Concepts, a Critical Approach

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2011

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Introduction

If you want to know about concepts, and go looking in a bookshop for a book on concepts, then you will probably come up with something on the Psychology of Concepts, written within the genre of Cognitive Psychology. Concepts are also discussed by linguists, learning theorists, historians of science and culture and philosophers. Each of these give their own take on the topic, some taking concepts to be something which exists in the mind of an individual person, and others taking concepts to be something with a social and cultural existence, implicit in the literature, technology and activity of a community. But in general, amongst modern studies of concepts, it is only the Cognitive Psychologists who get right down to brass tacks so to speak. With a few notable exceptions, other currents of research are content to either leave the hard questions to psychology or accept that no-one can really know what a concept is. But the work of the Cognitive Psychologists is very naïve and narrow in its vision, from the standpoint of historians of science, linguists and learning theorists, all those who actually work with concepts.

Our aim here is to briefly review what has been established in the work of current researchers and by previous generations, with special attention to Robert Brandom, and then focus more extensively on two writers: Hegel and Vygotsky, finishing off with a very brief summary of what I believe a concept is.

Part One of the book reviews a range of contemporary disciplines which contribute to our understanding of concepts: Cognitive Psychology, briefly including the sociocultural turn and 'situated cognition'; the 'narrative turn' in the human sciences, which poses narrative as an *alternative* to conceptual rationality; linguistics and the idea of metaphor as the foundation for concepts; models and analogies in the study of conceptual change, both in learning theory and the history and philosophy of science, and touching on the critical views of Ludwig Wittgenstein. The first part concludes with a review of the work of Robert Brandom, an analytical philosopher who has made concepts his special topic. Brandom corrects many of the problems which I have identified in Cognitive Psychology, and offers a plausible answer to the question of what a concept is, from the point of view of analytical philosophy.

Every one of the diverse currents of contemporary research on concepts contributes something to our understanding of concepts. It is

as if a group of your friends all reported on their recent visit to London. One spoke of the theatres, the other work opportunities, another the historic buildings, another the ethnic melting pot, and so on. Each of them thinks that they have the last word on what London is, but none of them can tell you what it is about London which offers all of these aspects to different visitors. This is an all too typical problem with the sciences today, divided as they are into disciplinary silos. While I think that all of the current research projects describe something real, a concept is not just the aggregate of all these different views, but rather a concept *unifies* its divergent realisations. In order that an interdisciplinary approach to concepts may have any chance of overcoming this fragmentation, it is necessary to make an excursion into the history of philosophy.

Part Two is a schematic history of modern philosophy from Descartes to Hegel, in which I look at how philosophers came to grips with what a concept is, culminating in Hegel's major work, the "Science of Logic." Hegel gave us an entire theory of the concept but this was as far as idealist philosophy could go. The excursion into the history of philosophy provides us with four things. (1) An approach to the transcending mind-matter dichotomy and dualism which still plagues analytical science, (2) Hegel's logic, which offers an alternative to the analytical method and formal logic as well as a speculative anatomy of the concept, and (4) the developmental method of analysis and a conception of concepts as processes rather than products.

After Hegel, however, further progress could be made only by means of a break from philosophical speculation and a turn to scientific experiment and observation. Marx's critique of Hegel made a start, but the formulation of a scientific psychology able to address the problem of concepts would take more than 50 years.

Up until the mid-19th century, psychology was a topic within philosophy, a speculative science. From the beginning of the 20th century, psychology would be part of experimental science. By means of a series of biographical sketches, the Part Three traces how, mainly during the second half of the nineteenth century, the study of concepts made the transition from philosophy to the human sciences, without abandoning what had been gained by philosophy. This was a difficult transition which saw most of the field turn its back on the very real gains of philosophy and to a large extent, regress to common sense approaches to concepts, with science firmly under the sway of the dominant analytical philosophy.

Part Four focuses on the work of the Soviet psychologist, Lev Vygotsky, whose impossibly difficult situation in Stalin's Soviet Union also gave him the opportunity to synthesise the various disparate strands of thought on the problem of concepts. Vygotsky combined the gains of German philosophy as transmitted through Karl Marx with a critical appropriation of the tradition of experimental science, strongly represented in Russia at the time.

Finally, Part Five briefly develops what Vygotsky was able to give us, with further insights from Activity Theory, to answer the central question: what is a concept? This still leaves open innumerable projects for further research, but it is hardly possible to make progress with research on concepts without settling what a concept is, in a manner which makes sense for psychology, sociology, linguistics, philosophy and all the specific sciences which have taken an interest in this problem.

The Diversity of Concepts

A concept is generally understood to be a thought form which constitutes a unit of our knowledge of the world. Let us review the kinds of things of which we may have concepts.

Firstly, suppose you are sitting in the train, going in to work in the morning. Your mind is occupied perhaps with anticipating what awaits you at work. But as you sit there, buildings, crossings, pedestrians, clouds, domestic animals, advertising signs, ... flash by. You pay no attention to them and you have no control over them, but they do register at some level in your consciousness. One of the buildings is painted pink, and you wonder what sort of person paints their house such a colour. The sign for "Richmond" flashes by and you know there is only one station to go. ... These images which come before the mind, one after the other without even gaining your attention, are hardly what we have in mind when we speak of concepts. But in some sense they are also the simplest kind of concept, and perhaps we should be taking the seriality of syncretic thought forms as our starting point? Or perhaps we need to have a clearer idea of what we really count as a concept first?

These syncretic thought forms are not what we mean by concepts, and it can hardly be useful to take them as a *model*. Animals and human infants undoubtedly experience thought forms of this kind at least, but they have few of the characteristics that we will find to be characteristic of conceptual thought. But on the other hand, they *are* forms of thought, and in particular, there is reason to believe that they

not only form part of the early ontogenetic development of concepts, but that they continue to be part of the thinking of a healthy adult person. Arguments about border lines are invariably fruitless, so let us call these 'syncretic concepts', understood to be the stream of impressions which are not reflected upon and not under the person's control, but just passing by, so to speak.

Let us suppose you find an unusual object in a kitchen drawer and you have no idea what it is. So you phone up your partner and list its attributes: it's got black plastic handles, opens like a nutcracker, it's made of flat shiny metal and each arm has 7 or 8 curved, serrated edges. What is it? The very fact that you don't know what it is, you don't know what it's for, what it's called, who it belongs to and where it came from, is testimony to the fact that you have no concept of the thing, at least, no concept properly so-called. But in a certain sense, such a list of attributes, completely specifies the object and for some it is the very model of a concept. Let us accept that this bundle of attributes, this *description* of something, counts as a concept; it is not a true concept, but it is functionally sufficient for basic recognition and communication. Your partner responds by saying "Aha! You're talking about the cuisipro!" Your partner knows that the cuisipro is used for opening a wide range of jars and was invented for people with arthritis and belongs to your mother. Even if you don't know what a cuisipro is, you can at least talk about it: "Where's the cuisipro?" "It's in the top drawer."

This type of concept, which amounts to a description of the thing, I will call a "pseudoconcept," because it is not a true concept, but it is sufficient to allow you to talk about it with someone who does have a concept of it, with confidence that you are talking about the same thing. You both use the word with the same *reference*, but not with the same *sense*. Even though a pseudoconcept, as is implied by its name, is not a true concept, you would normally be able to recognise something by means of a pseudoconcept, before you had acquired a true concept of it. A pseudoconcept may go so far as knowing what something is used for, that is, its place in activity, and how the thing fits into the culture in its relation to other things. I will use the idea of pseudoconcept most generally as a kind of inventory of what can be *said of* something, and uniquely specifies it, but still does not get to the thing itself. Of course you must have the name for it if your concept is to have any stability, but knowing what a thing is called hardly amounts to having a concept of it either.

In general, it is likely that any of the concepts we acquire in everyday life, we will first encounter in the form of passing impressions (syncretic concepts) and descriptions (pseudoconcepts) before we have a true concept of them.

Let us reflect on the wide variety of things of which we may have a concept, and which a critical approach to concepts has to be able to account for. Just as familiarity with rat-racing is a poor basis for a claim to knowledge of human psychology, surely familiarity with the concepts people use to sort coloured blocks into sets is a poor basis for a claim to knowledge of the psychology of concepts.

Let's take 'the Moon'. In suitable weather, we can readily recognise it in the sky, and it can be defined as an individual thing – the Earth's only satellite (though the concept of 'moon' predates that of satellite by millennia), but such definitions do not convey the fact that all the people of the Earth since time began have gazed upon the Moon. As a result of this long history, the Moon has been at the centre of mystical beliefs about lunacy, fertility, plant behaviour, romance, its supposed attraction for water and its putative effect on people's emotional condition, its association with women and its place in the Copernican Revolution, scientific ideas about gravity and geopolitical struggles for supremacy between the USA and the USSR.

Let's take 'atom'. The concept of atom was known in antiquity while even in the late nineteenth century, many educated people did not believe that atoms really existed, regarding them rather as a mathematical construct, in much the same way string theory is regarded today. Nothing about the attributes of atoms, as they have been proposed at various times, and which are outside immediate sensuous experience, makes an atom what it is, even the very existence of atoms. 'Atom' is a concept utterly lacking in attributes. If we were to ascribe different attributes to atoms than those we know from natural science, we might be wrong, but we would not thereby miss the *concept* of atom, which predates the description of them by modern physics.

