding of Necessity". As a movement grows, its growth and continued existence is subject to conditions, it goes in fits and starts. As the process becomes stronger, it does not simply overcome conditions, but the conditions themselves become part of the
process and development becomes irresistible. This the stage of Actuality, the eve of being in and for itself (the Notion).

**The Essence of Capitalism**

The Essence of capitalism is the production of surplus value. Marx says that we should bear in mind that "the value of commodities has a purely social reality, and that they acquire this reality only in so far as they are expressions of one identical social substance, viz., human labour, it follows as a matter of course, that value can only manifest itself in the social relation of commodity to commodity" [Capital, Chapter 1, Section 3]. Marx traces the contradictory development of value through various forms within pre-capitalist societies, reaching its fullest development as the money-form in the society of generalised commodity production, capitalism. The genesis of value constitutes the Essence of Capital.

**The Essence of the Women's Liberation Movement**

The Essence of the modern Woman's Liberation movement is the value of woman's labour: in the genesis of the Women's movement the concept of Woman goes through a series of contradictory forms: Mother, God's Police, Woman as Equal, Woman as Separate, Woman as Exploited, etc., etc. It is the job of the historian of the Women's Movement to trace and understand the development of these concepts of Woman, which spring from the development of the productive forces and social relations in society as a whole. The socialisation of women's labour beginning in the 1940s is the being of the modern movement (see my paper on "Liberation Epistemology").

**The Essence of Western Philosophy**

The Essence of Western Philosophy (Galileot to Foucault) is the Epistemology, the problem of knowledge, the essence of which in turn is the relation of subject (consciousness) and object (the world outside consciousness, matter). This conception develops in a contradictory fashion reflecting the development of society and industry and the build up of positive knowledge of the world, each philosophy having its own characteristic Notion of the relation of Matter and Mind. See Chapter IX.

**The Essence of Humankind**

The essence of humankind is labour. Homo sapiens distinguished ourselves from Nature by labour: "a process in which both man and Nature participate, and which man of his own accord starts, regulates, and controls the material reactions between himself and Nature. He opposes himself to Nature as one of her own forces, setting in motion arms and legs, head and hands, the natural forces of his body, in order to appropriate Nature's productions in a form adapted to his own wants. By thus acting on the external world and changing it, he at the same time changes his own nature" [Capital, Chapter VII, Section 1]
IV The Meaning of “Reflection”

To a great extent the whole of the Objective Logic of Hegel comes down to an understanding of Reflection (the first subdivision of the Doctrine of Essence).

In inorganic nature, reflection is the process of things reproducing, under the influence of other things, traces or imprints of the things exercising that influence; in organic nature, reflection is an active process, such as in the adaptation of animals to their environment or the irritability of plants and other organisms. Here, properties in the organism which are the outcome of a long process of adaptation by the species are manifested actively by the individual in the immediate influence of other bodies in the environment the like of which have been present during this period of development. The concept of reflection, as the correspondence of mental images with the material world which is the source of those images, is the basis of the materialist approach to cognition.

Hegel's analysis of reflection in terms of the correspondence between phenomena and their essence is founded on his critique of formal logic. It is the most difficult section of the Logic, and in it Hegel explains his concept of contradiction.

It is often the case in reading The Logic, the key to understanding a section is found in the last paragraph of the preceding section:

Measure is implicitly Essence; and its process consists in realising what it is implicitly. The ordinary consciousness conceives things as being, and studies them in quality, quantity, and measure. These immediate characteristics, however, soon show themselves to be not fixed but transient; and Essence is the result of their dialectic. [Shorter Logic § 111n, last section of Doctrine of Being]

Being comes to us as a series of qualities passing one after another, and quantitative change in qualities. Relative stability emerges in the form of Measure (the dialectic of quantity and quality). When we "have the measure of something", we have effectively recognised it, we have "fixed" it in our consciousness and differentiated it from others, but this recognition is only "implicit". When we make this recognition explicit, we "recognise" something, and this is the moment of reflection, the beginning of the stage of Essence.

I find it useful to visualise this "recognition", or "reflection" as the unity of the ascending dialectic of Measure (as something emerges with relative stability from the morass of immediate perception) with hypothetical images (Notions, or mediated knowledge) which have their origin in past Being, which descend to immediacy.
Hegel introduces this idea of hypothesis in the opening section of the Doctrine of Essence in *The Shorter Logic* as follows:

The terms in Essence are always mere pairs of correlatives, and yet not absolutely reflected in themselves: hence in essence the actual unity of the notion is not yet realised, but only postulated by reflection. Essence - which is Being coming into mediation with itself through the negativity of itself - is self-relatedness, only in so far as it is relation to an Other - this Other however coming to view at first not as something which is, but as postulated and hypothesised.

Being has not vanished: but, firstly, Essence, as simple self-relation, is Being, and secondly as regards its one-sided characteristic of immediacy, Being is deposed to a mere negative, to a seeming or reflected light - Essence accordingly is Being thus reflecting light into itself. [*Shorter Logic § 112*]

Being has not vanished in reflection, but is negated. In reflection we have the meeting of two different things (Being and Notion), but Being meets not a stranger, but itself, as an Other, which is mediated, past Being.

This is the "controversial" point in the theory of knowledge, the point at which Kant, for example, falls into scepticism (essence lies beyond perception and is inaccessible to it). Subjective idealism, on the other hand, rejects the objectivity of Being and thus avoids the problem altogether.

Most previous attempts to solve the problem of the correspondence between thought and matter, between subject and object proceeded from a dualist conception, i.e. a separation of subject and object, and formal logic. In order to solve this problem, Hegel rejected this dualist separation of subject and object, and had to make an absolutely thorough-going critique of formal logic.

We cannot go beyond this point, without grasping Hegel's conception of the unity of opposites as the essence of a concept.

**The Essential and Unessential**

This identity [reflection-into-self], as it descended from Being, appears in the first place only charged with the characteristics of Being, and referred to Being as to something external. This external Being, if taken in separation from the true Being (of Essence), is called the Unessential. But that turns out to be a mistake. Because Essence is Being-in-self, it is essential only to the extent that it has in itself its negative, i.e. reference to another, or mediation. Consequently, it has the unessential as its own proper seeming (reflection) in itself. But in seeming or mediation there is distinction involved: and since what is distinguished (as distinguished from identity out of which it arises, and in which it is not, or lies as seeming) receives itself the form of identity, the semblance [or Illusory Being] is still not in the mode of Being, or of self-related immediacy. [*Shorter Logic, § 114*]

When we at first recognise something, the semblance of the thing shows itself out of the infinite richness of immediate perception. With this "hypothesis", we abstract that image from everything else, which is assumed to be "unessential". It is a "mistake", because the inherent movement and contradiction implicit in Being is the "truth of Being", i.e. Essence, and will show itself. Thus thought cannot "draw a boundary
around" this thing, and deal with it as something whose contradiction lies only "externally", in the relativity of perception. On the contrary, Being itself is inherently and implicitly contradictory. The unessential is essence's own unessential, and proves to be equally essential as unessential.

[Essence] is also the sphere in which the contradiction, still implicit in the sphere of Being, is made explicit. [Shorter Logic, § 114]

**Identity, Difference, Opposition and Contradiction - Ground**

In the Shorter Logic (1830), Hegel heads the first Section of Essence "Essence as Ground of Existence", and the first Chapter of that section: "The pure principle or categories of Reflection". It is in this chapter that Hegel develops the concept of contradiction as the essence of a concept, its Ground, by a dialectical unfolding of the concept of Identity through a series of stages in which Identity is successively transformed to reveal the concepts of Difference, Opposition, Contradiction and finally Ground. In the course of this development, Hegel makes a critique of formal logic. I think that this critique of formal logic has led to some misunderstandings and I will deal with formal logic separately in the next chapter, in the form of a reassertion of the relative truth of formal logic and its proper relation to and place in dialectics. For now, let us follow Hegel's critique.

**Identity**

Identity is the affirmative connection between two different moments of perception which asserts that they are one and the same and specifically denies that they are in fact "two different moments of perception" at all. It is also the assertion that in a proposition being true, the denial of that proposition is specifically excluded

The maxim of Identity, reads: Everything is identical with itself, A = A: and negatively, A cannot at the same time be A and Not-A. [Shorter Logic, § 115]

A moment's reflection will show both that consciousness could not take a single step forward without the conviction of identity but equally that the "maxim of Identity" is wrong, that is, that it is a limited, finite truth that will fall over at the first hurdle.

If we recognise something, and say, for example: "Ah! It's a demonstration coming down the road", i.e. not a riot, for example, then we continue to perceive the event, make judgements, etc., on the basis of the same, past perception. We cannot time after time, instant after instant re-look at the approaching crowd as if we had never seen it before. (We can and must of course - that is the philosophy of Being, and it has its relative truth, too, but we have to move forward, we need to know what it is in truth and must move beyond mere immediacy). Thus we again and again assert the maxim of identity, in order to go beyond it.
Water is water whether it be hot or cold, and whatever the amount of solubles it contains. Things continually change, and like the frog who gets boiled because it does not notice the increasing temperature of the water, we "lay aside" the quantitative changes in Being, and say "A = A". Water is good for drinking, making concrete or irrigating our crops whatever its temperature and colour. But A = A only up to a point; water eventually becomes steam or ice, water becomes poison if contain too many salts and metal solutes. What is A one moment, is not-A the next.

"Ah!", the formal logical pedant would say, "A = A refers only to what is was at one particular moment, not a moment later". True, but as Hegel replies, in that interpretation A = A is the merest tautology which tells us nothing about thought or perception, and illustrates this with the contrast between the A's to the left or right of the =-sign. Thus, the law and concept of Identity which Hegel is dealing with here is indeed the same concept as "A = A" in formal logic, but he is dealing with it differently. He has disclosed both its truth and its essential, inherent contradiction, and operates with it, not by rigidly sticking to it, but by unfolding out of it its negation.

The dialectic of Measure implicitly contains the limits of "tolerance" for our concepts; like the tools made by a toolmaker, they are useful only if they correspond within a given "tolerance". And this law of identity reflects an objective character of the world - it's relative stability. It is true and valid to perceive and think in this way, on the basis of the maxim of identity, but ...

It is a universal law of the objective world and thus the world of thought, that "Identity comes to Difference" ...

Diversity (Essential Identity)

"A = A" only makes sense even in the strictest and valid application of formal logic if the first A is indeed not the second A. It is impossible to utter the law other than by making such a distinction!

To ask 'How Identity comes to Difference' assumes that Identity as mere abstract Identity is something of itself, and Difference also something else equally independent ... Diversity has, like Identity, been transformed into a maxim: 'Everything is various or different': or 'There are no two things completely like each other. [Shorter Logic, § 116n]

This "Maxim of Variety", which Hegel attributes to Leibnitz, is indeed a universal, objective law of nature and thought, and I am not aware of any discovery in micro-physics that excludes it either. Hegel shows not just this, but that the Law of Variety (or Diversity) is implicit in the Law of Identity!

Likeness is an identity only of those things which are not the same, not identical with each other: and Unlikeness is a relation of things alike. The two therefore do not fall on different aspects or points of view in the thing, without any mutual affinity, but one throws light into the other. Variety thus comes to be
reflexive difference or difference (distinction) implicit and essential, determinate or specific difference.

[Shorter Logic § 118]

... and further discovers within the "Maxim of Diversity", or the concepts of likeness and unlikeness, the deeper truth of essential difference or "Opposition":

Opposition (or Essential Difference)

When we hold to that moment of "unlikeness", we seek to define it or say just what it is. For example, what makes this demonstration not just a demonstration but a "feeder march"? We are able to "make a point of" this unlikeness, we find that this unlikeness is not just accidental or passing, but essential:

Difference implicit is essential difference, the Positive and the negative: and that is this way. The Positive is the identical self-relation in such a way as not to be the Negative, and the Negative is the different by itself so as not to be the Positive. Thus either has an existence of its own in proportion as it is not the other. The one is made visible in the other, and is only in so far as that other is. Essential difference is therefore Opposition; according to which the different is not confronted by any other but by its other. That is, either of these two (Positive and Negative) is stamped with a characteristic of its own only in its relation to the other: the one is only reflected into itself as it is reflected into the other. And so with the other. Either in this way is the other's own other.

Difference implicit or essential gives the maxim, Everything is essentially distinct; or, as it has also been expressed, Of two opposite predicates the one only can be assigned to anything, and there is no third possible. This maxim of Contrast or Opposition most expressly controverts the maxim of identity...

[Shorter Logic § 119]

Having shown that the maxim (or judgement) of Opposition expressly controverts the maxim (or judgement) of identity, Hegel brings the two together: water over 100°C is not water but steam; but both are the same chemical substance, H2O; "water" and "steam" are but two states of a single chemical substance, whose physical properties can only be defined relative to temperature and pressure; this H2O is neither liquid nor vapour nor solid, and all of them at once.

Contradiction (or Essential Opposition)

We can begin to see how dialectics is the logic of reality, of the world of concrete things, really connected, abstracted by thought yes, but thought which is perceiving reality cannot rest, but is driven deeper and deeper, and comes to contradiction: it not only both is and is not, but is and is not essentially:

Instead of speaking by the maxim of Excluded Middle (which is the maxim of abstract understanding) we should rather say: Everything is opposite. Neither in heaven nor in Earth, neither in the world of mind nor of nature, is there anywhere such an abstract 'either-or' as the understanding maintains. Whatever exists is concrete, with difference and opposition in itself. The finitude of things will then lie in the want of correspondence between their immediate being, and what they essentially are. ... its only being consists in its relation to its other. ... Contradiction is the very moving principle of the world: and it is ridiculous to say that contradiction is unthinkable. The only thing correct in that statement is that contradiction is not the end of the matter, but cancels itself. But contradiction, when canceled, does not leave abstract
identity; for that is itself only one side of the contrariety. The proximate result of opposition (when realised as contradiction) is the Ground. [Shorter Logic § 119n]

When we have grasped the specific contradiction which makes the thing what it really is, then we have perceived it, we have recognised what it is. Not before then. This whole development of the Logic is required to prove this, but in this development of Reflection from Identity to Ground, Hegel has focused on the identity of Being and the Notion and found contradiction at the heart and kernel of the matter. Being can find its Other only in Notions which have their Ground in this dialectical unfolding which leads to inherent, essential contradiction.

Ground (or Essential Contradiction)

The maxim of Ground runs thus: Everything has its Sufficient Ground: that is, the true essentiality of any thing is not the predication of it as identical with itself, or as different (various), or merely positive, or merely negative, but as having its Being in an other, which, being the self-same, is its essence. [Shorter Logic § 121]

This is the conception which leads to Appearance, the dialectic or Form and Content and Actuality, the dialectic of Cause and Effect.

Before moving to a consideration of the place of formal logic in dialectics, I ask the reader to re-call the following passage from The Doctrine of Being in The Shorter Logic:

In the history of philosophy the different stages of the logical idea assume the shape of successive systems, each based on a particular definition of the Absolute. As the logical Idea is seen to unfold itself in a process from the abstract to the concrete, so in the history of philosophy the earliest systems are the most abstract, and thus at the same time the poorest. The relation too of the earlier to the later systems of philosophy is much like the relation of the corresponding stages of the logical Idea: in other words, the earlier are preserved in the later: but subordinated and submerged. This is the true meaning of a much misunderstood phenomenon in the history of philosophy - the refutation of one system by another, of an earlier by a later. Most commonly the refutation is taken in a purely negative sense to mean that the system refuted has ceased to count for anything, has been set aside and done for. Were it so, the history of philosophy would be, of all studies, most saddening, displaying, as it does, the refutation of every system which time has brought forth. Now although it may be admitted that every philosophy has been refuted, it must be in an equal degree maintained that no philosophy has been refuted. And that in two ways. For first, every philosophy that deserves the name always embodies the Idea: and secondly, every system represents one particular factor or particular stage in the evolution of the Idea. The refutation of a philosophy, therefore, only means that its barriers are crossed, and its special principle reduced to a factor in the completer principle that follows. [Shorter Logic § 119n]

Reflection in Nature and Society

As noted at the start of this section, reflection is a universal property of matter, the mutual interaction of every particle in the Universe with every, which other could be said to constitute the "materiality" of the world.
However, there is reflection and reflection. Although a particular atom of iron on the surface of Mars interacts gravitationally with a particular atom of nitrogen in the atmosphere of Earth, this interaction is quite trivial in itself, even if the collective of such interactions is detectable with astronomical instruments in the deviation of Mars in its orbit. The more developed the form of movement and interaction, the more symbiosis and interdependence, then the more manifest is the reflection of the properties and changes of one body in that of the other.

The microbiological world of enzymes and viruses is a vast tangle of processes mirroring one another, of reflection. The evolution of species in the biosphere is in a way, the reflection of the inorganic world, the evolution of one species, the reflection of its organic and inorganic environment. In politics and society we often speak of a particular change or event being "reflected" in such and such an event or change.

What is important to understand is that this capacity of one object to "reflect" the properties of another is based in the genetic relationship between the two species. A particular flower has no knowledge of the Sun; but it turns towards the Sun, reflecting its orientation, because of eons of evolution of the organic world under sunlight. In trying to understand that process, we shall find the actual mechanics by means of which the flower finds the Sun and turns itself towards it very complicated, and invisible without very developed science, and actually of very little use in understanding the process of photokinesis; contrariwise, anthropomorphism (the flower "likes" sunlight) or teleology (the flower turns to the sun "to get warmth") come easily. In general, we can recognise and work with the action of "reflection" long before we can mechanistically trace the process through which reflection takes place, if ever.

**Reflection of social developments in politics, etc.**

Reflection also denotes the process whereby in any complex, i.e. real, system, phenomena at one level reflect processes taking place at a deeper level.

For example, the Being (content) of politics is economic interests; or to put it another way, changes taking place in the relations of production must be reflected in changes and movements in the political sphere. Such a reflection will be qualitatively different and incommensurable with the underlying social change it reflects, and cannot be formally reduced to such underlying change.

For instance, we could say that the upsurge in the women's movement in the 1970s reflected the movement of women into the workforce and the socialisation of women's work (not the other way round!); or that the dominance of mystification in post-modern philosophy and culture reflects the extraordinary level of concentration of capital and accumulation of fictitious capital in this period.

The in-principle impossibility of "mechanical" or formal-logical reduction of the phenomena at one level to those of another is crucial to this concept of reflection.
Reflection and Development

"Existence stated explicitly in its contradiction is Appearance" [Shorter Logic §131], or Appearance is realised contradiction. We have traced how contradiction arises from the sharpening of diversity; this is a continual process; diversity (essential identity) may come and go without such a sharpening into difference, opposition, contradiction and ground; differences may go "unnoticed", or come and go without further development. But it is through this process of reflection that Being manifests itself in development, and that development is driven by contradiction:

If, now, the first determinations of reflection, namely, identity, difference and opposition, have been put in the form of a law, still more should the determination into which they pass as their truth, namely, contradiction, be grasped and enunciated as a law: everything is inherently contradictory, and in the sense that this law in contrast to the others expresses rather the truth and the essential nature of things. The contradiction which makes its appearance in opposition, is only the developed nothing that is contained in identity and that appears in the expression that the law of identity says nothing. This negation further determines itself into difference and opposition, which now is the posited contradiction. But it is one of the fundamental prejudices of logic as hitherto understood and of ordinary thinking that contradiction is not so characteristically essential and immanent a determination as identity; but in fact, ... contradiction is the root of all movement and vitality; it is only in so far as something has a contradiction within it that it moves, has an urge and activity. [The Law of Contradiction, Science of Logic]

Thus, reflection is manifested in the development of any process in the form of contradiction.