Let's take 'interface'. This concept entered the language from the defence industry which had acquired it from the electronics industry where engineers had been wrestling with the problem of 'interfacing' their computers with each other and with peripheral devices. It is now a concept in everyday life, but carries an aura of science and the implication that the things being 'interfaced' are self-sufficient systems which do not normally 'talk to each other'.

What about 'The Virgin Mary'? Doubtless a child raised in a Catholic neighbourhood will be able to point out Mary in the portraits in hallways and the statue in the local church. But it will take them a lifetime to acquire a true concept of the mother of Christ, a concept which underpins attitudes to relations between the sexes, family life, community, and a good life and which, along with concepts like the Holy Trinity, scripture, communion, sin, faith and so on, constitutes an entire way of life.

What about 'American'? Is it limited to US citizens or does it cover land, movies and social mores as well? When does someone become American? Is it to do with culture, ethnicity, citizenship or politics? Is it limited to WASPs or can Latinos and immigrants be American, too? Native Americans? And what about when the word is used by a French person angry at the intrusion of American commercialism, or with glowing pride by a redneck American patriot? And what has apple pie got to do with it? And are all these the same concept? or different concepts having the same reference?

What about 'space-time', a concept which originated in an esoteric branch of modern physics, though it is now widely referred to amongst the general population? Understood? Well, in some kind of way, but hardly in the way it was understood by those who were led to this concept by the surprising results of some experiments on light and gravity. And what about 'phlogiston', the supposed substance emitted by bodies when they burn? In the 18th century phlogiston was an integral part of the natural science of the time and used by all educated people to explain why it was hot near the fire; but now no-one believes that it exists at all, and the idea belongs only to the history of science. But we still have the concept.

What about 'differential', as in the 'dx' in: $\int e^{-x}.dx = 1-e^{-x}$? Anyone who has done high-school mathematics knows what it *looks like*, and even how to operate with it, but how many know the *concept* of the differential, as in: $\lim (\Delta x \rightarrow 0)\ \Delta y/\Delta x$, and so on?

What about 'horse', the animal *Hard Times*' Mr. Gradgrind demanded his students define by cataloguing the size, colour, number of teeth, and so on, of a horse. Does this kind of check box definition tell us how horses have accompanied human migration, war and settlement down the ages, mankind's companion and life-support, symbols of strength and nobility. And how all does this relate to the concept of a horse of someone with practical knowledge of caring for horses? Does the concept of 'horse' differ from that of 'donkey' only by the donkey's long ears and ee-aw? And what *is* the relation between

Equus ferus caballus and the cluster of meanings it has in human literature and history?

And concepts are by no means always things. An ‘ambush’, for example, is a kind of script, an event which presupposes certain circumstances, intentions and states of mind on the part of those involved. And the old favourite, that a tomato is a fruit not a vegetable. It was an Irish rugby player who said: “knowledge is knowing that a tomato is a fruit; wisdom is knowing not to put it in the fruit salad”? And Wittgenstein’s favourite: ‘game’: is ‘game’ a concept or just a polysemous word? It is concepts, not words, that is our topic here.

What about ‘seat’. How many legs does it have? What is it made of? It is used for sitting on, but is it still a seat if I use it for piling my books on? It is made for sitting on. But what if I use an up-turned apple crate as a seat, is it not a seat nonetheless? What about a key? Children can recognise a key very early, but do they know that a key unlocks mysteries as well as doors and may be made of brass but could be a series of numbers used to licence software. Does the child who knows what the key looks like, which door it fits and where to find it and pretty well everything that can be said of the key, really have the concept of key?

What about ‘the market’ or ‘the economy’ or ‘the monarchy’ or ‘the state’? Objects whose very existence depends on how people understand and act towards it, but are nonetheless as real as the ground we stand on.

And are concepts really ‘cold’ things? Objects of pure knowledge which are separate from emotion? Think of concepts like ‘intifada’ and ‘holocaust’. Is it possible to read these words without a rush of emotion? Do these words have any meaning at all separate from the baggage of hatred, prejudice and suffering that they carry?

I could go on, but it should be clear that everywhere we turn, new and challenging problems arise in simply saying what a concept is, far less getting started on a psychology of concepts. I will take it as read that the laboratory practices of getting people to sort blocks into groups or tick boxes on a word list are not adequate bases for a psychology of concepts, properly so called, even if such laboratory work can give us answers to some well-aimed questions. There is no reason to suppose that concepts like those mentioned above are ‘like’ concepts of common objects but ‘more complicated’? We need to be able to investigate not only syncretic concepts and pseudoconcepts of the kind described earlier, but trace the development of concepts up to and

including *true* concepts. The most important concepts originated in ancient institutions, have been honed through societal experience and passed on by elaborate forms of tuition and criticism. Real concepts are grounded in social experience, moderated through interaction. merging with the general culture of a community and used by people who are consciously aware and critical of the concepts they use.

Why Concepts Matter

The fragmentation of communities and the dissolution of social bonds which has become a pervasive characteristic of contemporary life has had its impact in philosophy and the human sciences generally. The critical review to follow will bring out problems in the theory of concepts which reflect this crisis in contemporary life. These issues will be dealt with immanently, rather than as a critique of ideology, but some general observations are in order to preface what is to follow.

It can hardly be a surprise to any social theorist that the natural scientific approach to the human sciences remains predominant in the psychology of concepts. Failing to grasp the character of humans as social beings who create their own ecological niches, such approaches can only serve at worst to advise marketing and the other industries of social control, or at best assist in the development of prosthetics. But this is hardly new.

The most challenging problem is that otherwise critical currents of social theory, in their quest to rid themselves of metaphysics, are turning to *interactionism*, but because interaction is conceived of without mediation, are abandoning the very idea of a concept. This turn in theory has the effect of reinforcing the disintegrating social tendencies which led to the error in the first place. All human interactions involve language and concepts, which are cultural and historical products, already existing prior to any particular interaction. Efforts to summon up concepts from interactions between individuals are simply an expression of individualism. Concepts are the pre-eminent social bond, in fact. Concepts are not just thought-forms but forms of social life. Efforts to reduce concepts to products of face-to-face interactions both reflect and promote a view of social life which is to say the very least poisonous.

Dualism has been around for a long time, and not only in the form of mind/matter dualism. One of the most persistent and debilitating forms of dualism today is the dualism of the *individual and society*, supported by sciences devoted exclusively to one or the other domain. Since concepts are units both of cultural formations and individuals

minds, a theory of concepts confronts this head on. Individual/society dualism springs from awareness of being an individual utterly powerless in a world governed by vast institutions beyond the horizon of friends and family, in which the individual has no more say than they have in the law of gravity or the orbit of the moon. Of course, the relative powerlessness of individuals in society is nothing new. Perversely, it is because of the presence of world affairs in the family home thanks to modern communications that this dichotomy looms so large in contemporary consciousness. Once again the institutionalisation of this dogma not only reflects an aspect of our plight, but consolidates its hold over us. The development of the human sciences along two parallel paths, one concerned with human consciousness, the other concerned with social and political phenomena, can only serve to place barriers in front of people's efforts to intervene in the affairs determining their own life. By understanding concepts as units of both consciousness and the social formation, I aim to create a counter to this disempowering dogma.

The mind/matter dualism of days gone by, nowadays takes the form of *brain/world dualism*. The location of the self in one organ of the body has become a universal dogma. Science journalists talk about brains talking to one another and MRIs giving images of thoughts. Brain/world dualism promotes a vulgar materialism which is in turn a justification for cynicism in public life. This pernicious doctrine requires for its support the prejudice that concepts are just 'more complicated' versions of the reactions of animals, and a critical theory of concepts can tackle this claim head on.

The market is probably the most powerful and most characteristic institution of our times, but we also live in exceptionally bureaucratic times. Our lives are dominated by bureaucratic procedures which oblige us to endlessly tick boxes on survey forms and ballot papers, fill out loan applications while legions of market researchers categorise us into endless demographics and niche markets. This leads to the dominance of *formalism*. Formalism has long been the dominant mode of thought, but the ubiquity of bureaucratism in our lives has made the 'art of handling concepts' a lost art. Concepts do not fit together like the tiles of a mosaic, and nor can they be categorised into various types. They refuse to behave as if they were entities of any kind, even with blurred edges. These troublesome facts are often taken as reasons for abandoning the whole idea of concepts. Tackling this problem will be a major objective of this work and it is

to be hoped that a critique of formalism in theory will contribute to the real criticism of bureaucratic institutions.

Goethe said: "The history of science is science itself" (Goethe 1810/1988: 161). He understood that the history of a science is not simply an explanation of what the science contains, but the only means by which the objects and concepts of the science can be grasped. Once the concepts of a social formation are taken, not as fixed, fast-frozen relations, but as processes of development and realisation, then the whole formation is open to critique.

So much for the social roots of problems in the sciences of concepts. In what follows, I will review the current theories of concepts, so far as possible, in their own terms. But I will treat disciplinary boundaries with cavalier disregard. Whether viewed from psychology, logic, history, social theory, anthropology or linguistics, there is something called a 'concept' and I believe that it can only be grasped by approaching it from multiple points of view and this I intend to do, as best I can.

Part I. Contemporary Theory

Chapter 1. The Psychology of Concepts

Theories of the psychology of concepts are as diverse as psychology itself. But I will limit myself to a fairly general review of the most well-known theories, and without paying attention to the evolution of the views of particular writers.

The dominant trend of the psychology of concepts in the Anglophone world at the moment is the American current which originated from the Cognitive Revolution of the 1950s with people like Jerome Bruner, Jacqueline Goodnow, George Austin and others. The most well-known names in recent work on concepts are Eleanor Rosch, Douglas Medin, Lawrence Barsalou, Edward Smith, Gregory Murphy, Susan Carey, Eric Margolis, Stephen Laurence and the philosopher Jerry Fodor. There are others who have reacted critically to this current, and I will come to these later.

These writers seem to agree that nothing was known of the psychology of concepts prior to the Cognitive Revolution, and apart from gestures to Gottlob Frege, Ludwig Wittgenstein and Plato, nothing of value had been established in the science beyond their own work. Even though they are rediscovering ideas which are centuries old, the *laboratory methods* of investigation they have brought to bear on the theory of concepts are novel and have brought about a rapid turn-over in theories of the concept.

The Psychology of Concepts (when I use capital-P and capital-C I am referring to the current of Cognitive Psychology) locates itself squarely within the traditions of experimental natural science and a variety of analytical philosophy which accepts a naïve variant of Cartesian dualism. (Natural scientists always strenuously deny their Cartesianism, but usually because they know only a caricature of Descartes' position. Misunderstandings often hinge on taking the word 'substance' in the vulgar sense of referring to some kind of stuff or simply failing to grasp the categorical difference between consciousness and matter). Although a number of different theories have been developed, a common philosophical base has meant that this group of investigators share a number of key assumptions.

The first of such assumptions in the Psychology of Concepts is a pervasive Cartesian dualism, for example, Gregory Murphy says in the introduction to "The Big Book of Concepts":

> In general, I try to use the word *concepts* to talk about mental representations of classes of things, and *categories* to talk about the classes themselves (2004: 5).

And the identical form of words is used by Medin, Unsworth, and Hirschfeld in their contribution to the "Handbook of Cultural Psychology" (Medin et al, 2007). It is taken as given that concepts are mental representations, that is, that concepts are entities or images of some kind inside the head. So we have two distinct worlds: a world of mental objects and a world of material objects. It is further assumed that these concepts sort objects in the material world into categories, with each object individually isolable in some unspecified way prior to being grouped into categories. The field of investigation is thereby narrowed to deal only with those concepts which can be adequately represented by the process of 'pigeon-holing' things, as we say, in the hope that this can be usefully extended to the solution of more realistic problems.

The second assumption is that the objective world is arbitrarily atomistic, being composed of individual entities, and further that these individual entities in turn can be conceived as objects which are exhausted without remainder by their attributes (or 'features'). Some writers observe with some curiosity that their experimental subjects, on the contrary, seem to believe that objects have an essence transcending their contingent attributes. Ruth Millikan put it well when she said: "A dog is a member of the species dog because it was born of a dog, not because it is like other dogs" (Margolis & Laurence 1999: 525). One could just as well have said that the President is not President because he looks presidential, but because he was elected.

Generally speaking, these writers accept that people acquire concepts through social experience, but in line with this whole current of thinking, in their experimental work, they strive so far as possible to isolate their subjects from their normal living conditions and create laboratory conditions artificially insulated from social life. The view is that even if people have acquired the concepts they have in the course of life experience, that has no significance for the nature of the concepts themselves and there is no suspicion that tests carried out in the laboratory using made-up concepts will fail to reproduce what is essential to the psychology of concepts. But does the means a person

uses to make a selection in a multiple-choice questionnaire reflect the way they act in the course of some social interaction?

Finally, for this current of cognitive psychology, the archetypal concept is the concept of a thing, typically an artificial object with no special social significance, which can be exhaustively described in terms of its visual properties, or a common artefact or a natural kind, depending on what the researcher is trying to prove. Everything that is to be learnt of the psychology of concepts is to be developed from such models. As Gregory Murphy put it:

> Although the field (and hence this book) concentrates on common object concepts, the principle involving concept formation and use are thought to be to some degree generalizable across different domains and settings (Murphy 2004: 3).

So, essentially we have a theory of object-categorisation, rather than a theory of concepts. Consider for a moment how far the practice of pigeon-holing reflects the understanding of concepts like those mentioned above. Categorisation is relevant only at the margins, when, pressed to make a categorisation decision, you seize upon some criterion to be made the litmus test in the immediate instance. But locating the border lines of a phenomenon does *not* tell you about the concept of the thing itself. For example, if you were to show a subject a series of figures graduated from a circle to a square with rounded corners of successively smaller radius, you could determine at what point subjects took the figure as a square and ignored the rounded corners. But such figures do *not* give us the concept of a square, a figure which has *no* rounded corners, even minuscule ones. You could take a statue of the Virgin Mary and mess around with her features until it was no longer recognisable by a Catholic as a representation of the Holy Mother. But this gets you no closer to the concept of the Virgin Mary. Exploration of borderline cases does have points of interest for psychology, but these need not concern us here, because borderline cases do not shed very much light on the psychology of concepts. Even when the exploration of borderline cases allows us to identify the feature which the subject is taking as definitive, we can do no better than replace the problem of the entity with the problem of the feature and thereby enter into an infinite regress. For example, if people judge the quality of fruit by features such as size, colour and freedom from blemish, they may well select fruit which has been subject to irradiation and hormone injections but are of poor quality.

We often rely on inessential features as fallible guides to what we know to be essential.

The world is not only seen atomistically, but as *arbitrarily* atomistic, because no justification is ever given for what is taken as the units of analysis in any particular study. In one study the minutiae of calligraphy distinguish the digit "1" from the 12th letter of the lower case alphabet and the 9th letter of the upper case alphabet. But in another study, "1" is a simple concept, while in yet another study, the number 1796 is taken as a "chunk" and may be treated as an atom, rather than each of its 4 digits. Why not take every dot from the laser printer as the unit of analysis? Why an entity may be taken to be the composite of elements of some arbitrary size is never discussed. And yet the *whole problem* is contained in the selection of what are taken to be the units of analysis, or 'chunks'. And in fact the most important aspect of cognition is just this: what do people take to be the essential units in a given instance?

The Classical Theory of Concepts

The Psychology of Concepts needs to be understood in terms of its own origins myth. According to Cognitive Psychology, from antiquity up to about 1970, the psychology of concepts was generally ruled by what is called the "Classical Theory of Concepts" and the contemporary Psychology of Concepts originated from the collapse of the Classical Theory. [*]

The Classical Theory is the theory of concepts which is embodied in a simple dictionary, that is, that every concept is given by its definition. A word is taken as the sign for a concept, and the meaning of each word is explained in terms of other words. In their interpretation, the definitions of the Classical Theory specify the necessary and sufficient features of any thing coming under the definition, potentially arranging words in a hierarchical taxonomy. So according to the Classical Theory, when a person uses a concept, they do so having the dictionary definition of the concept in mind, and likewise, interpret their perceptual field by reference to this internal dictionary. The question was just "How?"

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[*] I shall not examine the "Classical Theory of Concepts" as a current in the history of philosophy at all. I am concerned only with the role the idea plays as a foil for the Psychology of Concepts. When I look at the history of philosophy in Part 2, I will not touch on this idea either.

The first problem with this as an approach to a psychology of concepts is that an internal dictionary may be fine in so far as you are already fluent in the language and have acquired all its basic concepts and your internal dictionary is filed away in your brain. Two questions immediately arise. Firstly, the underlying 'atomic' concepts in terms of which other words are supposed to be explained are what are really of interest in a psychology of concepts, but it is these which are left unexplained, or consigned to an infinite regress. The Psychology of Concepts supposes that 'composite concepts' can be composed through the intersection or union of these 'atomic' concepts. But no dictionary, whether psychic or material, works like that. A dictionary structured like Linnaeus' *Systema Naturae* is a convenient fiction. The claim that a concept is given by its definition is not at all the same as the claim that a concept is given by its position in some hierarchical *Systema Artificiae et Naturae*.

But secondly, a look into dictionaries soon makes it evident that dictionaries which simply provide definitions give the reader no real idea of the concept. Only those vast works like the 20-volume Oxford English Dictionary which give multiple meanings replete with quotations, and etymology can bring you close to a real understanding of the concept and such dictionaries do not suggest a hierarchical categorisation scheme.