The Meaning of Hegel's Logic

V: Formal Logic and Dialectics

Formal logic, which was logic prior to Hegel, saw its field of study as restricted to the laws by means of which the truth of one proposition followed from that of another.

For example, in the words of John Stuart Mill:

Logic, is the science of the operations of the understanding which are subservient to the estimation of evidence: both the process itself of advancing from known truths to unknown, and all other intellectual operations in so far as auxiliary to this. It includes, therefore, the operation of Naming; .. Definition and Classification. [System of Logic, J S Mill]

Ilyenkov explains in his essay on Hegel, that Hegel's revolution in logic was effected by widening the scope of logic and the field of observation upon which the validity of logic could be tested, from logic manifested in the articulation of propositions to the manifestation of logic in all aspects of human practice.
Formal logic also put outside of its scope, the proof of primary or axiomatic truths or the derivation of the categories by which means of which propositions indicated reality. Hegel also broadened logic to include critique or derivation of these categories.

Either way, logic is concerned only with *truth*, that is, with thinking which corresponds to or reflects the world outside of thought, outside of individual consciousness, and further, the criterion of truth for logic is the extent to which it provides an adequate guide to practice.

Just as thought reflects the material world and can contain nothing that does not already exist in the material world, or at least the conditions for its formation, human practice is practice of material human beings in the material world, and there can be nothing in human practice which fundamentally contradicts Nature.

Thus, in elaborating the most general laws governing the development of the social practice, Hegel necessarily uncovered laws which are not unique or special to the human condition, but are objective, material laws of Nature. So, in looking not just at what thought thought of itself, but at what it did, Hegel not only and not so much discovered a far richer means of understanding individual scientific consciousness, but more importantly, the laws governing the development of collective spiritual, cultural or social activity and of the material world in general.

Hegel did not disprove or eradicate formal logic at all, he merely defined its immanent limits and uncovered its inner contradictions, its origin and its own limits, beyond which it necessarily passed over into something else, its life and its death; he negated it; he *sublated* it: formal logic is both overcome and maintained with dialectical logic.

Formal logic is at its most powerful, not at all when it is treated as something of little use to be violated at will, but on the contrary, when it is utilised with the maximum consistency and thoroughness, but with consciousness of its immanent limits and an understanding of when and how it supersedes itself. Nothing is more valueless than uncritical playing with logical contradiction and inconsistency justified by thoughtless and shallow reference to dialectics.

Although I think George Novack is completely wrong in his treatment of formal logic in *The Logic of Marxism*, his basic initial proposition on the validity of formal logic is profoundly correct:

> What characteristics of material reality are reflected and conceptually reproduced in these formal laws of thought? The law of identity formulates the material fact that definite things, and traits of things, persist and maintain recognisable similarity amidst all their phenomenal changes. Wherever essential continuity exists in reality, the law of identity is applicable. ...

> We could neither act nor think correctly without consciously or unconsciously obeying this law. If we couldn't recognise ourselves as the same person from moment to moment and from day to day - and there are people who cannot, who through amnesia or some other mental disturbance have lost their
consciousness of self-identity - we would be lost. But the law of identity is no less valid for the rest of the universe than for human consciousness. It applies every day and everywhere to social life. If we couldn't recognise the same piece of metal through all its various operations, we couldn't get very far with production. If a farmer couldn't follow the corn he sows from the seed to the ear and then on to the meal, agriculture would be impossible. ...

The infant takes a great step forward in understanding the nature of the world when he grasps for the first time the fact that the mother who feeds him remains the same person throughout various acts of feeding. The recognition of this truth is nothing but a particular instance of the recognition of the law of identity. [The Logic of Marxism, Lecture 1, Part 4]

**The Law of Identity**

Thus, (continuing our theme of approaching Hegel's Logic from the point of view of a theory of cognition) perception begins when we **recognise something**, when we perceive something as **persistent** in the stream of "one damn thing after another" of immediate perception, when we can say "A = A". The whole of formal logic rests on this identity of a thing with itself, with recognition of the continuity of something. The whole of formal logic falls to pieces when "A not = A".

It is manifestly obvious that identity is an **abstraction**, and:

If it be the office of comparison to reduce existing differences to Identity, the science which most perfectly fulfills that end is mathematics. The reason of that is that quantitative difference is only the difference which is quite external. ... [Shorter Logic, § 117n] ... If quantity is not reached through the action of thought, but taken uncritically from our generalised image of it, we are liable to exaggerate the range of its validity, or even to raise it to the height of an absolute category. And that such a danger is real, we see when the title of exact science is restricted to those sciences the objects of which can be submitted to mathematical calculation. [Shorter Logic, § 99n]

But it is equally obvious that identity and quantity and mathematics are abstractions which reflect material reality, and identity is an abstraction which, as Novack points out, is the fundamental basis of human practice. While in a certain limited sense the world is recreated anew every minute, we act, in practice, for most of the time, on the basis first of all of continuity.

As referred to in the above quote from The Shorter Logic, the science of Identity is Mathematics. Mathematics is the science in which formal logic is applied in a specific sense, and in this special sense, is adhered to inflexibly and with unquestionable heuristic value.

In mathematics proper, it should be remembered, "A" indicates absolutely anything; it is quite meaningless (Being = Nothing) and in the proposition "A = A", the operative symbol is the "=". The proposition is an empty tautology in so far as it is deemed to make any statement about A. If we make a non-mathematical interpretation of "=" , such as "this A is the same as that A" then the statement is tautological if we allow that the A refers to one and the same. If we allow that the first A is distinct from the second A,
then the statement is real and valid and dialectical, but not mathematical. (But of course, if mathematics was excluded from being ultimately interpreted or applied "non-mathematically", it would be utterly lacking in content).

This is not at all to say that dialectics is absent from mathematics. Unthinkable. The movement from one proposition to another is always dialectical and only sometimes and in a certain respect formal. But without formal logic, there is no mathematics. While it is nonsense to elevate mathematics to be a model for all sciences (as was common in past centuries), it is nonsensical to devalue mathematics as a science.

But formal logic is not at all limited to mathematics. The first condition for the validity or relevance of formal logic is the relative validity of identity in respect of the precise movement of cognition in question. And Hegel had great fun of course with the struggle mathematics had with the invention of calculus. Leibnitz and Newton created this fantastically powerful instrument (which among other things is the principal method by which the laws of Nature may be expressed in general form, and which laid the basis for a new revolution in applied mathematics and natural science), only by blatantly bluffing their way over crying formal logical sleight-of-hand. It has only been in recent years that mathematics has been able to provide a formal logical derivation of calculus from its foundations. Leibnitz and Newton thought dialectically, and let posterity look after the formal proof of their discovery.

In practice we regard the world as not only subject to change, but subject to our change. In scientific thinking we regard objects critically, as subject to analysis and synthesis. To the extent that we regard an object critically, regard reality as something to be changed, then we specifically reject the law of identity, and assert that "A not = A", and formal logic takes a break. Here we cannot grasp an "A" with the aim of carrying it forward to use in other relations, but aim to revolutionise it and uncover from its clothes a new A, A-, if you like.

In the Chapter on Reflection in The Logic, Hegel deals with the Law of Identity, Law of Excluded Middle, Law of Non-Contradiction and Law of Sufficient Ground as a series of propositions or relations which unfold, each negating the other in a series of dialectical stages. These moments are discussed above in The Meaning of Reflection. For now, I would like to reflect on their status in formal logic, for while all Hegel's nineteenth century readers would have been trained in formal logic, that is probably not the case today.

**The Law of Excluded Middle**

The Law of Excluded Middle states that if a proposition A is not true then its denial "not-A" is true. Even within the narrow limits of formal logic this "law" is unreliable, and common sense will confirm the view that this line of reasoning is unreliable. The Dutch logician Bruuwer reconstructed mathematical logic by eliminating the law of Excluded Middle from the rule book, and showed that mathematics is little the worse
for the loss. Indeed, the Quantum Logic of Weisäcker is based upon the inclusion of a truth value of "indeterminate".

**The Law of Non-Contradiction**

The Law of Non-Contradiction states that both a proposition, $A$, and its denial, not-$A$, cannot be true within the domain of a single "theory", within the domain of validity of the law of identity, "$A = A". This law is indeed fundamental to formal logic.

It is well known that the consistent application of the basic set of formal logical principles leads to "antinomies", or flat contradictions. This discovery contributed to Hegel's revolution in logic, but also led to further development within formal logic. Nowadays, the conditions which give rise to such contradictions are well known, and formal logic is able to proceed while reliably avoiding such "bad" contradictions by the introduction of a number of proscriptions on the categories.

At first glance, it would seem that an explanation of these limitations would be of great significance, but we will not pursue the question here.

**The Law of Sufficient Ground**

In so far as the Law of Sufficient Ground may be said to exist in formal logic, it is the so-called law of decidability, that any proposition which is valid within a given theory, may be proved or disproved. In 1931, Kurt Gödel disproved this thesis in his famous Gödel's Theorem. This discovery brought about a huge crisis in the world of mathematics and logic, but it can hardly be said that it reduced formal logic to a nullity.

Nevertheless, Hegel's comment in regard to the method of proceeding from unproven axioms is very apt and is what essentially distinguishes dialectical logic from formal logic:

Formal Logic asks these sciences not to accept their subject-matter as it is immediately given; and yet herself lays down a law of thought without deducing it - in other words, without exhibiting its mediation. [*Shorter Logic* § 121n]

Further, the absolute status of this law is rejected in quantum mechanics, although Einstein held to his dying day that this theory could not be regarded as complete, and that therefore further grounds for the behaviour of quantum-mechanical systems were awaiting discovery. This topic is well worthy of further discussion, but will not be pursued here.

However, more significantly, complexity theory has demonstrated that phenomena in a complex system follow from the inner structure of the system which in principle cannot be derived from that inner structure by the methods of formal logic. The empirically established limitation of formal logic is more or less widely recognised outside of
professional mathematicians, and is broadly the same as the commonly accepted fallaciousness of reductionism.

**The Notion, Judgement and Syllogism - Universal, Particular and Individual**

The other component of formal logic is the syllogism, which Hegel subjects to criticism in the Doctrine of the Notion.

The syllogism is the method of inference, first developed by formal logic, in which from two statements a third is inferred. For example, "All A are B", "C is an A", **therefore** "C is B".

The Universal, Particular and Individual are categories closely related to the syllogism:

- the Universal is a truth which applies always and everywhere, such as "A", "B" (notions) and "All A are B" in the above example, as aspects of knowledge are the outcome of a protracted period of social development;
- the Individual ("C" in the above example) is knowledge as given in immediate perception;
- the Particular is a kind of joining of individual and universal, a finite but generalised truth ("C is an A" and "C is B").

All the above concepts have undergone considerable development in the history of philosophy, and the above only indicates the general scope of the concepts.

Hegel's critique of the formal logical concept of syllogism is very profound. In the first place, his understanding of the Notion (the "A" and the "B") is fundamentally at odds with that of formal logic as is his notion of Judgement (the "is"). Whereas, for formal logic, the Universal, Individual and Particular exist side-by-side and independently, in external relation to one another, for Hegel these categories are moments of development, essentially and generically connected with one another.

In the second place, his Notion of the Notion demonstrates in practice this more profound approach and provides the archetypal demonstration of his method of deriving a concept from its own immanent nature, rather than by external definition as an abstract universal.

In the third place, he anticipates the materialist critique of logic by demonstrating that the syllogism and its categories of universal, particular and individual are "forms of the notion, the vital spirit of the actual world".

The Logic of the Notion is usually treated as a science of form only, and understood to deal with the form of notion, judgement, and syllogism as form, without in the least touching the question whether anything is true. The answer to that question is supposed to depend on the content only. ... On the contrary they really are, as forms of the notion, the vital spirit of the actual world. That only is true of the actual which
is true in virtue of these forms, through them and in them. As yet, however, the truth of these forms has never been considered or examined on their own account any more than their necessary interconnection.

... The Notion as Notion contains the three following 'moments' or functional parts. (1) The first is **Universality** - meaning that it is in free equality with itself in its specific character. (2) The second is **Particularity** - that is, the specific character, in which the universal continues serenely equal to itself. (3) The third is **Individuality** - meaning the reflection-into-self of the specific characters of universality and particularity; which negative self-unity has complete and original determinateness, without any loss to its self-identity or universality. [Shorter Logic, § 162]

**The Notion and the Abstract Universal**

For formal logic the form of the category is considered to lie outside its domain, with a minor exception in relation to limits which are prescribed in order to avoid antinomies. The nearest formal logic can come to conceiving of the Notion is the "class", which indicates by some effective means, individuals to which can be attributed an "abstract universal". An "abstract universal" is that property which is common to many individuals.

The notion is generally associated in our minds with abstract generality, and on that account it is often described as a general conception. We speak, accordingly, of the notions of colour, plant, animal, etc. They are supposed to be arrived at by neglecting the particular features which distinguish the different colours, plants, and animals from each other, and by retaining those common to them all. ... But the universal of the notion is not a mere sum of features common to several things, confronted by a particular which enjoys an existence of its own. It is, on the contrary, self-particularising or self-specifying, and with undimmed clearness finds itself at home in its antithesis. For the sake both of cognition and of our practical conduct, it is of the utmost importance that the real universal should not be confused with what is merely held in common. ...

The universal in its true and comprehensive meaning is a thought which, as we know, cost thousands of years to make it enter into the consciousness of men. [Shorter Logic, § 163n, The Subjective Notion]

No wonder Hegel regards the logic based around the Notion as abstract universal as simply a "yawn"! It is very trivial stuff, and when not trivial usually false. When rigorously elaborated to an exceedingly high level of complexity, as in developed branches of mathematics, it can provide a substance of some interest, but is of a very restricted domain of truth, which is the same as the domain marked out by the extent of validity of the Law of Identity, and broadly recognisable as what is known in mathematics as Set Theory, the Theory of Groups, and so on.

Classes (abstract universals) in mathematics lead a kind of "double existence", once as a "collection" of "elements" having a given property and secondly as the property which constitutes the notion of the class or set. For example, "the working class" is (to the formalist) on the one hand a list of the names of employees taken from the Taxation Office records and on the other the definition "people who earn a living from a wage or salary".
Again, as an indispensable, though far from exhaustive, component of mathematics, the abstract universal has its place. But in the context of creative social or natural theory that is a very small place.

But again, the same comments as above apply. In so far as "A = A", as the relations between things remain unchanged, as the things conceived of remain separate and distinct, and things remain identical with their Notion, the notion of abstract universal retains validity. The whole of Hegel's *Logic* constitutes a more profound concept of "notion", and from the standpoint of Hegel's Notion, it is easy to see how limited is formal logic's notion of Abstract Universal. These aspects of formal logic are treated in Hegel's Part III of *The Logic*, Doctrine of the Notion.

The issue is, how to understand and recognise the boundaries of formal logic.

**The limits and negation of formal logic**

There is not a simple, formal answer to this question of course. Otherwise formal logic would have already discovered it!

The whole of Hegel's *Logic* teaches us how to determine the limits of a concept or proposition. For example, in the Doctrine of Being, we study the dialectic of Measure, which expresses the limits of Quantity and Quality. Trotsky's article *The ABC of Materialist Dialectics* focuses on this limitation of formal logic, that every concept has its limits of "tolerance". In the Doctrine of Essence we study, among other things, the dialectic of Form and Content. In short, Hegel, demonstrates and teaches the "art of handling concepts". As Hegel more than once complains, formal logic accepts uncritically not just the things it sees in the objective world, but the categories it uses to grasp reality.

In unfolding the limitations of formal logic from its "germ" in the law of identity - "A = A", Hegel demonstrates how all concepts must be understood, not by simple abstract universal definitions, but as dialectical, internally contradictory subject-object relations, which are nothing but moments abstracted from, or plucked out of a continually moving and developing reality. Our Notions of the world can only adequately approximate the world to the extent that our Notions reflect that essential movement and life.

For example, it is easy to say: "A is a B", "All B are C", therefore "A is C", but what is a B? "Arthur is a policeman", "Policemen work for a wage", therefore "Arthur is a worker", therefore, ...etc., etc. And you can push the definitions around as much as you like, making them "more precise", and it does take you one whit closer to an understanding of the social relations between individuals. "Worker" is an individual and a social category. Social categories have existence and laws which cannot be equated with many individual relations. The working class cannot be pulled out of the records of the Taxation Office listing all those who earnt wages in the last financial year. The whole is *not* equal to the sum of the parts.
Complexity, Mathematics and Dialectics

This is the first limitation of formal logic, what could be called its "inner boundary". The second, its "outer boundary", is that imposed by complexity. If a system is sufficiently complex and "rich", then the phenomena that arise in it cannot be reduced to the properties of the system's component sub-systems. For example, it is fairly well-known that attempts by macro-economists to model the world economy using, for example, up to 4,000 simultaneous differential equations, invariably fails to predict any significant phenomena outside of the usual ebb and flow of indicators.

Over the past decade, a new science has emerged known as "Complexity". This science uses computer simulation to empirically investigate the outcome of very few, very simple formal rules governing the interaction of a large number of component sub-systems, or individuals, in a system.

The need for an empirical science to study these phenomena is explained by a corollary of Gödel's Theorem discovered by Alan Turing, the founder of Computer Science: that in any computational system there at least one algorithm, the results of which cannot in principle be predicted. This is a bit of truism for anyone who has programmed a complex computer system!

The implication for understanding the relation of formal and dialectical logic is profound. In any complex (i.e. real) system, the phenomena exhibited arise out of the relations of the component systems in a way which cannot in principle be deduced by formal logical analysis; and this is true even where the atomic relations are absolutely simple and static.

Such complex systems fall initially into two kinds: those where the atomic relations lead to a static or repetitive structure in the mass, where the mechanical application of formal logical analysis is valid, and those that lead to chaos, where the Law of Large Numbers and probability theory is valid. A simple measure derived from the atomic relations indicates whether the system is likely to be structured or chaotic. But there is also a third case, the border-line or transition case, where the atomic relations lead to "complex behaviour", rich in form, leaps, sudden transformations and dynamic structures, all in principle unpredictable from the standpoint of formal logic.

Furthermore, it has been empirically established that where the sub-systems have the capacity to replicate and mutate in some way (the normal condition of any significant "real" system), thus modifying the balance of the atomic relations, the system will in time either "die", or gravitate to a complex transition system, from a chaotic or structured state to a complex one, from a stable, predictable system to one giving rise to complex, "revolutionary" phenomena. Empirical computer simulation has reproduced analogues of systems (neurological or social) which learn, the origin of life from a "primeval soup", punctuated evolution, etc.
The scientists who are doing this work have expressed serious concerns about the state of the world economy, especially after the end of the relatively stable Cold War Period, and have tended to become fans of Heraclitus or Taoism; interestingly, none of them have so far recognised that a very precise science of the logic of complexity already exists in the Logic of Hegel.

**Formal Logic in Nature and Society**

As remarked above, formal logic reflects the relative stability in Nature. Formal logic works fine in physics, so long as atoms are hard little balls; but as soon as quantum behaviour slips into the picture and particles "leap", transform one into another, disappear and reappear, behave like waves and so on, formal logic gets into trouble.

But it should be noted, for very very much physics and chemistry even today, the "hard ball" model of the atom is quite sufficient for the purposes of practical and theoretical work.

In politics, the electoral system is the very embodiment of formal logic: 100,000 isolated human atoms utter "Yes" or "No" to a single question, and from this the most dramatic and usually desperately inadequate conclusions follow.

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**The Meaning of Hegel's Logic**

**VI: The Notion in Hegel's Logic**

The Notion (of something) is people’s generalised enduring image of it, which has taken shape and is acquired in the course of social practice, held in the mind without the immediate action of the thing upon the senses (as in immediate perception).