Eleanor Rosch (Murphy 2004: 16) discovered that people who knew a concept and were quite definite in classifying objects under a concept, when asked, were often unable to define the concept, or did so inconsistently. At any rate, people could categorise objects under a concept far more quickly and reliably than they could give a verbal definition of the concept. Moreover, it was found that different people at different times would give different definitions, and experts (especially) would fail to agree on how to define concepts which people readily applied in categorisation tests. Few real-life definitions could be found that lacked internal contradiction, inconsistency, ambiguity and 'fuzzy edges'. This result served to put an end to an idea that people consulted some kind of internal dictionary or look-up table in order to solve categorisation tasks. Thus, whatever the classical theory represented, it did not represent the psychological reality of giving verbal responses to categorisation tasks. The tests sufficed to produce this negative result, but the failure in producing formal dictionary-like definitions of a word, or completing any such formal literary task, in a laboratory setting outside the context of everyday life, could never have given any real insight into the

subject's ability to use concepts. It only proved that people's knowledge of and facility with concepts is *not* mediated by an internal dictionary. Nonetheless, the results challenge us to explain exactly *how* people *do* solve categorisation tasks, and beyond that, how people acquire, recall and use true concepts, something quite different from solving categorisation tasks in a laboratory. Despite all the attendant confusion in the conception of the 'Classical Theory', this is a salutary observation.

The inability of subjects to provide consistent, stable and clear definitions replicating a systematic taxonomy, though, is not a problem of psychology. It is in the nature of *the concepts themselves*. Or I could say, the problem lies in the object, not the subject. As Gregory Murphy points out, it is well-known to lawmakers and those in the judiciary that it is impossible to frame a law that will not sooner or later run into ambiguities or self-contradiction, and as laws are subject to endless revision and interpretation, a time never comes when that ambiguity disappears. When lawmakers and judges set down the principle of justice that they intend, no amount of definition of terms, qualification and explanation can reliably represent their concept. Tests (Margolis & Laurence 1999: 444) involving novices and experts in the sciences showed that the concepts of experts were fuzzier than those who actually knew nothing about the topic; the more developed the concept, the fuzzier the boundaries. All this goes to show that there is more to any concept worthy of the name than can be set down in a few dead words. This is not a problem of psychology, it is *in the nature of concepts themselves*. Concepts are not pigeonholes and concepts which conformed to expectations of these researchers would be very poor concepts.

The reference of a concept to a dictionary definition is but one aspect of a concept, and can only be tested by means tailored to that task. Laboratory categorisation tasks are not suitable means for exploring this aspect of concepts. Over and above this, dictionary definitions are rarely set-theoretical catalogues of the contingent attributes of things. To believe otherwise is to misunderstand the so-called Classical Theory of Concepts, insofar as any such a theory ever existed in psychology.

Also, were we to accept that as thought-forms, concepts can be entirely accounted for within psychology, then there could be no logic, no mathematics, no science, and in fact life would be nothing more than some kind of solipsistic dream. Concepts have a content which is

objective, and insofar as concepts reflect the material world, they will be inconsistent, unstable and contradictory.

When Kant (2007) showed that the "Antinomies of Reason" – concepts such as free will, the infinite divisibility of matter and the boundedness of the universe – fell into contradiction with themselves, he claimed that this was because the concepts went beyond the bounds of possible experience and were therefore meaningless. Hegel (1816/1969) responded however by showing that, not just four, but *all* concepts eventually fall into self-contradiction. Hegel showed that "There is absolutely nothing whatever in which we cannot point to contradictions or opposite attributes" (1830/2009 §89). Concepts inevitably overflow their own boundaries, but it is not really a problem with definitions, for it is in the nature of concepts themselves to fall into self-contradiction. "Zeno, who first showed the contradiction native to motion, concluded that there is no motion (1830/2009 §89). But Zeno was clearly mistaken: motion is real, but it is contradictory nonetheless.

So, the fault of the Classical Theory here is only that it reproduces the very 'problem' which is inherent in concepts themselves. Hegel argued against Kant that such contradictions should not be regarded as failures, but rather that they simply express the vitality of concepts. Consequently, any attempt to eliminate this falling into contradiction and overflowing of its own limits, can only serve to kill the concept, which is exactly what a dogmatic insistence on rigid, unambiguous definitions achieves. But on the other hand, if instead of recognising this tendency to overshoot their own boundaries as something in the nature of concepts themselves, we seek to avoid such contradictions by abandoning definitions and steering away from the classical theory of the psychology of concepts, we shall inevitably *miss the concept* altogether. Either way, we will fail to understand concepts. This was the result when recent investigators in the Psychology of Concepts wrongly interpreted the failure of *their interpretation* of the Classical Theory as a problem of *psychology*. Nevertheless, by testing out the psychological reality of the Classical Theory using laboratory methods, the modern Psychology of Concepts produced results which are of interest in their own right.

One of the problems with the cognitivists' critique of the Classical Theory was that they took it for granted that the conceptual world adheres to a hierarchical taxonomy in which things can be defined according to a list of attributes, which conjointly determine whether any given object is in or out of the category. In the light of the review

of concepts I gave in the introduction, this is an excessively restrictive assumption. It is particularly suited to laboratory work though, despite focussing attention on boundary problems rather than the core or essential issues. Set Theory propositions of the form "all *x* are *a* & no *x* are *b* etc., etc." are taken to be how the mind holds knowledge about the world. When the Classical Theory lost support among psychologists, they still hung on to similar conceptions such as 'Fuzzy Set Theory'. Even visual images were taken to be a means of encoding of look-up tables of features. The abandonment of the Classical Theory without any revision of the atomistic, dualist and abstract world-view underpinning the cognitivist interpretation of the Theory, meant that they turned their backs once and for all on any theory which could cope with true concepts such as those listed in the Introduction.

If we let go of the idea that Cognitive Psychology is some variety of Psychology, and instead regard Cognitive Psychology as a branch of Engineering Science, then all this makes abundant sense. But then surely Cognitive Psychology loses its very *raison d'être* if it stops paying attention to what is distinctively human and unlike a machine in human behaviour? If so, then Cognitive Psychology needs to learn more from the humanities, rather than simply ignoring the very characteristics that they want to investigate.

Some Reflections on Aristotle

Before moving on to the theories which Cognitive Psychology produced from its critique of the Classical Theory, it is worth mentioning Aristotle's view of concepts, because Aristotle is often cited (Murphy 2002: 39) as a proponent of the classical theory of the psychology of concepts. Such a claim would be absurd because Aristotle did not have a theory of psychology in the modern sense; his concern was how the world itself was constituted, and he took it for granted that the structure of the mind was the structure of the world as grasped in language. So Aristotle's theory of concepts took the form of an examination of the categories of things that exist in language and the world. According to Aristotle, the world had subjects (ultimately substances) and predicates; the predicates were what could be said of subjects. The subjects themselves were irreducibly just what they were, whilst the various predicates which could be said of them were contingent attributes. He thus made from the outset a clear distinction between a subject and those attributes which may or may not be attached to the subject, without affecting what it is, its *essence*. What

is required of a theory of concepts is precisely this, to see past the contingent attributes of a thing, to get to its essence, to the *concept* of thing. And it is precisely this which is systematically ignored in the Psychology of Concepts. According to Cognitive Psychology, when all the attributes of something are taken away, there is nothing left. This accords with many contemporary philosophies, such as post-structuralism, but not with science and not with Aristotle.

Talk of 'essence' may be troubling for people who are accustomed to taking it that things are exhaustively determined by their attributes, but this discomfort is really unwarranted. According to the cognitive model in question, the essence of a concept would be some combination of attributes which are deemed to be core or non-core, i.e., essential or inessential, possibly including its place within some social relation, or social practice. Every real thing has contingent attributes which are inessential to it being what it is, and on the other hand, something which makes it what it is, and this essence, in the great majority of non-trivial cases, is not given in the perceptual field.

The philosopher, Ruth Millikan (Margolis & Laurence 1999: 525), has an interesting take on Aristotle's theory. A 'substance' is a fundamental component of the world, and according to Aristotle, as a citizen of ancient Greece, the substances were individual things (e.g. Mama), natural kinds and kinds of stuff (e.g., dogs and water). These are the various things which are irreducibly what they are and which "something can be said of." This apparently rather chaotic collection of categories is also a fair representation of the ontology of the infant mind. On the basis of her interpretation of Aristotle's categories, Millikan makes a critique of the dominant psychology of concepts for which concepts are nothing but contingent attributes. Aristotle also counted as substances the 'natures' or 'essences', which he took to be 'that towards which a thing moves', and it seems odd that Millikan has passed over this third kind of substance, since this is more general than her own explanation of the nature of things. Millikan holds that concepts are not constituted by the bundle of attributes we ascribe to them, which are simply means of recognising them, whilst the real ground of a concept is "knowing how to use a thing" (Margolis & Laurence 1999: 530). Whilst this capacity may be acquired socially, her approach is otherwise rather strongly biological. Millikan's is a useful critique of the cognitivist interpretation of the Classical Theory.

The Psychology of Concepts should be credited with proving that definitions of concepts have little or no psychological reality in people's immediate interactions. Accessing the lexical definition of a

concept is a higher order psychological function and the reproduction of such a definition is a task of a yet higher order. A definition expresses the place of a concept in an infinite semantic network, not a hierarchical taxonomy, and just like the real world, concepts and their definitions are mobile, unstable and internally contradictory. There is every reason to think that such dynamic semantic networks have a place in the understanding of concepts, and must therefore be indispensable to understanding their psychology.