To the ordinary non-philosophic understanding, the notion is given immediately in experience; to empiricism, the notion is nothing but an "abstract universal" denoting a collection of individual things possessing a common property; to metaphysical philosophy before Hegel, the Notion is given by intuition or is a self-evident truth arrived at by introspection, and for subjective idealism the Notion has no referent in the objective world.

Hegel's conception is radically different and profound. All the elements of Hegel's dialectic are to be found in the nature of the Notion as elaborated in Hegel's *Logic*. 
Truth is Historical

In the history of philosophy the different stages of the logical idea assume the shape of successive systems, each based on a particular definition of the Absolute. As the logical Idea is seen to unfold itself in a process from the abstract to the concrete, so in the history of philosophy the earliest systems are the most abstract, and thus at the same time the poorest. The relation too of the earlier to the later systems of philosophy is much like the relation of the corresponding stages of the logical Idea: in other words, the earlier are preserved in the later: but subordinated and submerged. This is the true meaning of a much misunderstood phenomenon in the history of philosophy—the refutation of one system by another, of an earlier by a later. Most commonly the refutation is taken in a purely negative sense to mean that the system refuted has ceased to count for anything, has been set aside and done for. Were it so, the history of philosophy would be, of all studies, most saddening, displaying, as it does, the refutation of every system which time has brought forth. Now although it may be admitted that every philosophy has been refuted, it must be in an equal degree maintained that no philosophy has been refuted. And that in two ways. For first, every philosophy that deserves the name always embodies the Idea: and secondly, every system represents one particular factor or particular stage in the evolution of the Idea. The refutation of a philosophy, therefore, only means that its barriers are crossed, and its special principle reduced to a factor in the completer principle that follows.

Thus the history of philosophy, in its true meaning, deals not with a past, but with an eternal and veritable present: and, in its results, resembles not a museum of the aberrations of the human intellect, but a Pantheon of godlike figures. These figures of gods are the various stages of the Idea, as they come forward one after another in dialectical development. [Shorter Logic § 86n]

Each of the parts of philosophy is a philosophical whole, a circle rounded and complete in itself. In each of these parts, however, the philosophical Idea is found in a particular specificity or medium. The single circle, because it is a real totality, bursts through the limits imposed by its special medium, and gives rise to a wider circle. The whole of philosophy in this way resembles a circle of circles. The Idea appears in each single circle, but, at the same time, the whole Idea is constituted by the system of these peculiar phases, and each is a necessary member of the organisation. [Shorter Logic §15]

Each of the stages of the Notion we have discussed so far, the various moments of Being and Essence, are also notions. Every notion has relative truth as a finite part or stage in the development of human knowledge, partially reflecting objective reality. Each notion has its own genesis and forms part of the genesis of deeper, more concrete notions, like the multifarious species which make up the animal kingdom, each being a living organism in itself, but also forming a part of the process of evolution of species. This approach to knowledge is both critical and creative.

... Philosophy is a knowledge through notions because it sees that what on other grades of consciousness is taken to have Being, and to be naturally or immediately independent, is but a constituent stage in the Idea. ... The notion, in short, is what contains all the earlier categories of thought merged in it. It certainly is a form, but an infinite and creative form which includes, but at the same time releases from itself, the fullness of all content. ...

If, as was said at an earlier point, the different stages of the logical idea are to be treated as a series of definitions of the Absolute, the definition which now results for us is that the Absolute is the Notion. That necessitates a higher estimate of the notion, however, than is found in formal conceptualist Logic, where
A key concept in Hegel's historical approach is "sublation":

To sublate, and the sublated ... constitute one of the most important notions in philosophy. It is a fundamental determination which repeatedly occurs throughout the whole of philosophy, the meaning of which is to be clearly grasped and especially distinguished from nothing. What is sublated is not thereby reduced to nothing. ...

'To sublate' [aufhaben] has a twofold meaning in the language: on the one hand it means to preserve, to maintain, and equally it also means to cause to cease, to put an end to. Even 'to preserve' includes a negative element, namely, that something is removed from its influences, in order to preserve it. Thus what is sublated is at the same time preserved; it has only lost its immediacy but is not on that account annihilated. [The Science of Logic, Book I, Becoming]

So, when we come across a particular idea, or social movement or tendency, etc., we see not an isolated proposition which is more or less wrong in this or that respect, but a moment of development, we see it in motion, in interconnection with others, we see its inherent logic, its relative validity and its internal contradictions; we see it as part of history. We see ourselves as part of history.

Such a view is easily understood, but only to the extent that we become familiar with the history of things and the variety and interconnection of things, does this historical approach provides us with a rich and living view of the world. Consequently, dialectics presupposes a continuous study of the history of ideas, social movements and all natural and social phenomena.

The Notion of a Thing is the Truth of its Genesis

When we say that truth is historical, this observation has a further meaning. For example, if we define "fish" in terms of a sub-category of species organised in the manner of Linnaeus, we quickly find ourselves with a host of hybrids and "border-line cases" which cannot be satisfactorily classified "fish" or "not-fish" without in fact losing the notion of Fish. "Fish" is in fact not a set of properties be means of which an object may be classified as "fish" or "not-fish" - as a result of the discovery by Darwin of the origin of species, we can now understand the category of "fish" as a particular stage or arm in the evolution of species, and it is by the relation of a given species to this genesis that we may call it "fish" or "not-fish".

It is important to understand that the notion of a thing is not just it's history, the story of it's rise and fall, but the underlying principle or truth of its genesis.

For example, very many factors participate in the rise of capitalism in history, but Marx showed that capitalism is generalised commodity production, that is, Marx created a Notion of capitalism. This Notion of capitalism included within it Marx's tracing of the
history of the commodity relation, which stretched back way before the appearance of capitalism and will continue beyond it.

This approach to a Notion is radically different from that which seeks a Notion in terms of a definition specifying the properties or relations of thing which are definitive or normative. It may in fact be flatly at odds which such a definition. For example, if we interpret Marx's notion of capitalism as an abstract universal, we might be inclined to categorise Ancient Rome as capitalist in a small way or the Soviet Union of the period of War Communism as having overcome capitalism.

On the other hand, a vulgar historical view of the nature of capitalism might lead one to believe in the anarchist slogan: "Property is theft", since the primitive accumulation of capital was based not upon the gradual spread of market relations, but on theft.

These two opposite aspects of the relation between concepts and historical development (concepts as moments of historical development and as the truth of historical development) are synthesised in Hegel's Logic, where Hegel derives the Notion as its own genesis from the concept of Being or immediate perception, and demonstrates that this genesis is the underlying general principle or "spirit" of the real historical development of the Notion in the history of philosophy.

The Truth is both Subjective and Objective

In the history of philosophy, correctly understanding the relation between subject (consciousness, or the ego) and object (the material world) has been a central and difficult problem. This will be discussed further later on, but for here we must observe that Hegel made an epoch-making step towards solving this problem by means of a dialectical analysis and synthesis of the object-subject relation. Instead of starting with an artificially separated subject and object and then trying to figure out how it was that the subject managed to reflect the object, in Hegel's Logic, the subject (Notion) distinguishes itself out of the object (Being), just as in the real history of humankind, people distinguished themselves from Nature by producing their means of subsistence.

Being and essence are so far the moments of its [the Notion's] becoming; but it is their foundation and truth as the identity in which they are submerged and contained. They are contained in it because it is their result, but no longer as being and essence. That determination they possess only in so far as they have not withdrawn into this their unity.

Objective logic therefore, which treats of being and essence constitutes properly the genetic exposition of the Notion. [Science of Logic, The Notion in General]

Consciousness does not go out and "discover" Nature and society, it emerges out of Nature and society, and is their product. The key to resolving the problems of the subject-object relation is to understand the subject as part of and an outcome of the object.
This approach, along with the genetic conception of Notions, is the key to Hegel's solution of the problem of dualism and scepticism which Descartes, the empiricists from Hobbes onwards, Hume and Kant, were unable to solve. The postulation of a priori concepts and categories is equally untenable as the immediate perception of concepts and categories in sensation.

Likewise, Marx approached the resolution of the crisis of capitalism and the struggle for socialism, not only by understanding capitalism as "it's own grave-digger" in creating the world market, modern industry and the proletariat, but also by understanding the working class as both the subject and object of its own liberation.

The Crisis in Modern Physics

The epistemological implications of the discoveries of quantum physics and relativity in the first quarter of this century is a subject far too large and complex for this short booklet. However, the following remarks are pertinent.

The contradiction between 2,200-year-old Euclidean geometry and the observed constancy of the velocity of light in a vacuum and the principle of relativity of motion, and the discovery of the wave-particle nature of sub-atomic particles presented natural scientists with epistemological problems, the resolution of which was a practical necessity for their work but for which their own philosophical knowledge and that of their peers was totally inadequate.

In my view it is entirely due to the political reaction against Marxism, that the philosophical achievements of Hegel and Marx were unknown to Western scientists. As a result, Ernst Mach's recession to Berkeleyism confused even the great Albert Einstein, and most physicists remain in the grip of positivism to this day. Einstein remained a materialist and looked to Spinoza, Heisenberg, initially a subjective idealist, later embraced the objective idealism of Plato, but outside of the USSR, few have any knowledge of dialectics.

The Correspondence Principle

This principle says that for speeds much less than the velocity of light, and macro-dimensions of mass and distance, the equations of general and special relativity and quantum mechanics must converge to those of Newtonian physics. This principle was introduced by Einstein as one of the basic postulates upon which he derived the theory of relativity, and was introduced by Niels Bohr as an essential element in the resolution of the paradoxes of quantum theory.

Within the world of macro-dimensions, our experience has imbedded certain concepts with the force of truisms and form the basis of a firmly established body of science. These concepts must be retained just as they are simultaneously terminated in a new
scientific theory based on new insights, and the principle of correspondence expresses in mathematical terms Hegel's principle of "sublation".

Operational Definition of Physical Concepts

Einstein's critique of the Newtonian concepts of simultaneity and distance in terms of the operations, or material interactions, by which these concepts manifest themselves within a physical system is a profound application of the dialectical development of concepts hitherto regarded as a priori, and one in which the subject-object dualism of Newtonian physics is overcome in an entirely materialist and dialectical fashion. Percy Bridgman, however, transformed this insight into an absolute, contrary to the dialectical view of operationalism as a "stage in the development of the Idea".

The Principle of Complementarity

Niels Bohr introduced this principle under which a quantum interaction must be described in terms of wave-concepts and in terms of particle-concepts, and the two descriptions are together taken as a complete description of the properties of the interacting objects, despite the fact that no interaction can simultaneously correlate with both systems of concepts completely.

This concept of quantum-objects is a true Notion, a unity of opposites, and the truth of its contradictory essence and unmediated Being.

The problem of Visualisation

I think not enough attention has been paid to the prejudice that a concept cannot be considered as "real" unless it can be "visualised". This is found for instance in Kant, who accepted as a priori, concepts of space and time which later proved to be "empirical", while at the same time fighting against the dogmatism of extending concepts derived from experience to "things-in-themselves".

But the contrary is true. The thing-in-itself is manifested in Essence, and Essence is contradictory, and Notion must be a unity of opposites, and grasps both Being and Essence in a single thought; Being cannot be "visualised" otherwise.

Absolute and Relative

Linked to the question of subject and object, is the question of the absolute and the relative. The historical view of concepts does not mean that "everything is relative"; within the relative is an absolute - but the absolute is also relative, or as Lenin says: "in (objective) dialectics the difference between the relative and the absolute is itself relative." [Philosophical Notebooks].
Hegel says: "The different stages of the logical idea are to be treated as a series of definitions of the Absolute". [Shorter Logic § 160n]. In other words, in the history of thought and in the development of any specific theory or concept, at various stages or key points of development, an aspect of the truth is fixed upon and "elevated into an absolute"; but in the course of its own development, this absolute proves to be relative, and is overcome by a new concept. But what is absolute is retained and carried forward; the absolute is the whole movement, which is submerged in the notion, but is also contained in that relative concept which is a stage in the genesis of the notion. "The definition, which declares the Absolute to be the Idea, is itself absolute. All former definitions come back to this". [Shorter Logic, § 213]

For instance, capitalism is just a passing stage in the history of humanity (a relative), but it is a necessary stage (absolute). Or the nature of a thing is a matter of opinion, but not just a matter of opinion. And so on.

**The Truth is both Immediate and Mediated**

This fundamental unity of subject and object is also manifested in the identity of conceptual, socially constructed and immediate, sensual knowledge. And Hegel solves this problem in a way which is diametrically opposite to the sceptical, subjective conclusion of his predecessor, Immanuel Kant.

... truths which we well know to be results of complicated and highly mediated trains of thought present themselves immediately and without effort to the mind of any person who is familiar with the subject. The mathematician, like everyone who has mastered a particular science, meets any problem with ready-made solutions which presuppose most complicated analyses: and every educated person has a number of general views and maxims which he can muster without trouble, but which can only have sprung from frequent reflection and long experience. The facility we attain in any sort of knowledge, art, or technical expertness, consists in having the particular knowledge or kind of action present to our mind in any case that occurs, even, we may say, immediate in our very limbs, in an outgoing activity. In all these instances, immediacy of knowledge is so far from excluding mediation, that the two things are linked together - immediate knowledge being actually the product and result of mediated knowledge. [Shorter Logic § 66]

Notions, or concepts, are the product of a protracted period of social practice [and the objectivity of Notions is founded in the objective character of human practice]. As stated above in indicating the general meaning of "notion", notions are held in the mind without the immediate stimulus of the senses. Nevertheless, when we perceive something, we believe that we have them immediately, that they are not products of our thought, but exist objectively and are given to us in immediate perception and indeed they are!

When we look at "the Moon", we do not question the immediacy of this perception. A murky cloud-covered view we would unhesitatingly refer to as "the Moon" equally as the Moon on a clear night. The Moon itself is inseparable from our concept of it, and has reflected sunlight on to countless generations of people. And in apprehending the
Moon, we apprehend that which is referred to in the word "lunacy" and the words "romantic moonlit night" and which causes the tides.

In our Notion of "the Moon" there is both immediate Being and the whole history of development of the concept of Moon in human history, which is its "Essence", inseparably.

Abstract immediacy is no doubt a first; yet in so far as it is abstract it is, on the contrary mediated, and therefore if it is to be grasped in its truth its foundation must first be sought. Hence this foundation, though indeed an immediate, must have made itself immediate through the sublation of mediation.

From this aspect the Notion is to be regarded in the first instance simply as the third to being and essence, to the immediate and to reflection. Being and essence are so far the moments of its becoming; but it is their foundation and truth as the identity in which they are submerged and contained. They are contained in it because it is their result, but no longer as being and essence. [The Science of Logic, The Notion in General]

For dialectics, Essence is not a "thing-in-itself", beyond and inaccessible to perception, but is contained in Being and Being shows itself in Essence. Dialectical criticism is not negative and sceptical, but grasps the Notion as a contradiction and holds fast the contradiction between the concept and immediate perception.

Even (or rather especially) when what we see sharply contradicts what we know it to be, truth lies neither in abandoning our former opinion nor in ignoring the evidence of the senses but in forming a unity of the two: modifying our former opinion and seeing it in a new light, finding in immediate perception what was formerly so but now is not so.

**Truth is Concrete**

In the next chapter, we shall look at the development of the Notion, from a simple abstract concept to a more and more concrete concept, but it must first be noted that we do not use the words "abstract" and "concrete" to contrast the ideal and mental versus the material and sensual. Rather, "abstract" refers to the simplicity of a single thing or aspect of a thing which is torn away from its connection with other things, other aspects, from historical development, while "concrete" on the other hand, refers to the combination of many aspects and interconnections, of many abstractions. Hegel remarks:

Sensuous consciousness is in ordinary estimation the most concrete and thus also the richest; but that is true only as regards materials, whereas, in reference to the thought it contains, it is really the poorest and most abstract. [Shorter Logic, §85n]

We find truth in immediate perception because of the richness of its content, but the concepts that immediately arise from immediate perception are the most abstract and poorest (contrary to the obsession of bourgeois social science with statistics, surveys and so on). The dialectical notions which form the basis of rational analysis are abstract in their simplicity (such as the concept of the atom in the beginnings of the science of
physical chemistry) but must be deemed concrete inasmuch as they contain within them the whole history leading up to their conception, negating all earlier concepts of the thing which have outgrown their limits and been negated and carried forward.

The truth of such concepts lies in this concreteness of their genesis. The abstractness of the notion is overcome by the further development of the notion:

... the Notion has *subjugated* being and essence, which from other starting points include also feeling and intuition and representation, and which appeared as its antecedent conditions, and has proved itself to be their *unconditioned ground*. There now remains the second aspect, to the treatment of which this Third Book of the Logic is devoted, namely the exposition of how the Notion builds up in and from itself the reality that has vanished in it. It has therefore been freely admitted that the cognition that stops short at the Notion purely as such, is still incomplete and has only as yet arrived at *abstract truth*. But its incompleteness does not lie in its lack of that presumptive reality given in feeling and intuition but rather in the fact that the Notion has not yet given itself a reality of its own, a reality produced from its own resources. [*The Science of Logic. The Notion in General*]

In Being, in immediate perception we have from the conceptual point of view, the least truth, because we have in any given moment just one passing, relative aspect or quality. A true concept can only be formed by the development out of immediate perception of its truth, which emerges through a protracted process each stage of which sums up and sublates the relative, abstract truth of the former. Although this process aims at forming a simple kernel or key, at finding what is, its truth, the process of forming this abstraction is a process of concretisation of the concepts through which the development takes place.

**Knowledge proceeds from the abstract to the concrete**

From the standpoint of a modern day chemist, the nineteenth century notion of "molecule" is very abstract in that it was simply the concept of the smallest unit of a substance which had chemical properties, combined with others in definite whole number ratios, and had a molecular weight. The modern concept of molecule is extremely concrete, because it includes within it a vast body of science and experience, reflected in a highly complex and elaborated concept of molecular structure and dynamics and the various concepts of atoms and sub-atomic entities.

The absolute idea may in this respect be compared to the old man who utters the same creed as the child, but for whom it is pregnant with the significance of a lifetime. [*Shorter Logic §237*]

So, to a youngster, the concept of *nationality* is very abstract in the sense that though she/he may know the concept, it cannot mean very much to one who has no experience of war, migration, ghettos, cultural history, language etc., all of which are contained within the notion of nationality in the mind of an older person.

It is in this sense that we say that "atom" and "nationality" are *abstract* notions in the form that they first appear in thought.
But the Notion, as conceived by Hegel, is concrete by comparison with the very abstract forms of Being and the less concrete forms of Essence, which are merged in the Notion. The Notion is a very concrete concept, because all the content of its genesis are sublated within it.

In the logic of understanding, the notion is generally reckoned a mere form of thought, and treated as a general conception. It is to this inferior view of the notion that the assertion refers, so often urged on behalf of the heart and sentiment, that notions as such are something dead, empty, and abstract. The case is really quite the reverse. The notion is, on the contrary, the principle of all life, and thus possesses at the same time a character of thorough concreteness. That it is so follows from the whole logical movement up to this point, and need not be here proved. The contrast between form and content, which is thus used to criticise the notion when it is alleged to be merely formal, has, like all the other contrasts upheld by reflection, been already left behind and overcome dialectically or through itself.

The notion, in short, is what contains all the earlier categories of thought merged in it. It certainly is a form, but an infinite and creative form which includes, but at the same time releases from itself, the fullness of all content. And so too the notion may, if it be wished, be styled abstract, if the name concrete is restricted to the concrete facts of sense or of immediate perception. For the notion is not palpable to the touch, and when we are engaged with it, hearing and seeing must quite fail us. And yet, as it was before remarked, the notion is a true concrete; for the reason that it involves Being and Essence, and the total wealth of these two spheres with them, merged in the unity of thought. [Shorter Logic § 160n]

In The Grundrisse, "The Method of Political Economy", Marx explains two opposite methods in the development of political economic analysis in terms of the movement from abstract to concrete and concrete to abstract, as follows:

When we consider a given country politico-economically, we begin with its population, its distribution among classes, town, country, the coast, the different branches of production, export and import, annual production and consumption, commodity prices, etc. [The Grundrisse]

That is, in "Hegelian" terms, ordinary understanding (and empirical science), uncritically accepting the categories with which it approaches the subject (or at any rate lacking any other system of concepts), begins with a quantitative-qualitative analysis of immediate perception mediated by these concepts. ...

It seems to be correct to begin with the real and the concrete, with the real production, thus to begin, in economics, with e.g. the population, which is the foundation and the subject of the entire social act of production. However, on closer examination this proves false. The population is an abstraction if I leave out, for example, the classes of which it is composed. These classes in turn are an empty phrase if I am not familiar with the elements on which they rest. E.g. wage labour, capital, etc. These latter in turn presuppose exchange, division of labour, process, etc. For example, capital is nothing without wage labour, without value, money, price, etc. Thus, if I were to begin with the population, this would be a chaotic conception of the whole, and I would then, by means of further determination, move analytically towards ever more simple concepts, from the imagined concrete towards ever thinner abstractions until I had arrived at the simplest determinations. [The Grundrisse]

Proceeding with the methods of empiricism, these pioneers of political economy stripped down the concrete concepts with which they began to "abstract universals", 
very thin abstractions which are adequate only to the most general, quantitative
description of the subject matter.

From there the journey would have to be retraced until I had arrived at the population again, but this time
not as the chaotic conception of a whole, but as a rich totality of many determinations and relations. [The
Grundrisse]

These very thin notions provide the starting point for a theoretical image of the subject
matter which reproduces the richness of immediate perception, but with poor theoretical
content.

The former is the path historically followed by economics at the time of its origins. The economists of the
seventeenth century, e.g. always begin with the living whole, with population, nation, state, several states,
etc.; but they always conclude by discovering through analysis a small number of determinant, abstract,
general relations such as division of labour, money, value, etc. [The Grundrisse]

Historically speaking, beginning with these abstract concepts marks the starting point of
the science as such, which leads to more and more concrete concepts.

As soon as these individual moments had been more or less firmly established and abstracted, there began
the economic systems, which ascended from the simple relations, such as labour, division of labour, need,
exchange value, to the level of the state, exchange between nations and the world market. [The
Grundrisse]

And Marx here explains Hegel's concept of abstract and concrete, the movement from
Being to Notion to Idea:

The latter [the development of more concrete notions] is obviously the scientifically correct method. The
concrete is concrete because it is the concentration of many determinations, hence unity of the diverse. It
appears in the process of thinking, therefore, as a process of concentration, as a result, not as a point
of departure, even though it is the point of departure in reality and hence also the point of departure for
observation and conception. Along the first path the full conception was evaporated to yield an abstract
determination; along the second, the abstract determinations lead towards a reproduction of the concrete
by way of thought. [The Grundrisse]

As Hegel says:

The sensuous consciousness is in ordinary estimation the most concrete and thus also the richest; but that
is true only as regards materials, whereas, in reference to the thought it contains, it is really the poorest
and most abstract. [The Shorter Logic, § 85n]

The Notion is a Unity of Opposites

In discussing the significance of Kant's discovery of necessary antinomies in logic, Hegel explains:

... every actual thing involves a coexistence of opposed elements. Consequently to know, or, in other
words, to comprehend an object is equivalent to being conscious of it as a concrete unity of opposed
determinations, [whereas] the old metaphysic, as we have already seen, when it studied the objects of
which it sought a metaphysical knowledge, went to work by applying categories abstractly and to the exclusion of their opposites. [Shorter Logic §48n]

In the whole of the Logic, Hegel demonstrates this principle, time and again, in deriving each new concept as the overcoming, or synthesis, of the contradiction arising in the development of another concept. The whole of Logic is a proof that "There is absolutely nothing whatever in which we cannot and must not point to contradictions or opposite attributes" [Shorter Logic § 89].

The significance of this concept of the Notion as a "unity of opposites" may be illustrated with one or two famous examples:

Marx's concept of the Commodity as a unity of Exchange Value and Use Value

As Marx explains in Chapter One of Capital (to which the reader should refer), a commodity is a useful thing which is produced not for its use value but for its exchange value, i.e. because it is useful precisely to someone else, and that this exchange value can only be realised if it finds its way to someone who requires its use value. (Its use value for the producer its only its exchange value). However, it turns out that the quantitative measure of exchange value has nothing (immediately) to do with its use value - the two have qualitatively different measures, are in fact incommensurable.

In later Chapters, the "tension" between the sides of this contradiction are elaborated - for example capital will move from industry to industry or enterprise to enterprise and bring about by a complex process involving the whole economy a dynamic "struggle" between use and exchange value.

Lev Vygotsky's Concept of Word Meaning

The great Soviet psychologist, Lev Vygotsky, initiated the modern theory of language in the early 1930s:

What is the basic unit of verbal thought ?... word meaning. ... The conception of word meaning as a unit of both generalising thought and social interchange is of incalculable value for the study of language and thought. [Thought and Language, Chapter 1]

Vygotsky Notion's of verbal thought, the "germ" of verbal thought, is a unity of opposites. Vygotsky explains that

- "In their ontogenetic development, thought and speech have different roots.
- In the speech development of the child, we can with certainty establish a preintellectual stage, and in his thought development, a prelinguistic stage.
- Up to a certain point in time, the two follow different lines, independently of each other.
- At a certain point these lines meet, whereupon thought becomes verbal and speech rational." [Thought and Language, Chapter 4]
Modern physics has given us the wave-particle conception of matter and radiation, cosmology which has become identical with the theory of the atomic nucleus in the Big Bang, neurology a left brain/right brain with uncoordinated opposite functions, and so on.

Hegel describes the derivation of a concept as a unity of opposites as a "Syllogism", but a syllogism in a radically different sense than the sense in which the word is used in formal logic:

The relation of the negative to itself is to be regarded as the second premise of the whole syllogism. If the terms analytic and synthetic are employed as opposites, the first premise may be regarded as the analytic moment, for in it the immediate stands in immediate relationship to its other and therefore passes over, or rather has passed over, into it - although this relation, as already remarked, is also synthetic, precisely because that into which it passes over is its other. The second premise here under consideration may be defined as synthetic, since it is the relation of the differentiated term as such to the term from which it is differentiated. Just as the first premise is the moment of universality and communication, so the second is determined by individuality, which in its relation to its other is primarily exclusive, for itself, and different. The negative appears as the mediating element, since it includes within it itself and the immediate whose negation it is. In this turning point of the method, the course of cognition at the same time returns into itself. As self-sublating contradiction this negativity is the restoration of the first immediacy, of simple universality; for the other of the other, the negative of the negative, is immediately the positive, the identical, the universal. If one insists on counting, this second immediate is, in the course of the method as a whole, the third term to the first immediate and the mediated. [The Science of Logic, The Absolute Idea]

The conception of all concepts as a unity of opposites, as essentially, internally contradictory, has both an analytic and a synthetic meaning, both negative and positive. It is negative and analytic when we "discover" the contradictory aspects in a concept as it is given to us, when we bring out the contradictory tendencies within a thing and elaborate their relation. It is synthetic when we bring together apparently distinct or "opposite" notions or things and postulate a new notion.

Both these aspects of the concept of "unity of opposites" are demonstrated by Hegel throughout the Logic, beginning with the analytic proof that "Being is Nothing" and their synthesis in the concept of Becoming as the "realisation that Being is Nothing".

The Notion is equally Analytic and Synthetic

Analysis and synthesis are processes of breaking down of a whole into its constituent parts, and reconstituting a whole from its parts. Both analysis and synthesis take part, alternately, in every stage of the cognition of a thing. Like "abstraction" and "generalisation", both analysis and synthesis arrive at new knowledge of the thing, and both are required for an all-sided knowledge of a thing - breaking it down and identifying its various parts, aspects, and then arriving at a new understanding based on how the parts interact and merge with each other etc., and gaining a new conception of the parts.
The art of working with concepts is the art of merging analysis and synthesis.

The absolute method, on the contrary, does not behave like external reflection but takes the determinate element from its own subject matter, since it is itself that subject matter's immanent principle and soul. This is what Plato demanded of cognition, that it should consider things in and for themselves, that is, should consider them partly in their universality, but also that it should not stray away from them catching at circumstances, examples and comparisons, but should keep before it solely the things themselves and bring before consciousness what is immanent in them.

The method of absolute cognition is to this extent analytic. That it finds the further determination of its initial universal simply and solely in that universal, is the absolute objectivity of the Notion, of which objectivity the method is the certainty. But the method is no less synthetic, since its subject matter, determined immediately as a simple universal, by virtue of the determinateness which it possesses in its very immediacy and universality, exhibits itself as an other. [The Science of Logic, The Absolute Idea]

**The Notion is the truth of Actuality**

Where does the Notion come from? As Hegel explains, the Notion is the truth of Being and Essence, which constitute the genesis of the Notion. The "Notion" in Hegel's Logic refers to a new Notion, in contrast to the relative, passing notions that have originated from past perception and are active in reflection. The Notion is the result of a process of concentration or distillation, a bringing together of the disparate and separation out of the inessential, as described above in The Meaning of Essence.

The Notion is the simple, abstract outcome of this process which first reaches an approximate identification of opposite determinations which forms an adequate ground for the identity of immediate perception (being) and theory: The notion is a kind of "summing up" of Actuality, its truth.

... the Notion is the truth of substance; and since substance has necessity for its specific mode of relationship, freedom reveals itself as the truth of necessity and as the mode of relationship proper to the Notion. [The Science of Logic, The Notion in General]

"Substance" for Hegel, means possibility, or "the totality of accidents". The "truth of substance" means the comprehension of a process by which what exists is understood not only as real possibility, but cause and effect have merged and possibility has merged with necessity, all elements of conditionality, choice or chance have been "absorbed", where essence is equal to existence, the inessential is equally essential in other words the consummation of the stage of Actuality.

... Substance is the absolute, the actuality that is in and for itself in itself as the simple identity of possibility and actuality, absolute essence containing all actuality and possibility within itself; and for itself, being this identity as absolute power or purely self-related negativity. [Science of Logic, Notion in General]

Thus, for Hegel, the Notion of a thing arises not from intuition or in the form of an unproved "axiom" or by introspection or contemplation, but as the outcome of a whole
process and development of practice, in which the existing state of knowledge and actual experience undergo a contradictory interpenetration.

What the nature of the Notion is, can no more be stated offhand than can the Notion of any other object. It might perhaps seem that, in order to state the Notion of an object, the logical element were presupposed and that therefore this could not in turn have something else for its presupposition, nor be deduced; just as in geometry logical propositions as applied to magnitude and employed in that science, are premised in the form of axioms, determinations of cognition that have not been and cannot be deduced. Now although it is true that the Notion is to be regarded, not merely as a subjective presupposition but as the absolute foundation, yet it can be so only in so far as it has made itself the foundation. [The Science of Logic, The Notion in General]

A science therefore does begin not with definitions and unproven "axioms". Such a beginning, if subject to analysis only leads further back to its real beginning, which would lie apparently outside the science. The Notion which forms the foundation of a science, must make its own foundation.

Thus, just as a notion has its genesis, so also the thing conceived in the Notion has its own history, its own genesis, like the embryo which recapitulates the evolution of species in the womb.

The above features characterise the method of Hegel's Logic which lead us to the Doctrine of the Notion, or the Subjective Logic.

The Categories and the Transition between them

In this booklet, I have deliberately focused on the various categories of Hegel's system. However, the important point is to grasp not just the meaning of each category, but the transition between them:

though ordinary thinking everywhere has contradiction for its content, it does not become aware of it, but remain an external reflection which passes from likeness to unlikeness, or from the negative relation to the reflection -into-self, of the distinct sides. It holds these two determinations over against one another and has in mind only them, but not their transition, which is the essential point and which contains the contradiction. [Science of Logic, Law of Contradiction]

However, it is fair to say, that one cannot grasp the transition between two concepts, until one has grasped the concepts each in-itself. I leave this as the task of you the reader, in your further study.

The Notion in Nature and Society

In the world of nature, it is organic life that corresponds to the grade of the notion. Thus e.g. the plant is developed from its germ. The germ virtually involves the whole plant, but does so only ideally or in thought: and it would therefore be a mistake to regard the development of the root, stem, leaves, and other different parts of the plant, as meaning that they were realiter present, but in a very minute form, in the germ. That is the so-called 'box-within-box' hypothesis; a theory which commits the mistake of supposing an actual existence of what is at first found only as a postulate of the completed thought. The truth of the
hypothesis on the other hand lies in its perceiving that in the process of development the notion keeps to itself and only gives rise to alteration of form, without making any addition in point of content. [Shorter Logic, §161n]

and

... the germ of a plant contains its particular, such as root, branches, leaves, etc.; but these details are at first present only potentially, and are not realised till the germ uncloses. This unclosing is, as it were, the judgement of the plant. The illustration may also serve to show how neither the notion nor the judgement are merely found in our head, or merely framed by us. The notion is the very heart of things, and makes them what they are. To form a notion of an object means therefore to become aware of its notion: and when we proceed to a criticism or judgement of the object, we are not performing a subjective act, and merely ascribing this or that predicate to the object. We are, on the contrary, observing the object in the specific character imposed by its notion. [Shorter Logic, §166n]

In the history of the workers movement, we could understand the workers' revolutionary party and its program as the Notion of the working class.

**The Notion of Capitalism**

As outlined above, the concept of "commodity" in Marxist political economy is a Notion in the sense of dialectics: a unity of opposites - use-value and exchange value; this Notion gives us the Notion of capitalism as "generalised commodity production", the social system expressing the basic contradiction within the relations of commodity production.

As put forward in Chapter III above, the "essence of capitalism" is production of surplus value; the concept of value as the estranged or alienated form of "abstract human labour" is the content of this Notion.

The Being of capitalism is the whole development of the productive forces, including especially its living human actors.

We say that generalised commodity production (Notion) is production of surplus value (Essence) at that most developed stage of the forces of production (Being), where the entire globe is drawn into the world market, which penetrates into every human relation, breaking up the family and transforming knowledge, care, love and death into commodities to be bought and sold.

In this work, I am giving emphasis to the main categories of the Logic as stages in the development of a process over time. Having grasped these concepts in this way, it is then necessary to see them simultaneously, as the inner dialectic within any object.

Capitalism goes through its historical development from Being (scattered, isolated exchange of commodities at the fringes of ancient society), essence (contradictory struggle, breaking down the barriers of feudalism, developing the world market, finding
its appropriate political and social forms, etc., etc.) and Notion (generalised commodity production, the hegemony of the market).

But also, the forces of production continue to develop and transform themselves, and reflect itself in transformations in the superstructure; the value form continuously finds new forms as capital struggles to penetrate and atomise social relations; the commodity production continues to extend itself in breadth and depth.

The categories of the Logic can always be understood in this "double way". Essence is the genesis of the Notion, but Essence does not die out, but lives on within the Notion, changing and modifying its nature; Being is the ever-present "driving force".

The Meaning of Hegel's Logic

VII: The Development of the Notion in Hegel's Logic

The Notion is an "adequate concept" (for example, Marx's definition of capitalism as the society of "generalised commodity production"), but it is not yet a whole concrete theory-and-practice of the thing, which is the outcome of a whole process of development of the notion in its interconnection with practice. The development of the Notion is this process, from for example, the discovery of the Periodic Table of Elements and the concept of the molecule to modern chemistry and the chemical industry.

We could think of the Notion as the main principle of understanding a thing, the basic principle of a science, the core of someone's personality, the key role of a social process or movement in history, etc.

The development of the Notion is the process whereby the defining "germ" of a theory (e.g. capitalism = "commodity society") becomes concrete; the initial Notion is tested out and as a result is qualified and further subordinate Notions included in it, and a whole "theory" is developed. The Notion is not overthrown in its development, but concretised.

The onward movement of the notion is no longer either a transition into, or a reflection on something else, but Development. For in the notion, the elements distinguished are without more ado at the same time declared to be identical with one another and with the whole, and the specific character of each is a free being of the whole notion. [Shorter Logic § 161]

If we compare the movement from Being to the Notion (which is called Essence) with the development of the Notions characterising the separate branches of science, the
development of the Notion is the process of the growing together of the sciences in a single body of knowledge, in which each of the Notions of the separate sciences are not overcome by the others, as they are in the history of the separate sciences, but absorb and merge with one another in deeper more comprehensive and concrete Notions. Of this movement of the Notion, towards the Absolute Idea, Hegel observes: "The absolute idea may... be compared to the old man who utters the same creed as the child, but for whom it is pregnant with the significance of a lifetime".

In the development of the Notion, with the unity (or dialectic) of life and cognition, analysis and synthesis, means and end, theory and practice, the Notion is continually enriched through the "in-flow" of Being, more and more closely approximating the concreteness of immediate representation with the concreteness of conceptual representation. Thus the movement of the Notion to the Absolute Idea is a return to Being at a higher level, the movement towards the identity of Being and Notion:

... the science exhibits itself as a circle returning upon itself, the end being wound back into the beginning, the simple ground, by the mediation; this circle is moreover a circle of circles, for each individual member as ensouled by the method is reflected into itself, so that in returning into the beginning it is at the same time the beginning of a new member. Links of this chain are the individual sciences ...

The Idea, namely, in positing itself as absolute unity of the pure Notion and its reality and thus contracting itself into the immediacy of being, is the totality in this form - nature. [The Science of Logic, The Absolute Idea]

Thus the movement of the logic may be likened to the movement of humanity from the animal condition of oneness with Nature through rupture from Nature and the development of civilisation and science, to conscious harmony with Nature based on the transcendence of social contradictions and comprehension of Nature's laws and conscious adaptation of humanity and Nature.

Hegel's Logic reads a bit like The Twelve Days of Christmas in the Doctrine of the Notion; as the Notion becomes more and more concrete, it includes all those moments that have gone before within it, and Hegel spells this out at each stage. Generally speaking, I have not adopted this method here, and the result is that Hegel's concepts are presented somewhat more abstractly, but more concisely.

**The Notion: Subject - Object - Idea**

Subjectivity, in Hegel's system is the first part of The Notion, followed by Objectivity and The Idea. Subjectivity is the domain of "logic", or Reason, which confronts its abstractness, the contradiction with Objectivity. The resolution of the contradiction between Subjectivity and Objectivity is The Idea.
Subjectivity
Individual, Universal and Particular

The philosophical standpoint which stops at subjectivity is Subjectivism. In Subjectivity, the Notion exists "for itself", but is yet to overcome, comprehend and merge with the objective world which confronts it and become "in-and-for-itself". It is like the first year science student who has learnt the law of gravity and really believes that things fall at a speed proportional to elapsed time.

The Subjective Notion of capitalism is more or less *laissez faire* capitalism, the simple undeveloped "ideal" of the "free market".

Objectivity
Mechanism, Chemism and Teleology

Objectivity in Hegel's system is the second part of The Notion, the negative of Subjectivity. The Notion confronts itself in Objectivity, the independent existence outside the subject of the objects, processes and life in the world outside thought and subjectivity. Despite the fact that the Notion is the outcome of Being, in its simplicity it is at odds with the world, it is only a partial theoretical picture of the world. The Object is the form in which the Notion first finds its negative in theoretical form.