Prototypes, Exemplars and Ideals

Following up their critique of the Classical Theory, Eleanor Rosch and Carolyn Mervis proposed what is known as the Prototype Theory. Whereas the Classical Theory adopted a model of categorisation along the lines of a Linnaean taxonomy, the Prototype Theory uses categorisation theories based on a typology of distinct clusters of concepts rather than a hierarchical taxonomy. Here it is presumed that a person has in their mind, not a universal definition, but a mental representation (i.e., concept) of an *individual* thing which may be most typical or ideal or perhaps the original *individual* representative of a category of things. All other things are included or not included under the concept according to how much they *resemble* the prototype. This idea has the apparent merit that it allows for the concept to be held in the mind in just the way any individual thing given to the senses is apprehended. There is good reason to argue that all recognition entails individual phenomena like this in some way, rather than noumena. It also explains the observation, which was inexplicable under the cognitivist interpretation of the Classical Theory, that some things were *more typical* of the category than others, as well as borderline cases and so on. These phenomena of typicality can be better reconciled with a model in which a category is defined by a single instance, than in the supposedly all-or-nothing criteria of a lexical definition.

Rosch *et al* were able to demonstrate that this approach had psychological reality in the sense that the so-called Classical Theory did not. Like any good scientific theory, the Prototype Theory immediately opened up a lively field of research, as people searched for prototypes for different concepts under different test conditions, mapped degrees of typicality in terms of attributes, core and non-core attributes, and so on, especially under the conditions of *instant response*, rather than reflective thought. Instant responses are deemed to demonstrate what is ‘really on your mind’, whereas once a person

begins to think about the problem, the question becomes more complicated, and incidentally, of less commercial interest. Whichever way we go here, it seems that instant responses to either categorisation or definitional tasks manifest a psychological function which differs from reflective responses, and differs again from the socially mediated responses which constitute the real life of concepts.

It very soon emerged however that the typicality phenomena pointed not to one prototype in most cases, but a family of *exemplars*, and thus emerged the Exemplar Theory. The Exemplar Theory uses a model of categorisation somewhat like notions of genre. The field of phenomena falling under a concept, the concept's 'extension', contains a number of exemplars which may be of quite different kinds and bear no particular systematic relation to one another (on the contrary in fact), but together mark out a field. With time and experience the number and variety of exemplars which are recognised under the concept grows and the person's knowledge exhibits corresponding maturity and stability.

George Lakoff (Margolis & Laurence 1999: 398ff) has an interesting take on the idea of exemplars and prototypes. Rather than seeing them as bundles of common attributes, Lakoff sees prototypes and exemplars as 'cognitive models', illustrating this with a variety of definitions of motherhood (biological, nurturing, adoptive, genetic, protecting, etc.) each with its own *ideal* of what it means to be a mother. Here the same universal symbol is associated with different 'definitions' and correspondingly different expected bundles of attributes as exemplars.

This is not dissimilar to an interesting phenomenon which turned up in work on prototypes and exemplars: that subjects often had an *ideal* of the concept which did not pass as a typical instance of the concept, but rather one which was ideal in terms of the person's professional or otherwise practical relation to the concept (Medin et al, 2007). Objects would then be judged better or worse instances of a concept according to how many of the features of the ideal they exhibit. This implies that the features which exemplars manifest do not reflect typicality in an abstract, contemplative sense, but rather practical, teleological relations to the object, relations that were implicated in some *system of practice*. Where no such motivated relation exists, then the ideal would become by default, a vague and unstable Galton composite of some kind.

Another interesting observation arising from this work is the idea of the 'basic level'. In the hierarchy of generalisation from most

particular to the most general (for example: Featherston, armchair, chair, seat, furniture, goods) there is a level of generalisation which is "the highest level at which a single mental image can represent the whole category, and the level at which most of our knowledge is organised" (Lakoff & Johnson 1999: 23). I remember a comedian once explaining how *never* to use the basic level in referring to common objects: refer to your car by its make and model, where you are by the actual street name, what you're eating by a brand name and visual description, etc. The comic effect arises from the resulting cognitive dissonance.

All these ideas produced fairly robust experimental results, but do they say anything at all about concepts? It seems that they tell us about how people recognise an object as of this or that kind before they have had a chance to think about it, a problem which the so-called Classical Theory was not in a position to explain. But it is also quite possible that such representations also play a role in reflective and incidental thought. They also make sense of the phenomena of typicality, which in the absence of any understanding of concepts other than that offered by boundary conditions also seemed inexplicable. But it remains at a level suitable for displaying goods on supermarket shelves or programming robots, but unsuitable for understanding human cognition. The Pope is the Pope perhaps because he was elected by the Cardinals, because he is God's representative on Earth or because he is head of the Catholic Church, but *not* because he wears that big hat by which you can pick him out in a crowd. Whilst escaping from the logical difficulties posed by the cognitivist interpretation of the Classical Theory, cognitive psychology has lost the concept of concept altogether, building instead a theory of object-categorisation. *Not the same thing*. A child can correctly sort the pieces of a chess set into groups without the slightest understanding of the concept of chess or its various pieces. Further, the underlying assumptions have remained the same: a world of psychic images mirroring a world of things through phenomenal similarity based on bundles of features.

Theory Theory and Semantic Networks

A more recent theory which has been produced by this current of Cognitive Psychology is what is called the Theory Theory. A concept, it is said, draws meaning from the context of a larger theory of which it is a part. This opens up the possibility to get away from uncritical dualism, in that a concept is now "picking out" objects from a field of

perception which may be already conditioned by a theory which is mediating perception. This not only brings us closer to Kant, but also brings into play the work of people like Thomas Kuhn, Edwin Hutchins and Bruno Latour who have studied the sociology of knowledge. But it is by no means necessary to presume that a person has a 'theory' in the sense of a theory of natural science. Every person perceives the world through the lens of their own, personal ideology, so to speak, which conditions their expectations for what they expect to find in any given situation. Social theory reflects social practice. Further, following Stephen Toulmin (1972), I would say that we do not need to follow advocates of the Theory Theory in positing a comprehensive theory of everything in a person's psyche. It is enough that a person has some conception relating some phenomenon to a larger set of phenomena, or can create one when confronted with a novelty. As diSessa (2006) has pointed out, people characteristically understand the world through an eclectic mixture of 'theories' even if in their own professional work they use an institutional system of concepts. This opens the possibility of approaching a concept 'from above', so to speak, from the system of which it is a part, as an alternative to the former approach 'from below', by building the concept up from contingent attributes or bundles of features.

From this promising start however, Cognitive Psychology reverts to type. A subject recognises an object according to its attributes, but the attributes it expects for objects of a certain kind are given by the relevant theory rather than some other theory, that's all. A person recognises the little fluffy birds following the big duck around as baby ducks, even though they've never seen ducklings before, because they know about creatures having young which are smaller and cuter, etc. So again we miss the concept, because the problem of a concept of duckling is replaced by features and categorisation rules. Nonetheless, the introduction of the idea of a category depending on the use of a more comprehensive theory of the objects and categories in the field is a step towards mediation of categorisation tasks, and consequently a step towards a real study of concepts. It is to be hoped that further work in the field will begin to ask questions about where theories come from and how are they acquired and sustained? what mental form does a theory take? why is one theory rather than another evoked and brought to bear in some circumstances but not in others? how does a theory suggest attributes? and so on. The Theory Theory does answer some questions, but it asks more questions than it answers.

Implicit in the psychology of concepts as developed by Cognitive Psychology is that perception of any object is necessarily the sum of perceptions of simpler features. However, evidence to the contrary comes from Gestalt Psychology, numerous optical illusion experiments, and phenomena such as our ability to read past typographical errors and even absurd jumbling and distortion of the letters of words. Evidence also comes from child development which shows that infants can perceive only general impressions and the ability to differentiate objects and from their background is only gradually achieved as the child develops. And even if we lay to one side the mistake of taking the perceptual field as the sum of "pixels," it remains the case that problems of perception still do not go to the psychology of concepts properly so called. The overwhelming majority of results reflect responses people have given in the laboratory to tests using word lists. This is a very limited domain of activity, albeit one appropriate to life in a post-industrial bureaucratic/capitalist society.

The contribution of the Theory Theory was to reflect the fact that we recognise something because we have an *expectation* for it before we discern any of its features. The idea of having a theory of a process which would allow you to fill in a blank is not restricted to what would normally be seen as a 'theory'. *Connectionism* is the idea that concepts are nodes in an extended semantic network and the use of any concept 'activates' other concepts which are 'near' to it on this network. For example, the mention of 'kitchen' activates relevant concepts so that when we hear the word 'knife' we think of a kitchen knife not a hunting knife. Such a *semantic network* is a way of visualising a theory at the simplest possible level, which explains how a concept can be approached 'from above', rather than 'below' by adding up its perceptual features.

What has been Learnt from Analytical Approaches

Despite the conceptual problems with the mainstream Psychology of Concepts, their ideas have been the framework within which a great deal of experimental work has been done. Many of the results are of interest.

The critique of the Classical Theory, for example, established that in the case of everyday concepts, definitions have no psychological reality; people do not 'consult' lexical definitions when they use such everyday concepts, and usually cannot even produce a rigorous definition given time for reflection. It seems that such concepts are

generally learnt and understood in use, not from a lexical definition. As Rey (Margolis & Laurence, 1999: 296) pointed out, the most familiar example of this fact is that native speakers of a language may use it perfectly with no knowledge of the rules of grammar. But we still have no reason to believe that academic concepts like 'tensor' or 'prolepsis' are used without first acquiring a definition. In any formal institutional setting, it is far more likely that use and acquisition of a concept entails definitions, than would be the case with everyday concepts which are originally acquired by spontaneously conforming to semantic norms while interacting with others. Learning to define concepts is a high level psychological task, generally demanding language skills not called upon by use of the concept. It is not necessarily the case that everyday concepts and technical concepts simply lie on opposite ends of a continuum of some kind. Perhaps they are of qualitatively different kinds, or are pure types of which all concepts are hybrids in some way? Or perhaps the distinction simply reflects the social and institutional context?

The observation that arose from the cognitivist critique of what they call the 'Classical Theory of Concepts', that concepts in general do not have clear and unambiguous definitions, and that any concept sooner or later falls into contradiction with itself, coming from *these* writers, firmly situated in the analytical tradition of philosophy, is immensely helpful. Even though 50 years ago Stephen Toulmin (1953) had told us that Formal Logic did not reflect how science worked, and Hegel had told us 200 years ago that all concepts inevitably fall in to contradiction, there is considerable resistance to this idea within the analytical tradition. But it has not stopped the cognitivists from taking formal symbolic logic (which is blind to the internal contradictoriness of concepts) as the gold standard for reason both as a psychological function and as a research method. The cognitivists took the observation that people do not adhere to the laws of symbolic logic in their thinking as a *psychological* discovery, rather than as reflecting an objective limitation on the scope of symbolic logic.

Even if the Prototype and Exemplar Theories have yet to provide an adequate description of concepts and their typicality effects, the evidence that prototypes and exemplars provide a good model at least for *reflex categorisation* is useful. It seems that the mainstream Psychology of Concepts is moving inexorably towards some variety of the Theory-Theory, some 'top-down' conception of how the mind holds an array of concepts which are activated by sensuous-practical

interactions. However, so long as it is tied to the model of a concept as a bundle of attributes, even with core/periphery distinctions, it can make little progress. The observation that prototypes and exemplars may represent a practical *ideal* for people, according to a special interest they may have in some field of activity is of particular note, since it introduces into the process of concept formation a person's participation in relevant forms of social *practice*, as opposed to exposure to experience.

The problem of getting beyond 'descriptivism' is posed quite well with the problem of gender identification: Medin et al introduce the idea of "psychological essentialism,"

> People act as if things (e.g., objects [and people]) have essences or underlying natures that make them the thing that they are. ... For example, people in our culture believe that the categories male and female are genetically determined, but to pick someone out as male or female we rely on characteristics such as hair length, height, facial hair, and clothing that represent a mixture of secondary sexual characteristics and cultural conventions (Medin et al 2007: 8).

This problem is a rock on which many theories of society and psychology have broken. Even if there is no final or unambiguous essence, even if we have to take essence as a process rather than an entity, *the distinction between essence and appearance is indispensable* for a theory of concepts. We need a theory of essence as a socially constructed process, rather than a metaphysical entity as it had been for Aristotle. To abandon any concept of essence in favour of phenomenalism leads to absurdity. What after all is the difference between a Van Gogh and a very good fake?

The Problem with the Analytical view

The idea of cognitive psychology is that the human mind can be modelled as an information processing machine: the mind acts *as if* it were executing an information processing function.

In itself this is an undeniably powerful approach to understanding the psyche. However, it is the baggage which comes with the model which undermines the potential benefits of this approach. Machines do not exercise free will, lust after others, experience loyalty, guilt, hatred or fear, have intentional dispositions or friends or *understand* what they are doing. So in order to model some human function as a machine function it is first necessary to *construe* the given function as something which a machine could do. Human functions which cannot

be modelled by machines, such as free will, may even be deemed to be illusions to legitimate the approach. Consequently, what is modelled is never a human function, but rather an outwardly humanlike machine function.

Secondly, the main function of the mind is for human beings to manage their own relation to the world, but since machines cannot do this, the operator manages the machine-world interface for it. Among other things this means that every internal operation has to begin from an input which the operator controls. Thus we have the absurd and unjustified dogma that every operation of the mind begins from arbitrarily small "chunks" of information. There is no foundation for this in human biology, let alone psychology.

Many cognitive psychologists would acknowledge that people can massively improve psychological functions by the use of cues from the world around them. For example, memory can massively exceed its natural limits if the subject is presented with some system of reminders connecting the stimuli. But it never seems to occur to them that these systems are an integral part of every person's normal cultural environment and that the psychological functions which people exhibit in real life reflect the cues embedded in their cultural environment rather than the underlying natural functions.

The result is a guide as to how a machine could be programmed to do outwardly humanlike things. The knowledge of psychology exhibited by cognitivists is often naïve. For example, introducing the section on knowledge, Lawrence Barsalou characterises education as the "teachers provide information that students incorporate into existing knowledge" (1992: 152) apparently blissfully unaware of all the problems which torture the minds of educational psychologists. This is not dissimilar to the knowledge of psychology exhibited by some neuroscientists. The workings of the mind are outside their subject area. And the same goes for most of the cognitivists' contributions to linguistics, pragmatics, anthropology, political science and so on: the degree to which a machine can participate in the relevant practices is extremely trivial, and observations about the topic based on the machine metaphor are correspondingly trivial. Nonetheless, the idea of modelling the mind as an information processor remains a worthwhile project for engineering purposes.

It has been necessary to spend some time examining the psychology of concepts as developed from the standpoint of analytical science partly because this view corresponds broadly to educated 'mainstream' consciousness in the English-speaking world. The view

to be developed here, on the other hand, may be rather confronting from this point of view.

To give experimental subjects a series of categorisation tasks, ticking boxes on a survey form: "Is a car seat furniture? yes/no. Are curtains furniture? yes/no," tells us nothing about the subjects' concepts, but a lot about the concepts of the researchers and their mode of activity. The idea of seeing the world, whether psychic or material, as made up of discrete elements, which have only to be sorted into groups and counted in order to make a decision, is deeply engrained in contemporary culture. Even our system of government is organised along these lines. Any other approach may have difficulty finding a place in today's academy, especially if it cannot be fitted into just one department. The fragmentation of science has gone way beyond division of labour, since division of labour presupposes at least some form of cooperation, exchange and shared objectives. The branches of science today have developed such distinct views of the world that they do not even ask questions, the answers to which would be of interest to those outside the discipline. Universities are organised along lines resembling Set Theory with an intellectual life that increasingly resembles niche marketing.

The Psychology of Concepts, as it stands, has collected data about how people recognise things and categorise them, but it has no theory at all about concepts. As Medin et al (2007: 18) point out, even if people pick out the same entities with the same category, this does not at all mean they have the same concept, as the sense might differ widely while reference remains constant. Categorisation is not conceptualisation. In first reducing the Classical Theory to a view of concepts as a catalogue of 'features' and then dismissing it, this current of thought has lost track of concepts altogether and deals only with responses to artificial, laboratory-based, categorisation tasks. As Smith & Medin put it:

> categorization theories relying exclusively on similarity relations are insufficient to provide a theory of concepts. We have argued that a coherent concept is one that we have a good theory about and that fits well with our other knowledge. ... Future research on concepts and categories can help answer these questions [about concept acquisition] not by controlling the effects of world knowledge and experience, but by exploiting them – by bringing the concepts into contact with the whole cognitive system that created them (Margolis & Laurence, 1999: 455).

The fact that I can quote these same writers in making these points is evidence that these problems are indeed immanent in the practice of this science. But how can they be resolved?

Lakoff and Johnson made an interesting observation about what properties of a gun make it a fake gun (Lakoff & Johnson 1980: 121). They determined that all the perceptual properties (what it looks and feels like), the motor-activity properties (how it may be handled) and even the 'purposive properties' (what you can use it for) can and even should be preserved in a 'fake'. 'Functional' properties (*how* it effects its use) and its 'history' (what it was *originally* made as), however, must be negated for it to be a fake. This points to a very subtle distinction in the properties of an object which inhere in its concept.

If we are going to leave the laboratory and study concepts in real life, then we need a theory oriented to social life. The fact is that different people see the world in quite different ways, and this is tied up with the social activity they are involved in and the culture they have acquired. And we can't look into their head and study their concepts in an MRI machine. Thinking has to be studied in the situations in which it is realised. Laboratory experiments produce laboratory results, but in the study of human behaviour and thinking, it is unlikely that what happens in the laboratory will tell us much about what happens in life outside the laboratory. The world is not a word list.

In summary, a concept is not equivalent to a normative list of features. There is a distinction, albeit not absolute, between phenomenon and essence. Perception and the performance of literary tasks entail distinct psychological functions. Laboratory tasks are practices in their own right and do not 'model' other forms of practice. In fact, if 'concept' is to be a meaningful concept, we have to allow that the same concept manifests itself quite differently according to the practical conditions of its realisation. One and the same concept may be realised as a reflex response to a recognition task reflecting an ideal image, or as a lexical definition in a written essay.

Further, the methods which work very well for the scientific study of material objects do not work so well when the objects under study are thought-objects, if indeed 'thought-object' is a meaningful concept at all. You just cannot succeed in a science of thought-forms while ignoring the results of philosophy, which anticipated the problems experienced by the Psychology of Concepts by at least two hundred years, although without the benefit of experimental methods.