To stop at objectivity is the standpoint of "Objectivism", superstition, withholding critical appraisal and partisan intervention, abstaining from life.

The Objective Notion of capitalism is like the period off state intervention aimed at moderating the ills of the market.

The Idea
Life, Cognition and the Absolute Idea

The "Idea" is the unity of Subjectivity and Objectivity, the merging of Being and the Notion. In the development of a science for instance, there is always a vast gap between the initial theory which forms the basis of an adequate science and whole "Being" of the thing reflected in the multifarious branches of knowledge, and practical experience in the science. Once formulated, the Notion of the thing must undergo a process of development in which theory and practice inform one another in practice and the Notion becomes more "concrete" as the contradictions experienced in practice are successively overcome. This development is also characterised by the lack of correspondence between the separate branches of science which are united in practice. We could describe the "Idea" as "conscious practice".

It is like the development of industry from its minimal impact on the natural environment it appears to "master", eventually finding itself confronted by a Nature
which "wreaks its revenge", and which leads to the Idea that we must act as agents of nature rather than as opponents of nature.

The "idea of capitalism" is the final stage of capitalism when the state emerges solely as the naked servant of class rule.

Subject: Abstract Notion - Judgment - Syllogism

The Subjective Notion is the outcome of the whole genesis we have described in the foregoing sections.

The abstract Notion is expressed in the form of Universal - Particular and Individual:

"Universality, Particularity and Individuality are, taken in the abstract, the same as identity, difference and ground. But the universal is the self-identical, with the express qualification, that it simultaneously contains the particular and the individual" [Shorter Logic § 164] and likewise with particular and individual ... "Individual and actual are the same thing: only the former has issued from the notion". [Shorter Logic § 164]

The Judgment makes explicit the contradiction in the identification of Universal and Particular: "The individual is the Universal". In the Syllogism, the logic of the Notion is worked out, so to speak, and:

"it is subjectivity itself, which, as dialectical, breaks through its own barriers and opens out into objectivity by means of the syllogism" [Shorter Logic § 193]

Object: Mechanism - Chemism - Teleology

Hegel outlines The Object as follows:

Objectivity contains the three forms of Mechanism, Chemism, and Teleology. The object of mechanical type is the immediate and undifferentiated object. No doubt it contains difference, but the different pieces stand, as it were, without affinity to each other, and their connection is only extraneous. In chemism, on the contrary, the object exhibits an essential tendency to differentiation, in such a way that the objects are what they are only by their relation to each other: this tendency to difference constitutes their quality. The third type of objectivity, the teleological relation, is the unity of mechanism and chemism. Design, like the mechanical object, is a self-contained totality, enriched however by the principle of differentiation which came to the fore in chemism, and thus referring itself to the object that stands over against it. Finally, it is the realisation of design which forms the transition to the Idea. [Shorter Logic § 194n]

Mechanism
Mechanical Object, Mechanical process - Absolute Mechanism

The first concept of Objectivity is Mechanism. Mechanism is the understanding of the object in terms of the system of things, relations, forces, etc by which it acts. In the history of science it corresponds to the philosophical position of mechanical materialism. This phase is later supplanted by the conception of Nature as composed not of things and forces but of processes.
Pressure and impact are examples of mechanical relations. Our knowledge is said to be mechanical or by rote, when the words have no meaning for us, but continue external to sense, conception, thought; and when, being similarly external to each other, they form a meaningless sequence. Conduct, piety, etc., are in the same way mechanical, when a man's behaviour is settled for him by ceremonial laws, by a spiritual adviser, etc.; in short, when his own mind and will are not in his actions, which in this way are extraneous to himself. [Shorter Logic, § 195]

Seeing the "mechanism" by which something happens is a necessary step towards understanding it, but leaves out of account the life processes of thing and its parts; in a sense, it answers the question "How?", but not the question "Why?".

But mechanism itself leads to the conception of processes, "mechanical processes", as a kind of summing up of mechanism, and provides the foundation for transition to the view of the world essentially composed of processes rather than things. This exclusive application of the standards of mechanics to processes of a chemical and organic nature - in which processes the laws of mechanics are, indeed, also valid, but are pushed into the backgrounds by other, higher laws - constitutes the first specific but at the time inevitable limitation of classical French materialism. [Engels, Ludwig Feuerbach, etc., II]

This development from the concept of a world of things into the conception of a world composed of processes, from the conception of a "system" in terms of its various component parts into the deeper view of the system as a series of processes in which the various component parts pass out of existence and are replaced by different things - this is a continual process of successive deepening of theoretical knowledge:

The great basic thought that the world is not to be comprehended as a complex of ready-made things, but as a complex of processes, in which the things apparently stable no less than their mind images in our heads, the concepts, go through an uninterrupted change of coming into being and passing away, in which, in spite of all seeming accidentality and of all temporary retrogression, a progressive development asserts itself in the end - this great fundamental thought has, especially since the time of Hegel, so thoroughly permeated ordinary consciousness that in this generality it is now scarcely ever contradicted. [Engels, Ludwig Feuerbach, etc., IV]

**Chemism**

**Chemical Object, Chemical process - Absolute Chemism**

Chemism refers to the development of mechanism in which the objects not only interact and influence one another, but pass into one another, neutralise one another and in general pass into things other than themselves. Hegel admits, in the section on Chemism in the Shorter Logic, that the elevation of Chemism to a qualitatively different stage over Mechanism is unusual, but, he says, justified. In general, the movement from understanding Nature as composed of processes rather than things, represents a qualitative step forward in the history of science. It is also necessary to maintain Hegel's triadic structure.

Chemism is a category of objectivity which, as a rule, is not particularly emphasised, and is generally put under the head of mechanism. The common name of mechanical relationship is applied to both, in
contradistinction to the teleological. There is a reason for this in the common feature which belongs to
mechanism and chemism. In them the notion exists, but only implicit and latent, and they are thus both
marked off from teleology where the notion has real independent existence. This is true: and yet chemism
and mechanism are very decidedly distinct. The object, in the form of mechanism, is primarily only an
indifferent reference to self, while the chemical object is seen to be completely in reference to something
else. No doubt even in mechanism, as it develops itself, there spring up references to something else: but
the nexus of mechanical objects with one another is at first only an external nexus, so that the objects in
connection with one another still retain the semblance of independence.

In nature, for example, the several celestial bodies, which form our solar system, compose a kinetic
system, and thereby show that they are related to one another. Motion, however, as the unity of time and
space, is a connection which is purely abstract and external. And it seems therefore as if these celestial
bodies, which are thus externally connected with each other, would continue to be what they are, even
apart from this reciprocal relation. The case is quite different with chemism. Objects chemically biased
are what they are expressly by that bias alone. Hence they are the absolute impulse towards integration by
and in one another. [Shorter Logic § 200]

**Teleology (Means & End)**

Teleology means *purposive activity*, activity directed towards an "End". Inorganic
matter, it is said, is capable of mechanical and chemical, but not purposive activity. At
this point in *The Logic*, we can see how Hegel has constructed a kind of schema by
which inorganic Nature gives rise to purposive activity, Life and Cognition.

While this is a schema, it is remarkable that in constructing a system which represents
the idealistic development of "The Absolute Idea", which is therefore to Hegel, also
how Nature itself become "conscious of itself", Hegel has produced such an excellent
description of the process of cognition. Indeed, the unconscious but purposive striving
of people is the basis of real life and cognition.

The "moments" of Teleology are "Subjective End" (purpose or intention), Means
(purposive activity as such, which is also objective) and "Realised End" - the
contradiction between subjectivity and objectivity.

Means and Ends

The End is firstly the Subjective End which consciousness conceives as the desired
change in the objective world of things and processes confronting it, and subsequently
becomes the Realised End, the, usually unexpected, result of the Means.

The dialectic of Means and End is a subject of deep historical and political significance.
Some say "The End justifies the Means", which is invariably the signal for the most
opportunist and cynical political practices. It is also said that "Everything is in the
process", but if the End is reduced to a nothing, then the process cannot negate what is.
If the End is properly understood and is true, then there can be no contradiction between
Means and End. This cannot arise immediately, because such an identity of Means and
Ends presupposes the long drawn out process of cognition and the development of a
theoretical and practical idea which enables the subject to concretely see how the End is existent within the objective word of things and processes confronting the subject.

The following extended quote from *Lev Vygotsky Revolutionary Scientist, by Fred Newman and Lois Holzman*, explains a useful tool and result metaphor for Hegel's dialectic of Means and End:

Not everything that is needed or wanted by humankind can be made by simply using the tools that have already been mass manufactured in modern society. Often we must create a tool which is specifically designed to create what we ultimately wish to produce. The tools of the hardware store and the tools of the tool-and-die-maker are qualitatively different in a tool for result-tool-and-result sort of way. Hardware store tools, such as hammers, come to be identified and recognised as usable for a certain end, i.e. they become reified and identified with a certain function and, as such, insofar as the manufactured hammer as a social extension (a tool) of human activity comes to define its human user (as all tool use does), it does so in a predetermining sense. Marxists of all persuasions (and many others) accept that tool use impacts on categories of cognition. Tools for results are analogous to (as well as producers of) cognitive equipment (e.g. concepts, ideas, beliefs, attitudes, emotions, intentions, thought and language) that are complete (fully manufactured) and usable for a particular purpose.

The toolmaker's tool is different in a most important way. While purposeful, it is not categorically distinguishable from the result achieved by its use. Explicitly created for the purpose of helping to make a specific product, it has no reified prefabricated social identity independent of that activity. Indeed, empirically speaking, such tools are typically no more recognisable as tools than the product (often a quasi-tool or small part of a larger product) itself is recognisable as product. They are inseparable. It is the productive activity which defines both - the tool and the product (the result).

Unlike the hammer (the hardware store, manufactured, tool for result tool), this kind of tool - the toolmaker's tool-and-result - has no completed or generalised identity. Indeed, it typically has no name; it appears in no dictionary or grammar book. Such tools define their human users quite differently from the way hardware store tools, whether of the physical, symbolic or psychological variety, do. The inner cognitive, attitudinal, creative, linguistic tools developed from the toolmaker type of social tools are incomplete, unapplied, unnamed and, perhaps, unnameable. Expressed more positively, they are inseparable from results in that their essential character (their defining feature) is the activity of their development rather than their function. For their function is inseparable from the activity of their development. They are defined in and by the process of their production. This is not to say that such tools and results are without functions. It is, rather, to say that the attempt to define tools and-results by their function (as is the case with tools for results) fundamentally distorts what they are (and, of course, in the process, what definition is). [Chapter 3, Practice - Vygotsky's tool-and-result methodology and psychology]

This quote not only explains the dialectic of means and end, but incidentally refers to the fact that this dialectic is reified and made into objects in the form of tools (or means in general, including concepts) which are passed on to future generations. We live in a world made up of the outcome of the means-and-end dialectic of previous generations. This dialectic was at work at the very earliest stages of the development of pre-humans, and formed the basis for the formation of thought and language, or conscious practice.
The Idea (Life and Cognition)

The outcome of the negation of the concept by objectivity comes in the form of the realised end, which is life and cognition. The unity of Life and Cognition is the Idea.

Life is the actuality of understanding, of the subject-object relation, of means and ends, at any given stage of social or personal development or in the development of any process or thing. We act at any given moment with whatever conceptual material is at hand and the outcome is both subjective and objective, both rational and real. It is said that theory is understanding what we are doing. Cognition (acquiring knowledge) is the "negative" of life, which is its precondition. Insofar as development take place here at all, it by is the merging of life and cognition, of cognising what we are doing and acting consciously.

The idea as a process runs through three stages in its development. The first form of the idea is Life: that is, the idea in the form of immediacy. The second form is that of mediation or differentiation; and this is the idea in the form of Knowledge, which appears under the double aspect of the Theoretical and Practical idea. The process of knowledge eventuates in the restoration of the unity enriched by difference. This gives the third form of the idea, the Absolute Idea: which last stage of the logical idea evinces itself to be at the same time the true first, and to have a being due to itself alone. [Shorter Logic. § 215n]

Life (The Living Individual & the Life Process, or the Personal & the Political)

Life is included within the domain of Logic by Hegel, as he explains:

The Idea of Life is concerned with a subject matter so concrete, and if you will, so real, that with it we may seem to have overstepped the domain of logic as it is commonly conceived. Certainly, if logic were to contain nothing but empty, dead forms of thought, there could be no mention in it at all of such a content as the Idea of Life. But if absolute truth is the subject matter of logic, and truth as such is essentially in cognition, then cognition at least would have to be discussed. So called pure logic is usually followed up with an applied logic - a logic dealing with concrete cognition, not to mention the mass of psychology and anthropology that it is often deemed necessary to interpolate into logic. But the anthropological and psychological side of cognition is concerned with its manifested aspect, in which the Notion on its own account has not yet come to have an objectivity the same as itself, that is, to have itself for object. [Science of Logic. Life]

Life is dialectic of the Living Individual and the Life Process, the synthesis of which is Genus [or Kind] - society. We could call this the dialectic of the personal and the political. It is also the syllogism of the Individual and the Universal at the highest possible level.

Consciousness has no other existence other than in the heads of individuals; practice is always in the first place individual. But all knowledge and all practice is essentially social. The individual's existence is essentially social, her/his action is only actual to the extent that it is social. The relation of individual and social is quite concretely established by Vygotsky in his study of the development of thinking and speech in human individuals:
The earliest speech of the child is ... essentially social. ... At a certain age the social speech of the child is quite sharply divided into egocentric and communicative speech ... Egocentric speech emerges when the child transfers social, collaborative forms of behaviour to the sphere of inner-personal psychic functions ... Egocentric speech, splintered off from general social speech, in time leads to inner speech, which serves both autistic and logical thinking. ... the true direction of the development of thinking is not from the individual to the socialised, but from the social to the individual. [Thought and Language, Chapter 2]

Even in the development of the individual sciences, we see this growing together of the "two ends", the identity of Universe and the atomic nucleus in the "Big Bang" Theory, fractal mathematics, genetics.

Cognition (The True and The Good)

Cognition means acquiring knowledge of the objective world. But here we are dealing with the struggle to change the world; for dialectics cognition is the negative of Life, knowledge has no other meaning. The basis of the Idea is the Realised End, the objective (material) outcome of past cognition. The positing of the Realised End is Life, Cognition is its negative. The two premises of cognition are, in a sense, what is gained and what is not gained, in the realised end, what is and is not proved and what is and is not achieved, the True and the Good.

The two propositions of the "syllogism" of the True Hegel calls Analytic and Synthetic cognition.

The True - Analytic & Synthetic Cognition

Analytic cognition (analysis) Hegel explains as follows:

If we look now more closely at analytic cognition, we see that it starts from a presupposed, and therefore individual, concrete subject matter; this may be an object already complete in itself for ordinary thought, or it may be a problem, that is to say, given only in its circumstances and conditions, but not yet disengaged from them and presented on its own account in simple self-subsistence. Now the analysis of this subject matter cannot consist in its being merely resolved into the particular picture thoughts which it may contain; such a resolution and the apprehension of such picture thoughts is a business that would not belong to cognition, but would merely be a matter of a closer acquaintance, a determination within the sphere of picture-thinking. Since analysis is based on the Notion, its products are essentially Notion-determinations, and that as determinations immediately contained in the subject matter. We have seen from the nature of the Idea of cognition, that the activity of the subjective Notion must be regarded from one side merely as the explication of what is already in the object, because the object itself is nothing but the totality of the Notion. It is just as one-sided to represent analysis as though there were nothing in the subject matter that was not imported into it, as it is one-sided to suppose that the resulting determinations are merely extracted from it. The former view, as everyone knows, is enunciated by subjective idealism, which takes the activity of cognition in analysis to be merely a one-sided positing, beyond which the thing-in-itself remains concealed; the other view belongs to so-called realism which apprehends the subjective Notion as an empty Identity that receives the thought determinations into itself from outside. Analytic cognition, the transformation of the given material into logical determinations, has shown itself to be two things in one: a positing that no less immediately determines itself as a presupposing. Consequently, by virtue of the latter, the logical element may appear as something already complete in the object, just as by virtue of the former it may appear as the product of a merely subjective
activity. But the two moments are not to be separated; the logical element in its abstract form into which analysis raises it, is of course only to be found in cognition, while conversely it is something not merely posited, but possessing being in itself. [Science of Logic, Analytic Cognition]

The "second term of the syllogism", synthetic cognition, Hegel explains as follows:

Analytic cognition is the first premise of the whole syllogism - the immediate relation of the Notion to the object; identity, therefore, is the determination which it recognises as its own, and analytic cognition is merely the apprehension of what is. Synthetic cognition aims at the comprehension of what is, that is, at grasping the multiplicity of determinations in their unity. It is therefore the second premise of the syllogism in which the diverse as such is related. Hence its aim is in general necessity. The different terms which are connected, are on the one hand connected in a relation; in this relation they are related and at the same time mutually indifferent and self-subsistent. [Science of Logic, Synthetic Cognition]

The merging of analytic and synthetic cognition negates the object and its negative is the urge to change, which is the Idea of the Good.

**The Good**

The Good is the Unity of Truth and Life and is both social and individual; the dialectic of Life and Cognition has led to an urge to realise itself. I cannot read this section other than in terms of revolutionary leadership:

The Notion, which is it own subject matter, being determined in and for itself, the subject is determined for itself as an individual. As subjective it again presupposes an implicit otherness; it is the urge to realise itself, the end that wills by means of itself to give itself objectivity and to realise itself in the objective world. [The Science of Logic, The Idea of the Good]

As the Idea contains within itself the moment of complete determinateness, the other Notion with which the Notion enters into relation in the Idea, possesses in its subjectivity also the moment of an object; consequently the Idea enter here into the shape of self-consciousness and in this one aspect coincides with the exposition of the same. But what is still lacking in the practical Idea is the moment of consciousness proper itself; namely, that the moment of actuality in the Notion should have attained on its own account the determination of external being. Another way of regarding this defect is that the practical Idea still lacks the moment of the theoretical Idea. That is to say, in the latter there stands on the side of the subjective Notion - the Notion that is in process of being intuited within itself by the Notion only the determination of universality; cognition knows itself only as apprehension, as the identity on its own account indeterminate of the Notion with itself; the filling, that is, the objectivity that is determined in and for itself, is for it a datum, and what truly is is the actuality there before it independently of subjective positing. For the practical Idea, on the contrary, this actuality, which at the same time confronts it as an insuperable limitation, ranks as something intrinsically worthless that must first receive its true determination and sole worth through the ends of the good. Hence it is only the will itself that stands in the way of attainment of its goal, for it separates itself from cognition, and external reality for the will does not receive the form of a true being; the Idea of the good can therefore find its integration only in the Idea of the true. But it makes this transition through itself. In the syllogism of action, one premise is the immediate relation of the good end to actuality which it seizes on, and in the second premise directs it as an external means against the external actuality. [The Science of Logic, The Idea of the Good]
The individuality of the subject with which the subject was burdened by its presupposition, has vanished along with the presupposition; hence the subject now exists as free, universal self-identity, for which the objectivity of the Notion is a given objectivity immediately to hand, no less truly than the subject knows itself as the Notion that is determined in and for itself. Accordingly in this result cognition is restored and united with the practical Idea; the actuality found as given is at the same time determined as the realised absolute end; but whereas in questing cognition this subjectivity appeared merely as an objective world without the subjectivity of the Notion, here it appears as an objective world whose inner ground and actual subsistence is the Notion. This is the absolute Idea. [The Science of Logic, closing lines of The Idea of the Good]

The dialectic of the True and the Good passes over to the dialectic of the Practical Idea and the Theoretical Idea.

**Absolute Idea - Unity of Practical and Theoretical Idea**

**Theoretical Idea**

According to Hegel, The Theoretical Idea stands opposed to actuality. The concretisation of the theoretical idea to the Practical Idea means the raising of the theoretical negation of the object from the essential to the actual, so that the abstract notion has itself become actual - "confronts the actual as an actual".

**Practical Idea**

The Practical Idea is the penultimate stage of development of the Idea. The unity of the Theoretical Idea and the Practical Idea is the Absolute Idea. Thus for Hegel, in his characteristic "upside down" way, practice is the criterion of truth. In the Practical Idea, Cognition (knowledge) and Volition (will or intention) are synthesised; the subjective Notion is merged with Objectivity, Means is identical with Ends, and the conception of the object is concretised to the point of a practical plan to transform it in the objective world.

The "absolute Idea" is the "apex" of Hegel's system. It includes all the stages of the Logic leading up to it; it is the process of development with all its stages and transitions. Like "Absolute truth" it is an unattainable ideal, representing the whole of Nature which has developed to the point where it is conscious of itself, or the concept of Nature developed to such a degree of concreteness that it has "returned to itself" - an absolutely comprehensive, practical and concrete concept of the world. Hegel defines the Absolute Idea as the "unity of the Theoretical Idea and the Practical Idea". The Theoretical Idea is the completed Notion or concrete concept of the world or object; the Practical Idea is the activity expressing this concept (practice); the unity of the two means fully "conscious practice", people acting in true accord with their own nature.

The absolute Idea has turned out to be the identity of the theoretical and the practical Idea. Each of these by itself is still one-sided, possessing the Idea only as a sought for beyond and an unattained goal; each, therefore, is a synthesis of endeavour, and has, but equally has not, the Idea in it; each passes from one thought to the other without bringing the two together, and so remains fixed in their contradiction. The
absolute Idea, as the rational Notion that in its reality meets only with itself, is by virtue of this immediacy of its objective identity, on the one hand the return to life; but it has no less sublated this form of its immediacy, and contains within itself the highest degree of opposition. The Notion is not merely soul but free subjective Notion that is for itself and therefore possesses personality - the practical, objective Notion determined in and for itself which, as person, is impenetrable atomic individuality, but explicitly universality and cognition, and in its other has its own objectivity for its object. All else is error, confusion, opinion, endeavour, caprice and transitoriness; the absolute Idea alone is being, imperishable life, self-knowing truth, and is all truth. [Science of Logic, opening paragraph of The Absolute Idea]

... the systematic exposition [of logic] is itself a realisation of the Idea but confined within the same sphere. Because the pure Idea of cognition is so far confined within subjectivity, it is the urge to sublate this, and pure truth as the last result becomes also the beginning of another sphere and science. It only remains here to indicate this transition. The Idea, namely, in positing itself as absolute unity of the pure Notion and its reality and thus contracting itself into the immediacy of being, is the totality in this form - nature. [The Science of Logic, closing lines of The Absolute Idea]

The Meaning of Hegel's Logic

VIII: Why do we say that Hegel is an “idealist”?

Hegel's writing is undoubtedly difficult to get into. It is not just a question of his style and vocabulary. As Hegel says in the introduction to The Shorter Logic:

When people are asked to apprehend some notion, they often complain that they do not know what they have to think. But the fact is that in a notion there is nothing further to be thought than the notion itself. What the phrase reveals is a hankering after an image with which we are already familiar. The mind, denied the use of its familiar ideas, feels the ground where it once stood firm and at home taken away from beneath it, and, when transported into the region of pure thought, cannot tell where in the world it is. [The Shorter Logic §3]

The subject Hegel is expounding in The Logic is one which even educated people are not accustomed to thinking about. Most subjects we can "visualise" or in some way relate to sensuous experience, but logic is one step further removed from sensuous experience than theoretical writing about history, society, nature or other definite science.

On the subject matter of The Logic, Lenin remarks in his Philosophical Notebooks:

It is noteworthy that the whole chapter on the "Absolute Idea" [the final and most abstract chapter in The Science of Logic] scarcely says a word about God (hardly ever has a "divine" "notion" slipped out accidentally) and apart from that - this NB - it contains almost nothing that is specifically idealism, but has for its main subject the dialectical method. The sum-total, the last word and essence of Hegel's logic
is the dialectical method - this is extremely noteworthy. And one thing more: in this most idealistic of Hegel's works there is the least idealism and the most materialism. "Contradictory", but a fact! [Philosophical Notebooks, Volume 38 of Lenin's Collected Works, p234]

When Hegel turns his attention to the description of actual history and nature, his idealism proves to be a real handicap, but in the Logic, despite, or rather because of the ideal nature of the subject matter, idealism has virtually no impact on the enormous value of his insights. Marx's writings on history and economics frequently reflect insights which he owed to Hegel, but there is no question but that Marx's writings in these fields stand head and shoulders above Hegel. On the other hand, neither Marx, nor any of his continuators ever reworked Hegel's Logic basically because there is little more to add!

What is The Logic About?

In psychology, science sets its task to describe how people think. For psychology, the primary question is how human beings actually think and its object is the individual consciousness. Logic also is a "science of thinking", but the issue is to describe how thinking may be used to practical effect, rather than simply describing how people think. For logic, the primary question is: what forms of thought reflect or correspond to the material world? This is hardly a question which psychology can ignore, but it is not its primary subject matter. Contrariwise, how people actually think can hardly be ignored by logic, but it is not the primary question, since people may think in such and such a manner, but it is only to the extent that that manner of thinking has "truth" that it is of interest to logic.

Further, since logic is only interested in thinking in so far as it is true, in so far as it corresponds to the material world, logic reveals properties of the material world rather than properties of thought!

Any science requires some body of objective material against which to measure its findings. [Even mathematics, but that is a whole other topic!] Prior to Hegel, logic considered that the truth or error of any particular proposition (such as "all swans are white" and "that is a swan") was outside the scope of logic, since each such statement had a referent which was the proper subject of natural science or feelings (sensuousness, values, desire, morality, etc) but the proper subject of logic was whether or not such and such a proposition "followed from" other propositions.

For example, according to John Stuart Mill:

The province of logic must be restricted to that portion of our knowledge which consists of inferences from truths previously known; whether those antecedent data be general propositions or particular observations and perceptions. Logic is not the science of Belief, but the science of Proof, or Evidence. ... Logic neither observes, nor invents, nor discovers; but judges. [System of Logic, John Stuart Mill]
Now logic in this narrow sense is undoubtedly a perfectly legitimate branch of science, but the exclusive focus on logic in this narrow sense is inherently idealist in two ways:

1. The maxim: "Do as I do, not as I say" embodies the truth that what we people do is far more profoundly an expression of truth than what we say or what we intend to do. The exclusive focus on propositions leaves entirely out of account the vast field of generalised concepts which talk about the "logic of events". This is what we call the "objectivity" of Hegel's method.

2. By excluding from the field of vision the truth or otherwise (content) of a simple proposition, logic took for granted the logical categories with which the material of the senses was grasped mentally.

The "Logic of Events"

Consider a description like this: "A core group began to crystallise around this issue and focused on the irritation which had begun to infect members and the heated debate which followed soon boiled over". The comment contains seven natural metaphors referring to biology, crystallography, optics, epidemiology and thermodynamics. We all use these concepts which reflect familiarity with a kind of "logic" which is common to many different kinds of phenomena, and these concepts are, more or less, the subject of Hegel's Science of Logic.

Hegel sets to the task of studying these concepts which reflect the most general laws of motions of all processes of nature and "spirit" in the most profoundly scientific manner, which comes close to being a model of scientific thought.

"Levels" of Movement of Matter

The world is given to us in various "levels of the movement of matter": atomic physics Chemistry solid state physics etc cosmology, ... or arithmetic algebra calculus, etc. Each constitutes a field of study, a "definition of the absolute" with its own "axioms", admissible to formal logical analysis up to a point. For example, mechanics, which can plot the movement of two bodies under the influence of each other's gravity, but even in the case of three bodies does not allow analytical solution, let alone in the case of a large system. Formal logic cannot in principle comprehend the transition from one to the other.

Dialectical logic provides the only system of concepts adequate to this task of comprehending the transition, the "leap".

The Categories of Logic

We can fruitfully interpret Hegel's Logic in many ways, but when we do this, we are really making metaphors of the kind used in the above description, but in the reverse direction much as when we apply mathematical methods to the solution of natural
scientific problems. The actual subject of Hegel's writing is everywhere concepts, thought-objects. Hegel was almost the first to rigorously study thought-objects as such. He is able to do this because he does not regard thought-objects as subjective phenomena of the mind at all. The mental phenomena of the human brain are but a small part of the scope of his study of concepts, which are manifested in social practice. I specifically mention practice, because it is practice, social-historical practice, which is the source and pre-condition of concepts. Concepts cannot arise out of immediate, individual perception, but are acquired by individuals through social practice. Mentally speaking, we are born social animals. If we live at all, it is only through social interaction. As we grow up from infancy we internalise the practice of society and through social practice, the history of the society of which we are part and the properties of nature which sustain that society. Language and thought are forms in which social practice is internalised.

Thus these concepts are not things which come out of our inner self and surface in speech and behaviour, but on the contrary, come from without and are internalised in the form of the psyche of, eventually, a mature individual adult.

So there is a real material basis for Hegel's approach to concepts as objective, as existing outside thought independently and prior to thought, that is, outside of and prior to the consciousness of any given individual human being. Concepts have no other existence than in human brains, but the human brain is like a particularly marvelous mirror. It can only reflect what already exists outside of it, or at least the conditions for it are in the process of formation.

Every particle in the universe interacts with every other. The property of reflection is a universal property of matter. Humans are material things, and as it happens have a more profound and thorough-going interaction with nature than any other material thing. So it is hardly surprising that a study of concepts gives us knowledge of objective nature. In fact, we have no other way of learning about nature than through "categories" in the sense in which Hegel deals with categories.

**Materialism and Idealism**

Philosophical idealism and philosophical materialism are opposite camps in relation to the fundamental question in philosophy the relation of being and thinking. Does thinking reflect a material world which exists independently and outside consciousness, or contrariwise, is the objective world a product of thought or altogether a fiction?

Marxists, in common with other materialists, answer this question unambiguously in the affirmative, but that is by no means the end of the problem of knowledge, the problem of the correspondence between thought and the material world. Can thought adequately apprehend the material world - the material world may exist, but is it knowable? Further, what are the respective roles of reason and experience in knowing? Do intuition and faith have a necessary role in knowing?
Materialism and idealism have quite definite meanings in relation to epistemology (the study of the nature and validity of knowledge). Materialism is the correct standpoint and most people will have no hesitation in affirming the materialist position. However, maintaining a consistent materialist position proves to be no easy matter. Whenever we turn to reflect on things we will find it almost impossible to avoid momentarily reasoning along a line which, if looked at in isolation or if extended beyond a certain point, will show itself to be consistent with idealism, not materialism.

Most of us, when surprised by a turn of events will choose to revisit our ideas, rather than deny reality and do not have any doubt about the priority of the objective world. Even the philosophical pedant who denies the objectivity of experience looks before crossing the road.

Idealism shows itself usually in such presumptions as assuming that people do as they say, for example, or in extending a principle beyond the domain in which it is known to be true or failing to subject to criticism a belief that has in fact long out-lived its validity, believing that a person's social position is a matter of their personal choice, that social movement express "new ideas" rather than social interests, etc..

In fact, 99 per cent of the time we operate within a particular system of concepts and the materialist or idealist content of our thinking and practice is determined by the content of this system of concepts. Most of the time we do not question the concepts with which we operate, but it is a merit of Hegel that he directed us to criticise the content of our concepts, rather than limiting ourselves simply to what follows from what.

In other words, our capacity to act consistently as materialists is to a great extent limited by the philosophical content of the concepts we use in our practice. For example, if we only know the concept of "capitalism" as meaning "accumulating wealth", or "job" as some thing which is offered as some kind of gift by employers, or believe that "money makes money", then we cannot get close to a materialist understanding of day-to-day events and changes in capitalist life. To revolutionise your understanding of "capitalism" you are either the one person in a century who creates a new concept of capitalism, or you acquire a new concept of capitalism through Marxist education.

Furthermore, materialism is limited by the level of development of scientific knowledge. If we unable to subject a given proposition to criticism, simply because we have no knowledge of the relevant subject matter or there exists no established body of scientific knowledge about the subject, we will have no choice but to reason idealistically, on the basis of guesswork! [Until we have the opportunity to scientifically investigate the matter]. If we deny ourselves the luxury of reasoning from unproven facts, presumptions and principles and guesses, we will be unable to reason at all.

Thus it is that until the middle of last century, by which time the mass of scientific knowledge had built up to a certain level, idealism was the dominant "camp" in
philosophy. The thousands of years of human culture before the middle of last century is proof that idealism is perfectly capable of producing valid knowledge. Or more accurately, the rigorous idealist line is even more difficult to adhere to than is the consistent materialist line. Despite the idealists' epistemological belief, objective reality enters into his/her thinking! And Hegel is the supreme example of this phenomenon.

Attempting to adhere to consistent materialism means to continuously direct our attention to the source of knowledge in the material world, to be continuously aware of the genesis of our ideas from material life and to continuously subject the concepts with which we grasp the world to criticism. For this latter task, Hegel has given us the most powerful instrument.

**Subjective Idealism and Objective Idealism**

*Subjective idealism* is the variety of idealism which places individual consciousness as primary to the objective world. In its purest form, subjective idealism regards nature, society and history as nothing more real than one's fantasies and dreams. For instance, quantum physics gave rise to an upsurge of "physical idealism" at the turn of the century, a form of subjective idealism which asserted that the behaviour of sub-atomic wave-particles is dependent upon the consciousness of a human observer. It is also found in that line of thinking which says, too insistently, that "everyone has their own reality", and so on.

*Objective idealism* sees the objective world as a product or expression of some entity of an ideal nature, but not the individual's own subjective consciousness rather an entity specifically greater than the human individual, be it named God, Gaia, The Supreme Being, Progress, Nature or some other product of human imagination.

Hegel is perfectly correct in ascribing an objective existence to Logic, to insisting that thought has an objective content. But logic is but one abstract aspect of the objective world (even Hegel's wonderful version of logic); Hegel deifies logic, he makes it the governor and driving force of everything. Just as the capitalist who believes that "money makes money", the engineer who sees the world as a giant machine, the priest whose God is a Wise Old Man, the professional logician Hegel has elevated the object of his own interest into the Lord presiding over all.

"*Spirit*"

The material world is indeed "law governed", or "systematic". If we conceive any finite state of knowledge of the laws and properties of the objective world as something existing outside of human consciousness and give to it an independent, i.e. supernatural, "governing" existence, then we have an apparently reasonable "objective idealism". And such a standpoint is closer to materialism (if we could say such a thing) than for example, the point of view of Kant, in which human knowledge is knowledge only of "phenomena" (i.e. the world as it is manifested to us in experience) while the
world "in-itself" is unknowable. For example, to this line of thinking, even if we believe we have a theory to explain why the Sun rises every morning, in fact we have only a theory which reliably predicts that we will see and feel what we call Sunlight, but no knowledge of thing we choose to call "Sun". As materialists we must assert that these laws and forms which are known to us do indeed exist in the material world, and come to consciousness only because they exist objectively, although we must remind ourselves that these laws and forms are only a part or aspect of the material world. Never but never will human beings attain exhaustive (infinite) knowledge of the world. But we rightly believe that we have knowledge of the objective world which is adequate, more or less, to practice.

Hegel wrote in the first decades of the nineteenth century a particularly marvelous summation of human knowledge as it existed at the time. There can be no argument but that human knowledge has rolled forward with immense speed and breadth ever since. Our collective knowledge of these most general laws let alone their "detail" is obviously far more profound than was available to Hegel.

"Just as the dialectical conception of nature makes all natural philosophy both unnecessary and impossible, it is no longer a question anywhere of inventing interconnections from out of our brains, but of discovering them in the facts. For philosophy, which has been expelled from nature and history, there remains only the realm of pure thought, so far as it is left: the theory of the laws of the thought process itself, logic and dialectics." [Engels, Ludwig Feuerbach etc, Part IV]

Just so long as we recognise that human knowledge is relative, so long as we do not elevate any particular and partial truth to an absolute, then we have no need of a God in any form.

Materialist Dialectics

In 1873, Marx summed up his difference with Hegel as follows:

My dialectic method is not only different from the Hegelian, but is its direct opposite. To Hegel, the life-process of the human brain, i.e., the process of thinking, which, under the name of "the Idea", he even transforms into an independent subject, is the demiurgos of the real world, and the real world is only the external, phenomenal form of "the Idea". With me, on the contrary, the ideal is nothing else than the material world reflected by the human mind, and translated into forms of thought. [The Afterword to the Second German Edition of Capital]

"it's direct opposite"! No small difference.

Like Hegel, Marx and Engels understood very well that their theoretical achievements were the outcome of a long period of social development. It is possible to understand these achievements only on the basis of an understanding of how the problems of philosophy have been posed and resolved in the history of philosophy. In this history, opposite tendencies in relation to different aspects of the problem of knowledge have interacted over long periods: idealism and materialism (the question of priority of matter or thought), rationalism and empiricism (the question of the priority of reason or
experience), dualism and monism (whether the ideal and material are two different substances or two aspects of one and the same substance), etc.

During this time, the development of human society, in particular the forces of production and the production relations resting upon these forces of production, not to mention the countless effects of warfare, conquest, language, exploration, etc., etc., etc., has radically transformed our relation to Nature.

An approach to understanding what Engels meant when he said that: "The dialectic of Hegel was placed upon its head; or rather, turned off its head, on which it was standing, and placed upon its feet" [Ludwig Feuerbach, etc, Part IV], is to follow the development of the materialist thread in the history of science and philosophy in its main outlines up to Marx. This I will attempt to do, very schematically, in the next section, but for now we need to summarise why it is we call Hegel an idealist.

**Hegel's Objective Idealism**

In talking of the history of philosophy, in §13 of the *Shorter Logic*, Hegel says:

> For these thousands of years the same Architect has directed the work: and that Architect is the one living Mind whose nature is to think, to bring to self-consciousness what it is, and, with its being thus set as object before it, to be at the same time raised above it, and so to reach a higher stage of its own being. [Shorter Logic]

This is a fairly explicitly idealist statement. The last words of *The Shorter Logic* are: "this Idea which has Being is Nature". Almost the last words of *The Science of Logic* are: "The Idea, in positing itself as absolute unity of the pure Notion and its reality and thus contracting itself into the immediacy of being, is the totality in this form - Nature".

This is not a lot different from the Moslem's belief that every movement of every particle in the Universe is at the command of Allah, and an Islamic physicist is as capable as his atheist counterpart of elaborating the laws by which these movements may be described. The Christian Isaac Newton was able to create an enormously powerful mechanistic description of the world requiring only God to set the world into motion at some long ago time for the world to continue its state of motion forever after.

In a sense, Marx's "turning of Hegel upon his feet" is just a small "correction", a matter of detail. The whole of natural science, Marxist political economy and any body of genuine knowledge can be asserted without bothering about this little matter of detail. The problem comes when our knowledge proves inadequate in the face of experience or otherwise when we have to create new concepts or new sciences - to make a new tool, rather than purchase one from the hardware shop.

When Marx set about building a scientific theory of socialism he looked in the direction of the relations of production, not politics, law, morality or religion. This was a choice made on the basis of philosophical materialism.
Hegel's logic was of great value in assisting Marx in arriving at a concept of capitalism as "generalised commodity production" and the commodity as a unity of exchange value and use value. But only Marx's consistent search for the roots of social, political and legal relations or concepts in the relations of production allowed this scientific discovery. Likewise, Marx drew not upon the history of the "idea of Socialism", but upon the actual history of people producing and reproducing themselves as the source material for his research.