Analysis

Is it possible to counter the deep-seated conviction of cognitive psychologists that images can only be composed by aggregation of 'pixels'? The pervasive influence of the digital image in our lives seems to reinforce this idea, but have you noticed that when there is some disturbance in transmission and the digital image momentarily breaks into much larger pixels? This is because digital images are not stored, transmitted or created one pixel after another, but rather by a 'successive approximation' process which divides larger pixels into smaller ones.

Consider how the ear works. The brain does not receive a series of air pressure measurements, but pulses from sensitive follicles along the length of a little cantilever in the inner ear, which respond to the vibration of the cantilever. This effectively makes a running Fourier transform of the sound pressure variation, which is more like a recording of the movement of the keys a piano keyboard, than the vibratory movement of the strings it controls.

Consider how you recognise a strange person or object. At first, probably based on a couple of cues, you *misrecognise* it, and see a whole image, but the wrong one. Then you pick up a discrepancy and correct the image, thus approaching a true image of the whole by successive correction of the *whole images* of things you already know.

So there is no basis in nature, psychology or technology for the prejudice that perception is atomistic.

The Sociocultural Turn

A number of cognitive psychologists picked up on the sociocultural turn. Edwin Hutchins showed how complicated reasoning processes are accomplished differently using the resources of different cultures, and how in fact problem-solving tasks may be distributed amongst a group of people cooperating thanks to the use of technology. However, Hutchins is very concerned with analysing reasoning processes down to lines of computer source code, as if understanding a reasoning process meant being able to reconstruct it in software. Consequently, he tends to overlook or take for granted those nodal points through which all human reasoning must pass: concepts. The signs for the concepts of the culture then appear as *shorthands* for various combinations of atomistic sense impressions. Machines, after all, perform input-output tasks, and it is the job of the machine operators to decide what to input. It is remarkable that in his study of reasoning

among the much-studied Trobriand Islanders, he went to great lengths to disclose the rational processes underlying formal discourse around property disputes, but gave no significance at all to the complex and subtle range of concepts which are entailed in Trobriand property relations. Nonetheless, Hutchins' work on distributed cognition and how people create and use artefacts to organise the collaborative activity which is normalised within a community, did open a window on the need to understand tools and symbols indigenous to a culture as having an important place in cognition, and many other things besides.

Bruno Latour, who has disclosed the cultural assumptions and practices underlying natural scientific ideas, also regards concepts as a kind of shorthand for nested subroutines linking atomistic sensations and actions to concepts properly so called. These writers are reminiscent of the philosopher Rudolf Carnap who also regarded a range of philosophical problems as solved by demonstrating that all concepts can be reduced to combinations of atomistic sense impressions, using mathematical formulae to make the device look plausible.

I very much doubt that ideas of concepts and words as shorthand for long chains of atomistic percepts and set-theoretical relations has any more psychological reality than dictionary definitions. What does it prove to reduce a concept to a chain of atomistic percepts rather than a series of successive approximations to the whole? Though such ideas do not reflect a psychic reality, they may be useful for programming machines. But even then, the concept of nested subroutines is an already-outdated concept of how computer and information technology works. The general structure of information technology is better represented by a large number of successive layers of systems each of which operate as a self-contained, stable whole, each with its own language and substrate, while passing information about their state to layers above and below. The metaphor of nested subroutines became obsolete with the advent of object-oriented programming in the early 1960s.

It is not the analysis of complex processes into simpler units which is the problem – such an analysis is always necessary in approaching a concrete situation from outside – but that *no thought is given as to what the unit of analysis may be*. In fact, a simple concept is itself a unit, and the problem is not to break a simple concept into parts (which always destroys the concept) but rather to determine *which* concept is analytically primary. For example, why should we assume that each of the letters in the word "rabbit" is a conceptual unit

relevant to reading a line of printed text, with the word itself being regarded as a composite? We could equally well say that each black dot in each letter is the conceptual unit or alternatively that the word, once learnt, is a conceptual unit from which it is possible to proceed to spell out its letters. This is a question which can be resolved experimentally, but all too often it is unwittingly decided in advance by the choice of experimental procedure.

Psychologists study individual actions, whilst sociologists study group behaviour; linguists, on the other hand, study language, the paragon of all those constellations of artefacts with which we organise our thoughts and behaviour, leaving the study of other aspects of material culture to still other disciplines.

Actually, concepts exist only through the correlation of all these domains, and can only be understood through at least a study of psychology, social theory and linguistics, informed by a knowledge of philosophy.

Chapter 2. Narratives and Metaphors

I have remarked that cognitive psychology seems to be edging towards a theory in which concepts draw their content 'from above' rather than 'from below'. The cues by which an object is recognised function to connect the object into a system of related concepts, either using the idea of a 'semantic network' or the 'theory theory', from where the concept draws its substantive content.

The Narrative Turn

Another approach which can play the same role, and perhaps more convincingly, is the idea of *narrative*, that is, that instead of situating concepts of things in a taxonomy of attributes, or as nodes in a semantic network or as the units of a theory, our ideas of things may present themselves as characters, settings or situations in a narrative. Narrative can be seen as an alternative to description and exposition as means of presentation, as well as a mode of understanding and communication of ideas. Many claim that the ability to understand the world via stories is historically, ontogenetically and perhaps even structurally prior to conceptual exposition. People can mentally interpellate themselves into narratives without the cognitive load required to 'draw the lessons' of a story. Narratives may constitute a more plausible, convincing and adaptable model of the world and our thinking than theories properly so called. Indeed, if we prefer developmental to causal, structural or functional theories, theory is but one genre of narrative. As Goethe said, "The history of science is science itself" (Goethe 1810/1988: 161). Narrative is after all, simply the meaningful presentation of experience, situating concepts in vicarious action and providing the material from which conceptual knowledge can be abstracted as the 'truth' of the narrative. It is almost impossible to describe a situation without implicitly or explicitly relating the story of how it came to be. Concepts must in general be located within some larger fabric of human experience in order to be comprehensible.

Experiments (Hala 1999) show that very young children can recognise apparently sophisticated characters and situations while observing puppet shows in which the players are represented by simple geometric shapes. In experiments by Volkelt and Eliasberg, children asked to describe a painting, could only name separate objects, but if asked to *act out* what the painting depicted were able to accurately perform a representation of the entire situation in narrative form. This

demonstrated that the child can perceive a narrative before their language skills would enable them to describe the scene. Jerome Bruner flashed incongruous scenes (such as a discus thrower with a cello not a discus in his hand) before subjects for very brief periods of time, gradually increasing the exposure until people were able to take in the whole scene. He found that people embedded what they saw in a narrative, bending the narrative to accommodate incongruities. Jean Mandler (who introduced the idea of scripts and schemata as elementary structures of the mind) showed that experience which does *not* get structured narratively suffers loss in memory.

The modern theory of the narrative begins with the Russian Formalist Vladimir Propp, who published his "Morphology of the Folktale" in 1928. Mikhail Bakhtin continued the study of narrative, introducing the notion of genre. French literary theory continued work on narrative and in the late 1970s and early 1980s the narrative turn exploded into the social theory and psychology.

The drift of the narrative turn was not that narrative was a means of grasping concepts or part of the developmental process of concepts or any such thing. Rather, 'narrative rationality' was seen as an *alternative* form of knowledge to what was variously called the "paradigmatic mode of knowing" (Walter Fisher), "scientific knowledge" (Lyotard) or the "logico-scientific" mode of knowing (Jerome Bruner). Some writers proposed that both narrative and conceptual rationality were necessary components of the whole knowledge of a topic. Bruner observed, for example, that a psychiatrist needs to bring the skills of the literary critic together with knowledge of theories of psychology in order to understand a patient, both skills being equally necessary, and relying on just one kind of knowledge could lead to absurdities. Nonetheless, the main discovery of the narrative turn seemed to be that narrative rationality and conceptual rationality were two qualitatively different, competing kinds of knowledge, counterposed to one another. The central role of narrative was highlighted in politics (Walter Fisher), psychology (Jerome Bruner and Donald Polkinghorne), sociology (Laurel Richardson), economics (Deirdre McCloskey), and the philosophy of science. Narrative developed as a distinct domain and style of enquiry and a lens through which every aspect of human life could be viewed. The focus on narrative came to be seen as an *alternative* to focus on concepts.

In his famous 1979 ‘report on knowledge’, Jean-François Lyotard claimed that narrative was the form of knowledge typical of non-modern societies in contrast to scientific knowledge. But that:

> the language game of science desires its statements to be true but does not have the resources to legitimate their truth on its own. ... Scientific knowledge cannot know and make known that it is the true knowledge without resorting to the other, narrative, kind of knowledge, which from its point of view is no knowledge at all. Without such recourse it would be in the position of presupposing its own validity and would be stooping to what it condemns: begging the question, proceeding on prejudice. But does it not fall into the same trap by using narrative as its authority? (1979: 28-29)

But it works both ways. Fisher noted that narrative relies on criteria of rationality which are outside the narrative. In fact the entire discipline of narratology is a demonstration of the fact that concepts are needed in order to talk about narrative and legitimate it as ‘a mode of knowledge’. So, just as conceptual knowledge relies upon narrative to legitimate itself, narrative relies on conceptual knowledge in order to legitimate itself.