Karl Marx, *The German Ideology*

The premises from which we begin are not arbitrary ones, not dogmas, but real premises from which abstraction can only be made in the imagination. They are real individuals, their activity and the material conditions under which they live, both those which they find already existing and those produced by their activity. These premises can thus be verified in a purely empirical way. The first premise of all human history is, of course, the existence of living human individuals. Thus the first fact to be established is the physical organisation of these individuals and their consequent relation to the rest of nature. Of course we cannot here go either into the actual physical nature of man, or into the natural conditions in which man finds himself - geological, orohydrographical, climatic and so on. The writing of history must always set out from these natural bases and their modification in the course of history through the action of people. People can be distinguished from animals by consciousness, by religion or anything else you like. They themselves begin to distinguish themselves from animals as soon as they begin to produce their means of subsistence ...[First Premises of Materialist Method]

**The Meaning of Hegel's Logic**

**IX: A Very Brief History of Materialism**

I include this very brief, schematic summary of the history of materialist philosophy for two reasons:

1. it is not possible to understand the objective idealism in Hegel's philosophy without following to some extent the problems with which materialism was wrestling in the period leading up to Hegel, and
2. the understanding of this history is thus also necessary in order to understand how to approach Hegel's Logic as a materialist.

As remarked above, the essence of philosophy is the relation between being and consciousness. In what follows, I have attempted to highlight the contradictions manifested in the development of this essence. Hegel's philosophy thus arises as the synthesis of these contradictions, itself a concrete Notion, expressing the history of its genesis in the history of Western philosophy up to his time.
Galileo, Bacon and Descartes

In the early sixteenth century, Francis Bacon and Rene Descartes both came to similar conclusions in relation to the state of the science and philosophy of their time. Bacon is quite clear:

Since it seems to me that people do not keep strictly to the straight and narrow when forming their opinions or putting things to the test, I have decided to use all the means at my disposal to remedy this misfortune. For in nothing else does the aspiration to deserve well show itself than it things are so arranged that people, freed both from the hobgoblins of belief and blindness of experiments, may enter into a more reliable and sound partnership with things by, as it were, a certain literate experience. For in this way the intellect is both set up in safety and in its best state, and it will besides be at the ready and then come upon harvests of useful things.

Now the beginnings of this enterprise must in general he drawn from natural history; for the whole body of Greek philosophy with its sects of all kinds, and all the other philosophy we possess seem to me to be founded on too narrow a natural-historical basis, and thus to have delivered its conclusions on the authority of fewer data than was appropriate. For having snatched certain things from experience and tradition, things sometimes not carefully examined or ideas nor securely established, they leave the rest to meditation and intellectual agitation, employing Dialectic to inspire greater confidence in the matter.

But the chemists and the whole pack of mechanics and empirics, should they have the temerity to attempt contemplation and philosophy, being accustomed to meticulous subtlety in a few things, they twist by extraordinary means all the rest into conformity with them and promote opinions more odious and unnatural than those advanced by the very rationalists. For the latter take for the matter of philosophy very little out of many things, the former a great deal out of a few, but in truth those courses are weak and past cure. But the Natural History which has been accumulated hitherto may seem abundant on casual inspection, while in reality it is sketchy and useless, and not even of the kind I am seeking. For it has not been stripped of fables and ravings, and it rushes into antiquity, philology and superfluous narratives, neglectful and high-handed in matters of weight, over-scrupulous and immoderate in matters of no importance. [opening lines of the Preface to Natural History etc., Francis Bacon, 1609]

Bacon proposes a systematic investigation of Nature, particularly mechanics, since "nature of its own accord, free and shifting, disperses the intellect and confuses it with its variety", and:

In general I assign the leading roles in shedding light on nature to artificial things, not only because they are most useful in themselves, but because they are the most trustworthy interpreters of natural things. Can it be said that anyone had just happened to explain the nature of lightning or a rainbow as clearly before the principles of each had been demonstrated by artillery or the artificial simulacra of rainbows on a wall? But if they are trustworthy interpreters of causes, they will also be sure and fertile indicators of effects and of works. [op cit]

and Bacon urged

"Experiments of Fruit not ones of Light", "meticulous care and hand-picked trials, not to mention funding and the utmost patience besides".

Already the great Galilei Galileo had begun on this project, timing the speed with which balls rolled down a ramp with an egg-timer, extracting from the mass of measurements
the underlying principle exhibited in the motion, and thereby laying the basis for modern experimental science, mechanics and astronomy.

Thus began the empirical trend of natural science which indeed laid the bass "for the building up of Philosophy", laying the greatest emphasis on experience as the source of knowledge.

Hegel commented on this trend:

Under these circumstances a double want began to be felt. Partly it was the need of a concrete subject-matter, as a counterpoise to the abstract theories of the understanding, which is unable to advance unaided from its generalities to specialisation and determination. Partly, too, it was the demand for something fixed and secure, so as to exclude the possibility of proving anything and everything in the sphere, and according to the method of the finite formulae of thought. Such was the genesis of Empirical philosophy, which abandons the search for truth in thought itself, and goes to fetch it from Experience, the outward and the inward present.

The rise of Empiricism is due to the need thus stated of concrete contents, and a firm footing - needs which the abstract metaphysic of the understanding failed to satisfy. ...

When it thus appeared that abstract metaphysical thinking was inadequate, it was felt that resource must be had to empirical psychology. The same happened in the case of Rational Physics. The current phrases there were, for instance, that space is infinite, that Nature makes no leap, etc. Evidently this phraseology was wholly unsatisfactory in presence of the plenitude and life of nature. [Shorter Logic. §37: Empiricism]

Rene Descartes, on the other hand, shared Bacon's contempt for the reliability of the science of the day:

I shall not say anything about Philosophy, but that, seeing that it has been cultivated for many centuries by the best minds that have ever lived, and that nevertheless no single thing is to be found in it which is not subject of dispute, and in consequence which is not dubious I had not enough presumption to hope to fare better there than other men had done. And also, considering how many conflicting opinions there may be regarding the self-same matter, all supported by learned people, while there can never be more than one which is true, I esteemed as well-nigh false all that only went as far as being probable.

Then as to the other sciences, inasmuch as they derive their principles from Philosophy, I judged that one could have built nothing solid on foundations so far from firm. And neither the honour nor the promised gain was sufficient to persuade me to cultivate them, for, thanks be to God, I did not find myself in a condition which obliged me to make a merchandise of science for the improvement of my fortune; and, although I did not pretend to scorn all glory like the Cynics, I yet had very small esteem for what I could not hope to acquire, excepting through fictitious titles. And, finally, as to false doctrines, I thought that I already knew well enough what they were worth to be subject to deception neither by the promises of an alchemist, the predictions of an astrologer, the impostures of a magician, the artifices or the empty boastings of any of those who make a profession of knowing that of which they are ignorant. [Discourse on Method, Rene Descartes, 1632]

Moreover, Descartes asserted that experience cannot provide valid knowledge without the aid of understanding which cannot in principle be attained through reliance on sense perception:
... even the philosophers in the Schools hold it as a maxim that there is nothing in the understanding which has not first of all been in the senses,... while neither our imagination nor our senses can ever assure us of anything, if our understanding does not intervene.

To establish that foundation of certainty upon which knowledge could begin to be built, Descartes asked himself what he knew for certain. From this enquiry he was led to his famous maxim "I think, therefore I am". That is, I must absolutely doubt everything that is given to me by sense perception and every argument of Reason which calls upon prior principles, but as I think on this, I at least know that someone is thinking.

Descartes approach considered on the one side Mind, and on the other matter. Confronted with the mystery as to how the mind, which was utterly without extension or any corporeal form, could apprehend the objective world, which had extension and other physical properties, Descartes was led to conclude that there existed a special organ somewhere in the skull, which connected mind with matter!

Descartes' somewhat idiosyncratic solution to the problem of the correspondence of mind and matter, is typical of his speculations on Nature - filled with brilliant insights, but lacking the very solid basis which he sought through the rigorous application of Reason. Descartes himself contributed brilliantly to the future of natural science through his invention of Cartesian Geometry, in which spatial forms are identified with algebraic formulae - the single most important tool for theoretical representation of the material world in almost all branches of natural science ever since.

Descartes is thus described as a Dualist because he begins with a dichotomy between consciousness and matter, as two essentially different substances, whose correspondence must then be brought about "externally". Experience shows that consciousness corresponds to the objective world - and not just the consciousness of immediate sense perception, but Reason itself. But how is this possible?

Descartes is a Materialist because he does not doubt the independent existence of the material world outside of consciousness, and accepts that this material world is given in sense perception. However, as a Rationalist, Descartes holds that the world beyond senses is knowable only through the activity of Reason. While Descartes pays his respects to the accumulated knowledge of his Age, his method is very much one which appeals to the reasoning activity of the individual thinker.

Bacon, on the other hand, calls for a whole program of collective accumulation of knowledge. Clearly Bacon lays the emphasis upon Experience as the source of knowledge, and he does not question the capacity of Reason to arrive at truth through analysis of the data of experience, provided only that there is a patient, systematic and critical analysis of that material. For this reason he is known as an Empiricist.

Thus, this period of the beginning of materialism at the beginning of the seventeenth century, is characterised by the contradiction between Rationalism and Empiricism.
Galileo, Bacon and Descartes have laid the basis in materialist philosophy for the revolution in natural science, industry and social development.

**Spinoza, Hobbes and Locke**

Descartes' *Discourse on Method* had been published in 1637 at Leiden in the Dutch Republic, where there was a measure of religious freedom. The young Jew, Benedicto Spinoza was 5 years old at this time, born in Leiden from parents who had fled to the Republic to escape religious persecution. By the age of 27, Spinoza had been expelled from the Jewish community for his heresy.

Spinoza had worked over Descartes' system, rendering it into the form of "geometrical" axioms and theorems, and then developed his own system which overcame Descartes' dualism. For Spinoza, God did not create the world (far less intervene in it), God is Nature. Nature is composed of substances which have attributes; Thought and extension are not two different substances, but attributes of one and the same substance. The conscious person manifests God in their thought and actions, their free will being that of Nature or God.

By this device, Spinoza has done away with Descartes' dualism; his "geometric" exposition attempts to set for philosophy a foundation as rational and exact as that of geometry. However, despite Spinoza's solution of the problem of Free Will, Spinoza's Universe is totally determined, the is no Chance. Furthermore, while Spinoza has brilliantly resolved the problem of dualism, he has not provided any real method for the elaboration of knowledge. His system of axioms, like Descartes' supposedly "clear and distinct ideas given immediately to Reason:

If any one should say, then, that he has a clear and distinct, that is a true, idea of substance, and should nevertheless doubt whether such substance existed, he would indeed be like one who should say that he had a true idea and yet should wonder whether it were false (as will be manifest to any one who regards it carefully); or if any one should say that substance was created, he would state at the same time that a false idea had been made true, than which it is difficult to conceive anything more absurd. And therefore it must necessarily be acknowledged that the existence of substance, like its essence, is an eternal truth.  

[*Ethics*, Spinoza, 1677]

And Spinoza's "clear and distinct, that is true" axioms are put forth boldly from line-one of his *Ethics*, and made the basis of a series of theorems, lemmas and corollaries building up an entire system. But to the reader, they may as well have been pulled out of his back-pocket. Spinoza's Rational, Materialist, Monism had little influence until the mid-eighteenth century when he was one of many sources underlying the blossoming of "classical German philosophy". Subsequently however, figures such as Goethe, Haeckel and Einstein embraced Spinoza's materialist monism.

Meanwhile in England, Thomas Hobbes set about working Bacon's doctrine of Experience into a philosophical system. Hobbes narrows the concept of experience as the source of knowledge:
Concerning the Thoughts of man, ... they are every one a Representation or Appearance of some quality, or other Attribute of a body without us; which is commonly called an Object. Which Object worketh on the Eyes, Ears, and other parts of mans body; and by diversity of working, produceth diversity of Apparences.

The Origin of them all, is that which we call SENSE; (For there is no conception in a mans mind, which hath not at first, totally, or by parts, been begotten upon the organs of Sense.) The rest are derived from that origin.

To know the natural cause of Sense, is not very necessary to the business now in hand; ... Nevertheless, ...

The cause of Sense, is the External Body, or Object, which presseth the organ proper to each Sense, either immediately, as in the Taste and Touch; or mediately, as in Seeing, Hearing, and Smelling: which pressure, by the mediation of Nerves, and other strings, and membranes of the body, continued inwards to the Brain, and Heart, causeth there a resistance, or counter-pressure, or endeavour of the heart, to deliver itself: which endeavour because Outward, seemeth to be some matter without. And this seeming, or fancy, is that which men call Sense; ... All which qualities called Sensible, are in the object that causeth them, but so many several motions of the matter, by which it presseth our organs diversly. Neither in us that are pressed, are they any thing else, but divers motions; (for motion, produceth nothing but motion.) But their appearance to us is Fancy, the same waking, that dreaming.

And as pressing, rubbing, or striking the Eye, makes us fancy a light; ... [etc] and very object seem invested with the fancy it begets in us; Yet still the object is one thing, the image or fancy is another. So that Sense in all cases, is nothing else but original fancy, caused (as I have said) by the pressure, that is, by the motion, of externall things upon our Eyes, Ears, and other organs thereunto ordained. [Leviathan, Hobbes, 1650]

This line of reasoning is taken further by John Locke, who counters Descartes' Dualism, and in particular his assertion that Reason is not given by Experience, but is innate. Locke equates sense impressions with "ideas" - "ideas of sense". "Ideas of reflection", he says, are the mind's reflection upon its own activity, going so far as to say that the mind is a tabula rasa - a blank sheet of paper, upon which Nature writes:

Let us then suppose the mind to be, as we say, white paper, void of all characters without any ideas; how comes it to be furnished? Whence comes it by that vast store, which the busy and boundless fancy of man has painted on it with an almost endless variety? Whence has it all the materials of reason and knowledge? To this I answer, in one word, From experience: in that all our knowledge is founded, and from that it ultimately derives itself.

Our observation, employed either about external sensible objects, or about the internal operations of our minds, perceived and reflected on by ourselves is that which supplies our understandings with all the materials of thinking. These two are the fountains of knowledge, from whence all the ideas we have, or can naturally have, do spring. [An Essay concerning Human Understanding, John Locke, 1689]

Neither Hobbes nor Locke question the existence of the external world: it is objects that act on the senses, generating ideas; nor do they doubt the adequacy of the knowledge so given.

In this period therefore, both the British Empirical school and the European Rationalists wrestled with the contradiction between dualism and monism.
George Berkeley, the Irish Bishop, was an avowed conservative and enemy of Materialism, and his contribution to materialism is that he took empiricism to "it's logical conclusion", as we say. Descartes showed that the object itself cannot be equated to our image formed of it by sense perception. Berkeley points out that, if all we have is "ideas of sensation" and "ideas of reflection", then we have no knowledge of anything outside consciousness at all, only knowledge of our sensations!

It is evident to any one who takes a survey of the objects of human knowledge, that they are either ideas actually imprinted on the senses; or else such as are perceived by attending to the passions and operations of the mind; or lastly, ideas formed by help of memory and imagination - either compounding, dividing, or barely representing those originally perceived in the aforesaid ways. ...

But, besides all that endless variety of ideas or objects of knowledge, there is likewise something which knows or perceives them; and exercises divers operations, as willing, imagining, remembering, about them. This perceiving, active being is what I call MIND, SPIRIT, SOUL, or MYSELF....

That neither our thoughts, nor passions, nor ideas formed by the imagination, exist without the mind, is what everybody will allow --And to me it is no less evident that the various SENSATIONS, or ideas imprinted on the sense, however blended or combined together ...

It is indeed an opinion strangely prevailing amongst men, that houses, mountains, rivers, and in a word all sensible objects, have an existence, natural or real, distinct from their being perceived by the understanding. But, with how great an assurance and acquiescence soever this principle may be entertained in the world, yet whoever shall find in his heart to call it in question may, if I mistake not, perceive it to involve a manifest contradiction. For, what are the forementioned objects but the things we perceive by sense? and what do we perceive besides our own ideas or sensations? and is it not plainly repugnant that any one of these, or any combination of them, should exist unperceived? [Of the Principles of Human Knowledge, George Berkeley, 1710]

And this total impasse, British Empiricism has never overcome: "Matter" is an "abstract idea", of which we can have no knowledge, just like the psychologists who call themselves "Behavioural Scientists", because they can have no knowledge of someone else's consciousness, but more of this later....

Roughly contemporary with Berkeley was Sir Isaac Newton. Newton followed the advice of Galileo and Bacon and made good use of the Rational tools provided by Descartes, and by systematic analysis of the data of planned experiment and the judicious use of definitions, axioms and formal logical deduction, and, in the case of his discovery of the Calculus not bothering too much if the exigencies of formal logical proof got in the way of a useful line of analysis, erected a mechanical explanation of the Universe which is absolutely stunning in its scope and power. Those who came after must truly have felt that there was nothing more to do but work out the details!

Newton brought within a single law the motion of simple day-to-day objects on Earth and the motion of the Heavens, which were found to be simply "falling" around their
epicentre, prevented from falling into the Sun only by the initial impetus which must have been imparted an indefinite time long ago in the past by God.

Indeed, Newton pushed God, not out of existence altogether, but back to the "boundary conditions" of the Universe, with the task simply of decreeing the Laws of Nature and setting the whole thing in motion, and we humans to watch in wonder and admiration ... and understand.

Berkeley the subjective idealist (he later gravitated to an objective idealist position, having the Universal Mind of God holding the world in existence) took the internal contradiction within empiricism to its absurd conclusion; Newton took its strength to its consummate completion in a rounded out mechanical view of the Universe, consigning God to the role of "pressing the Start button", and "the observer" is reduced to the role of a reference point in time-space; for Berkeley, the world exists only in the mind of the observer.

Here the contradiction is between subjectivism and objectivism.

The French Enlightenment and Hume

This leap in scientific knowledge, accompanied by a crisis in the science of knowledge, is reflected in the philosophy of the Enlightenment. The wonderful flourishing of philosophy in pre-Revolutionary France laid the basis for the overthrow of Monarchy and all the crap of ages - Voltaire, Rousseau, Condillac, d'Alembert, Condorcet, Montesquieu, Gassendi, Fontonelle, Buffon, d'Holbach, Helvetius and Diderot.

Many different views were to be found: D'Alembert was a sensationalist, Diderot a mechanical materialist, Rousseau a sceptic; some were Deists, some Atheists. All agreed that the advancement of science was inimical to oppression. The contradictions inherited from the previous period were not resolved, but the material for a way out of the impasse was accumulated. Above all, what was achieved by the Enlightenment was the beginning of an understanding of knowledge, personality, consciousness as a social product: inequality was the result of private property, feudalistic beliefs the result of feudalistic upbringing, Nature played upon the senses, and society played upon the person, people are formed by nature and society.

What is this egg? An unperceiving mass, before the germ is introduced into it; and after the germ is introduced, what is it then? still only an unperceiving mass, for this germ itself is only a crude inert fluid. How will this mass develop into a different organisation, to sensitiveness, to life? By means of heat. And what will produce the heat? Motion. What will be the successive effects of this motion?

Instead of answering me, sit down and let's watch them from moment to moment. First there's a dot that quivers, a little thread that grows longer and takes on colour; tissue is formed; a beak, tiny wings, eyes, feet appear; a yellowish material unwinds and produces intestines; it is an animal. This animal moves, struggles, cries out; I hear its cries through the shell; it becomes covered with down; it sees. The weight of its head, shaking about, brings its beak constantly up against the inner wall of its prison; now the wall is
broken; it comes out, it walks about, flies, grows angry, runs away, comes near again, complains, suffers, loves, desires, enjoys; it has the same affections as yourself, it performs the same actions. Are you going to assert with Descartes that it is a purely imitative machine? Little children will laugh at you, and philosophers will retort that if this be a machine then you, too, are a machine. If you admit that between the animal and yourself the difference is merely one of organisation, you will be showing good sense and reason, you will be honest; but from this there will be drawn the conclusion that refutes you; namely that, from inert matter, organised in a certain way, and impregnated with other inert matter, and given heat and motion, there results the faculty of sensation, life, memory, consciousness, passion and thought. You have only two courses left to take: either to imagine within the inert mass of the egg a hidden element that awaited the egg's development before revealing its presence, or to assume that this invisible element crept in through the shell at a definite moment in the development. But what is this element? Did it occupy space or did it not? How did it come, or did it escape without moving? What was it doing there or elsewhere? Was it created at the instant it was needed? Was it already in existence? Was it waiting for a home? If it was homogeneous it was material; if heterogeneous, one cannot account for its -previous inertia nor its activity in the developed animal. Just listen to yourself, and you will be sorry for yourself; if you will perceive that, in order to avoid making a simple supposition that explains everything, namely the faculty of sensation as a general property of matter or a product of its organisation, you are giving up common sense and plunging headlong into an abyss of mysteries, contradictions and absurdities. [Conversation between Didero and D'Alembert, Diderot, 1769]

In Britain, David Hume responded to Berkeley's challenge with a good British compromise: "Well, we can't know for absolute certain that the Sun will rise tomorrow, just because it always has before, but we can be sure enough for practical purposes":

All reasonings concerning matter of fact seem to be founded on the relation of cause and effect. By means of that relation alone we can go beyond the evidence of our memory and senses. ... The hearing of an articulate voice and rational discourse in the dark assures us of the presence of some person. Why? Because these are the effects of the human make and fabric, and closely connected with it. If we anatomise all the other reasonings of this nature, we shall find that they are founded on the relation of cause and effect, and that this relation is either near or remote, direct or collateral. ....

I shall venture to affirm, as a general proposition, which admits of no exception, that the knowledge of this relation is not, in any instance, attained by reasonings a priori, but arises entirely from experience, when we find that any particular objects are constantly conjoined with each other. Let an object be presented to a man of ever so strong natural reason and abilities; if that object be entirely new to him, he will not be able, by the most accurate examination of its sensible qualities, to discover any of its causes or effects. ...

Who will assert that he can give the ultimate reason, why milk or bread is proper nourishment for a man, not for a lion or a tiger? But ... We fancy, that were we brought on a sudden into this world, we could at first have inferred that one billiard ball would communicate motion to another upon impulse, and that we needed not to have waited for the event, in order to pronounce with certainty concerning it. Such is the influence of custom, that, where it is strongest, it not only covers our natural ignorance but even conceals itself, and seems not to take place, merely because it is found in the highest degree.

... In vain, therefore, should we pretend to determine any single event, or infer any cause or effect, without the assistance of observation and experience.

Hence we may discover the reason why no philosopher, who is rational and modest, has ever pretended to assign the ultimate cause of any natural operation, or to show distinctly the action of that power, which produces any single effect in the universe. It is confessed, that the utmost effort of human reason is to reduce the principles, productive of natural phenomena, to a greater simplicity, and to resolve the many
particular effects into a few general causes, by means of reasonings from analogy, experience, and observation. But as to the causes of these general causes, we should in vain attempt their discovery, nor shall we ever be able to satisfy ourselves, by any particular explication of them. These ultimate springs and principles are totally shut up from human curiosity and enquiry. [An Enquiry Concerning Human Understanding, David Hume, 1772]

Hume is a Sceptic; he demonstrates that while experience may teach us what to expect, it cannot give us necessity. Reason can give us necessity, but there is precious little known to Reason other than what is first given by experience. But the important thing is that he directs attention not just to the content of knowledge but its form. But Hume does not know where do draw the line; knowledge is always relative, but for Hume the world remained fundamentally unknowable. Maybe the Sun won't rise tomorrow - who can say?

Diderot on the other hand, is absolutely confident that organic matter arose from inorganic matter, and thinking matter from organic matter, and continues to do so every moment, and that if we don't yet understand exactly how that happens, then every day we get closer and closer to understanding it - and his life work, the compilation of the Encyclopaedia, and his writings written to be read by the common people, he was putting it into practice.

Diderot is an out-and-out materialist, but his materialism is the mechanical materialism of Newton; there is no scepticism there at all, his materialism is uncritical, Dogmatic. The further development of materialism, required the resolution of the struggle between dogmatism and scepticism.

Kant

The philosophical world into which Immanuel Kant entered was one riven by apparently irresolvable contradictions. The proponents of the opposing views hardly spoke the same philosophical language and their views seemed irreconcilable.

Kant set himself the task of creating a science of philosophy which would allow these contradictions to be overcome. In particular he addressed himself to the scepticism of Hume:

The celebrated David Hume was one of those geographers of human reason who imagine that they have given a sufficient answer to all such questions by declaring them to lie beyond the horizon of human reason - a horizon which, however, Hume was unable to determine. His attention especially was directed to the principle of causality; and he remarked with perfect justice that the truth of this principle, and even the objective validity of the conception of a cause, was based upon no clear insight, that is, upon no a priori knowledge. Hence he concluded that this law does not derive its authority from its universality and necessity, but merely from its general applicability in the course of experience, and a kind of subjective necessity thence arising, which he termed habit. From the inability of reason to establish this principle as a necessary law for the acquisition of all experience, he inferred the nullity of all the attempts of reason to pass the region of the empirical.
This procedure of subjecting the facts of reason to examination, and, if necessary, to disapproval, may be termed the *censorship* of reason. This censorship must inevitably lead us to *doubt* regarding all transcendent employment of principles. But this is only the second step in our inquiry. The first step in regard to the subjects of pure reason, and which marks the infancy of that faculty, is *dogmatic*. The second, which we have just mentioned, is *sceptical*, and it gives evidence that our judgement has been improved by experience. But a third step, such as can be taken only by fully matured judgment, based on assured principles of proved universality, is now necessary, namely to subject to examination, not the facts of reason, but reason itself, in the whole extent of its powers, and as regards its aptitude for pure *a priori* modes of knowledge. This is not the censorship but the *criticism* of reason, whereby not its present *bounds* but its determinate and necessary *limits*, not its ignorance in regard to all possible questions of a certain kind, are demonstrated from principles, and not merely arrived at by way of conjecture. [Kant, *Critique of Pure Reason*, Method, I, 2]

Following a path which is reminiscent of that of Descartes, Kant attempts to establish those synthetic Judgements (i.e. truths which are not implicit in a given concept, which could be established by analysis), which are given to Reason *a priori*. These included the nature of time-space, and in the light of subsequent entirely unpredictable developments in physics, it must be agreed that little remains today of Kant's "*synthetic a priori judgements*".

Kant also demonstrated that strict adherence to formal logic led to antinomies - self-contradictions: whether we are or are not to think the world limited in space and time; whether matter must be conceived either as endlessly divisible, or as consisting of atoms; the antithesis of freedom and necessity: whether everything in the world must be supposed subject to the condition of causality, or if we can also assume free beings; whether the world as a whole has a cause or it is uncaused. But, as Hegel later remarked in his commentary on Kant: Antinomies "appear in all objects of every kind, in all conceptions, notions, and Ideas". But for Kant: Logic is a pure intuition and "contains the absolutely necessary rules of thought without which there can be no employment whatsoever of the understanding". Thus, for Kant, the "world beyond sensation", the world "in-itself" remained inaccessible to Reason. Science could have as content only Appearances. Thus, the Critical Philosophy re-established Scepticism.

Kant’s achievement is enormous: he establishes a system of categories and concepts of philosophy which was the basis for the stunning development of Classical German Philosophy and later Marxism over the 50 years following the *Critique of Pure Reason*, and it remains the point of reference for all schools of philosophy which pretend to the status of science, up to the present.

However, it has to be said that Kant failed in his project to provide the basis to overcome the contradictions plaguing philosophy, and in fact produced a philosophy which was riven by contradictions itself. In fact, it must be marked as an achievement of Kant that he proved that *contradiction is inherent* in thought.

However, Kant’s main contribution is that he focused attention not on the formal rules for joining concepts logical propositions, but upon the categories of Logic, upon the fact
that in forming a concept, Reason operated with categories, and these categories had to be subject to investigation. Kant identified a series of "original pure concepts of synthesis that the understanding contains within itself a priori", viz.: Unity, plurality and totality; reality, negation and limitation; inherence or subsistence, causality or dependence and community; possibility or impossibility, existence or non-existence and necessity or contingency.

It would go way beyond the scope of a paragraph or two, to do justice to a critique of Kant's philosophy. Likewise, the usual study of Fichte and Schelling, who lie between Kant and Hegel in the rapid unfolding of classical German philosophy, cannot be attempted here.

Suffice it to say, that in focusing attention on the critique of Reason, Kant set the direction and provided invaluable tools for the resolution of the crisis of philosophy which he attempted, but he did not himself achieve this resolution.

This brings us to consideration of Hegel and the further revolution in philosophy which came after him, which is the subject of earlier chapters.

It is worth noting, though, that Hegel wrote the Science of Logic in 1812-1816, and died before Charles Lyell demonstrated the development of the Earth's crust and Darwin published the Origin of Species (in 1859), let alone the discovery of the wave-particle nature of matter at the beginning of this century which demonstrated the validity of Hegel's dialectics at the most fundamental level of Nature and Gödel and Turing demonstrated the fundamental limitations of formal logic.

**Summary**

It would go far beyond the scope of extremely brief and schematic sketch of the history of materialist philosophy to mention the natural scientific, technical and social developments that have accompanied the above philosophical genesis. But philosophical materialism, positive science, the forces of production and the social relations of production can only develop in definite relationship to one another.

Further, like society and industry, knowledge develops according to necessary laws which among other things means that scientific understanding of psychology, history and society can only come after a protracted development of geometry, mechanics, physics, chemistry, biology, etc., and it can only be at a certain point in the development of science and industry that a scientific view of the development of human history is possible.

Such a scientific view of human history and society is only possible on the basis of an exhaustive study of all facets of human life, a consistent search for the roots of social, political and ideological change in the conditions of material life, and a ruthlessly critical, dialectical and consciously historical and creative handling of concepts.
This task goes beyond the competence of the professional logician, since having established the theoretical framework for the comprehension of theory and practice, the criticism of concepts requires revolutionary-practical activity.

The foundations of such a standpoint were laid by Karl Marx and Friedrich Engels, and is brilliantly summarised in Marx's Preface to The Contribution to the Critique of Political Economy.

My inquiry led me to the conclusion that neither legal relations nor political forms could be comprehended whether by themselves or on the basis of a so-called general development of the human mind, but that on the contrary they originate in the material conditions of life, the totality of which Hegel, following the example of English and French thinkers of the eighteenth century, embraces within the term "civil society"; that the anatomy of this civil society, however, has to be sought in political economy. The study of this, which I began in Paris, I continued in Brussels, where I moved owing to an expulsion order issued by M. Guizot. The general conclusion at which I arrived and which, once reached, became the guiding principle of my studies can be summarised as follows. In the social production of their existence, men inevitably enter into definite relations, which are independent of their will, namely relations of production appropriate to a given stage in the development of their material forces of production. The totality of these relations of production constitutes the economic structure of society, the real foundation, on which arises a legal and political superstructure and to which correspond definite forms of social consciousness. The mode of production of material life conditions the general process of social, political and intellectual life. It is not the consciousness of men that determines their existence, but their social existence that determines their consciousness. At a certain stage of development, the material productive forces of society come into conflict with the existing relations of production or -- this merely expresses the same thing in legal terms -- with the property relations within the framework of which they have operated hitherto.

From forms of development of the productive forces these relations turn into their fetters. Then begins an era of social revolution. The changes in the economic foundation lead sooner or later to the transformation of the whole immense superstructure. In studying such transformations it is always necessary to distinguish between the material transformation of the economic conditions of production, which can be determined with the precision of natural science, and the legal, political, religious, artistic or philosophic -- in short, ideological forms in which men become conscious of this conflict and fight it out.

Just as one does not judge an individual by what he thinks about himself, so one cannot judge such a period of transformation by its consciousness, but, on the contrary, this consciousness must be explained from the contradictions of material life, from the conflict existing between the social forces of production and the relations of production. No social order is ever destroyed before all the productive forces for which it is sufficient have been developed, and new superior relations of production never replace older ones before the material conditions for their existence have matured within the framework of the old society. Mankind thus inevitably sets itself only such tasks as it is able to solve, since closer examination will always show that the problem itself arises only when the material conditions for its solution are already present or at least in the course of formation. In broad outline, the Asiatic, ancient, feudal and modern bourgeois modes of production may be designated as epochs marking progress in the economic development of society. The bourgeois mode of production is the last antagonistic form of the social process of production -- antagonistic not in the sense of individual antagonism but of an antagonism that emanates from the individuals' social conditions of existence -- but the productive forces developing within bourgeois society create also the material conditions for a solution of this antagonism. The prehistory of human society accordingly closes with this social formation. [Critique of political Economy]
X: The Dialectical Method

Lenin's "Elements of Dialectics"

Lenin summaries the dialectical method in his *Philosophical Notebooks* as follows:

1. "The determination of the concept out of itself [the thing itself must be considered in its relations and in its development];
2. the contradictory nature of the thing itself (the other of itself), the contradictory forces and tendencies in each phenomenon;
3. the union of analysis and synthesis".

And in greater detail as follows:

1. "the objectivity of consideration (not examples, not divergencies, but the Thing-in-itself).
2. the entire totality of the manifold relations of this thing to others.
3. the development of this thing, (phenomenon, respectively), its own movement, its own life.
4. the internally contradictory tendencies (and sides) in this thing.
5. the thing (phenomenon, etc) as the sum and unity of opposites.
6. the struggle, respectively unfolding, of these opposites, contradictory strivings, etc.
7. the union of analysis and synthesis - the breakdown of the separate parts and the totality, the summation of these parts.
8. the relations of each thing (phenomenon, etc.) are not only manifold, but general, universal. Each thing (phenomenon, etc.) is connected with every other.
9. not only the unity of opposites, but the transitions of every determination, quality, feature, side, property into every other [into its opposite?].
10. the endless process of the discovery of new sides, relations, etc.
11. the endless process of the deepening of man's knowledge of the thing, of phenomena, processes, etc., from appearance to essence and from less profound to more profound essence.
12. from co-existence to causality and from one form of connection and reciprocal dependence to another, deeper, more general form.
13. the repetition at a higher stage of certain features, properties, etc., of the lower and
14. the apparent return to the old (negation of the negation).
15. the struggle of content with form and conversely. The throwing off of the form, the transformation of the content.
16. the transition of quantity into quality and vice versa (15 and 16 are examples of 9)".

[Philosophical Notebooks, Volume 38, Lenin's Collected Works, p221]
Lenin’s list is as good as any. It might be rewarding to return to this checklist from time to time while reading Hegel.

One could hardly do better, either, than Marx's famous reaffirmation of Hegel's gains

**Theses on Feuerbach**

**I**

The chief defect of all hitherto existing materialism (that of Feuerbach included) is that the thing, reality, sensuousness, is conceived only in the form of the **object or of contemplation**, but not as **sensuous human activity, practice**, not subjectively. Hence, in contradistinction to materialism, the **active** side was developed abstractly by idealism -- which, of course, does not know real, sensuous activity as such.

Feuerbach wants sensuous objects, really distinct from the thought objects, but he does not conceive human activity itself as **objective** activity. Hence, in *Essence of Christianity*, he regards the theoretical attitude as the only genuinely human attitude, while practice is conceived and fixed only in its dirty-judaical manifestation. Hence he does not grasp the significance of "revolutionary", of "practical-critical", activity.

**II**

The question whether objective truth can be attributed to human thinking is not a question of theory but is a practical question. Man must prove the truth -- i.e. the reality and power, the this-sidedness of his thinking in practice. The dispute over the reality or non-reality of thinking that is isolated from practice is a purely **scholastic** question.

**III**

The materialist doctrine concerning the changing of circumstances and upbringing forgets that circumstances are changed by men and that it is essential to educate the educator himself. This doctrine must, therefore, divide society into two parts, one of which is superior to society.

The coincidence of the changing of circumstances and of human activity or self-changing can be conceived and rationally understood only as **revolutionary practice**.

**IV**

Feuerbach starts out from the fact of religious self-alienation, of the duplication of the world into a religious world and a secular one. His work consists in resolving the religious world into its secular basis.

But that the secular basis detaches itself from itself and establishes itself as an independent realm in the clouds can only be explained by the cleavages and self-
contradictions within this secular basis. The latter must, therefore, in itself be both understood in its contradiction and revolutionised in practice. Thus, for instance, after the earthly family is discovered to be the secret of the holy family, the former must then itself be destroyed in theory and in practice.

V

Feuerbach, not satisfied with abstract thinking, wants contemplation; but he does not conceive sensuousness as practical, human-sensuous activity.

VI

Feuerbach resolves the religious essence into the human essence. But the human essence is no abstraction inherent in each single individual.

In its reality it is the ensemble of the social relations.

Feuerbach, who does not enter upon a criticism of this real essence, is consequently compelled:

1. To abstract from the historical process and to fix the religious sentiment as something by itself and to presuppose an abstract -- isolated -- human individual.
2. Essence, therefore, can be comprehended only as "genus", as an internal, dumb generality which naturally unites the many individuals.

VII

Feuerbach, consequently, does not see that the "religious sentiment" is itself a social product, and that the abstract individual whom he analyses belongs to a particular form of society.

VIII

All social life is essentially practical. All mysteries which lead theory to mysticism find their rational solution in human practice and in the comprehension of this practice.

IX

The highest point reached by contemplative materialism, that is, materialism which does not comprehend sensuousness as practical activity, is contemplation of single individuals and of civil society.

X

The standpoint of the old materialism is civil society; the standpoint of the new is human society, or social humanity.
The philosophers have only interpreted the world, in various ways; the point is to change it.

**Summary**

For my part, I have identified the following features of the dialectical method:

1. The validity of things as moments or stages of development;
2. Not definitions, but the genesis of a thing;
3. Knowledge begins with Immediate perception, but all knowledge is mediated: Being is Nothing;
4. The objective immanent movement of a thing itself;
5. Both phenomenon and essence are objective;
6. Subjection of all concepts to criticism the source of movement and change is internal to external;
7. The Conception of a thing as a Unity of Opposites;
8. The discovery of the internal contradictions within a thing;
9. Practice is the Criterion of Truth;
10. Not the Thing or its Other but the Transition between them;
11. The Absolute is Relative and there is an Absolute within the Relative;
12. Negation of Negation: the retention of the positive within the negative;
13. Quantitative change at a certain point becomes qualitative change;
14. The struggle of form and content, the content is also a form, the shedding of form and the transformation of content into form and form into content;
15. Cause and effect are relative moments, merged and canceled in actuality;
16. Chance and necessity are relative moments, merged and canceled in actuality;
17. All that is rational is real, all that is real is rational and all that is real deserves to perish;
18. Freedom is the understanding of Necessity;
19. The truth of actuality is a concept;
20. Knowledge proceeds from Abstract to Concrete;
21. The truth is concrete;
22. Subjectivity is also Objective, objectivity includes the subject;
23. Analysis and Synthesis are inseparable, the alternation between synthesis and analysis;
24. The Means is realised in the End, the End is realised in the Means;
25. Life is Cognition;
26. Theory is the comprehension of Practice.