With his claim that: “The grand narrative has lost its credibility” (1979: 37), Lyotard commits a serious performative contradiction: the “end of the grand narrative” rivals Fukuyama’s “end of history” for the title of greatest grand narrative ever. But:

> We no longer have recourse to the grand narratives ... But as we have seen, the little narrative remains the quintessential form of imaginative invention, most particularly in science (1979: 60).

Narratives concern actions, and in contrast to behaviour, actions are intentional, so narratives are always dual, containing both the unfolding of the actors’ intentions and how things went in the world. As such, it is clear why narrative must play such a crucial role in psychology. The concepts we use to tell a story are among the crucial set of concepts which are explicitly both subjective and objective, essential for the science of concepts.

Jerome Bruner speculated that:

> Is it not unreasonable to suppose that there is some human ‘readiness’ for narrative that is responsible for conserving and elaborating [narrative] tradition in the first place – whether, in Kantian terms, as ‘an art hidden in the human soul’, whether

> as a feature of our language capacity, whether even as a psychological capacity like, say, our readiness to convert the world of visual input into figure and ground? (1990: 45)

Bruner explains how it is that narrative lends plausibility to novel concepts:

> narrative ... specializes in the forging of links between the exceptional and the ordinary. ... It endows [the expectable] with legitimacy or authority. Yet it has powerful means that are purpose-built for rendering the exceptional and the unusual into comprehensible form ... (1990: 47).

and this function has a specific place within any community, in creating shared understanding among members of the community:

> The 'negotiated meanings' ... essential to the conduct of a culture are made possible by narrative's apparatus for dealing simultaneously with canonicality and exceptionality. ... A culture must contain ... a set of interpretive procedures for rendering departures from norms meaningful in terms of established patterns of belief. It is narrative and *narrative interpretation* upon which folk psychology depends for achieving this kind of meaning (my emphasis, 1990: 47).

Isn't it fair to say that narrative plays its role in establishing and sharing understanding only in connection with narrative interpretation, whether formal or informal? Storytellers presuppose an audience. And narrative interpretation is not itself a narrative genre but a conceptual form of knowledge or dialogue. So narrative is meaningful only in connection with conceptual working over of narrative, or catharsis, whether that working over is explicit or implicit. The connection between narrative and conceptual therefore has to be seen as one of movement back and forth between one and the other, alternating rather than alternatives.

But what does the study of narrative tell us, not just about conceptual knowledge, but about concepts? It is neither necessary nor possible to enter here into the vast territory of narratology, which in any case has little to say about concepts as such, but I think that the following observations by Paul Ricoeur (1981) on the concept of plot are very suggestive.

> At this point, it is necessary to introduce the decisive concept of *plot*. To be historical, I shall say, an event must be more than a singular occurrence: it must be defined in terms of its contribution to the development of a plot. This concept, let us

> say straight away, will provide the link between the history of historians and fictional narratives.
>
> What is a plot? The phenomenology of the act of following a story, as elaborated by W. B. Gallie in *Philosophy and Historical Understanding*, will serve as our point of departure. Let us say, to begin with, that a story describes a sequence of actions and experiences of a certain number of characters, whether real or imaginary. These characters are represented in situations which change or of the changes to which they react. These changes in turn reveal hidden aspects of the situation and the characters, giving rise to a new predicament which calls for thought or action or both. The response to this predicament brings the story to its conclusion (1981: 277).

The idea of *plot* is of central importance for us, for plot brings events into a meaningful whole (Polkinghorne 1987), by placing events in chronological order and *suggesting* a connection between them. One of the points of difference between conceptual and narrative rationality is that narrative allows causality to be inferred without asserting it. In general, narrative has an ambiguous relation to truth, an ambiguity which is essential to its function of suggesting and negotiating meanings, leaving itself open for interpretation, without pre-empting what is taken up into conceptual rationality. "We interpret stories by their verisimilitude" (Bruner 1990: 61), rather than their veracity.

Ricoeur tells us that it is the *predicament* and its resolution which constitutes the plot and thereby brings the whole complex of experience into a whole. Narrative then may be understood as the explication or 'unpacking' of predicaments, with the characters and their actions functioning as "emblems" (Bruner 1990: 60) for the predicament and the series of situations which emanate from it.

Alasdair Macintyre (1971) claimed that narrative is the perfect instrument for explanation and understanding of the phenomena dealt with by the human sciences, and according to this reading, the human sciences predate the conceptual natural sciences. But I think further reflection will show that narrative plays the same role in the natural sciences as well, except only that the natural sciences always make it their objective to elaborate each of the phenomena they study as something which exists *independently* of human activity and experience. Narratives, on the other hand, describe *actions* and *experience*, equally subjective and objective. So natural science can only begin where narrative leaves off. But if the natural sciences are to

make Nature intelligible, then they perforce must restore human beings to their place in explanation.

Narrative rationality presents concepts to us as *predicaments* and related *situations* and the unfolding of the process of their resolution in human action. Every plot therefore presents us a concept and an understanding of what drives the plot, namely, the predicament. The predicament produces the drama and represents the concept. The whole project through which the predicament plays itself out and is overcome is the meaning the concept has for us. This is what those who would interpret the narrative must make explicit.

The scripts and schemas introduced into psychology by Jean Mandler have considerable appeal in this light as elementary psychic structures, but I don't think they correspond in any sense to concepts. They are after all the elementary operations and actions through which any plot unfolds, but which acquire meaning only from the overall situation and its resolution in the plot.

This does raise the question though as to whether and how molar entities such as narrative plots, whole social practices and institutions can be reflected in elementary psychic functions like scripts and event or character schemas.

Metaphors, Models and Analogy

In the book that rightly achieved the status of a classic, *Metaphors We Live By* (1980), George Lakoff observed that our entire language is pervaded by metaphor. It is not just that we use a lot of metaphors. Rather, innumerable, almost unnoticeable 'small' metaphors make sense only because they evoke an underlying and unspoken 'large' metaphor. A 'large' metaphor, a concrete *Gestalt* of experiences, such as handling objects, fighting or travelling, gives insight into innumerable relations and actions in which no object is handled and no journey made, but for which these everyday practices function as a model. So "Argument is War," uses war as an entire *Gestalt* of affect-laden relations from which to draw a plethora of metaphors like "defending my position," "attacking my opponent's weak point" and so on. Lakoff points to a relatively small number of such *Gestalten*, like fighting, object-manipulation and journeying which are generally closely connected to basic human functions. The models generally involve direct visceral experience: sensori-motor functions, handling objects and dealing with other people.

The most prominent *Gestalten* are spatial relations which are implicit in most of the prepositions we use, and spatial relations also give us

basic relations like containers and conduits and surfaces. For example, "There is something in what you say" is seen as a spatial metaphor in which "what you say" is taken as the container of something, viz., "a point." Other common metaphors are war, journey, instrument, object, substance and moving object. This is a very compelling idea. We come to understand a range of complex *Gestalten* through immediate, visceral experience in everyday purposive actions with our own body and using artefacts in collaboration with other people. Such experiences are pre-linguistic and rest on practical intelligence, but saturate our entire life and provide a cognitive foundation to understand and orient ourselves with the less clear, more abstract and articulated concepts which are generated in social life.

Lakoff also shows how more than one metaphor can be used in understanding the same complex. For example: Love is war and Love is work. Each large metaphor has entailments, and these entailments generate particular insights without imposing a cognitive load. Two different metaphors may be consistent, or, if only coherent, each may bring to light different aspects of the whole without contradicting one another, or, the two metaphors may actually be incoherent, allowing contradictory aspects of a complex whole to be manifested through contradictory entailments. The whole approach is immensely rich. Like the Theory theory, the metaphor theory sees the meaning of a concept as deriving from its place within a larger, already-existing system of meaning, based in some system of human practice, but the metaphor differs from the theory because it has visceral rather than intellectual force.

Although the ubiquity of metaphor is manifested in all languages, the particularity of metaphorical meanings vary not only from language to language, but from community to community. And Lakoff is quite explicit that although the pervasiveness of metaphor is empirically given in language, it is not simply a linguistic phenomenon, but *manifests how we think*, and Lakoff is surely right here. The observation (Barsalou 1992: 110) that each sensory modality seems to have its own memories and intelligence and that imagining or perceiving some human action seems to involve a mental simulation of the action, also supports this idea.

Lakoff has given us a great clue about the nature and origin of concepts. He gives us an unambiguous indication that concepts are acquired in and through practical activity, and that everyday, immediate, concrete activity provides us with a pre-intellectual, visceral-practical framework for potential concepts, from which

concepts entailed in more elaborated forms of activity may be built. From this Lakoff says:

> The metaphors we live by, whether cultural or personal, are partially preserved in ritual. Cultural metaphors, and the values entailed by them, are propagated by ritual. Ritual forms an indispensable part of the experiential basis of our cultural metaphorical systems. There can be no culture without rituals (1980: 234).

But true as this is, it does not go far enough, for ritual, as such, makes up only a small fraction of the practical activity entailed in social life. He shows us though, how very basic practical experiences may give us a start towards conceptual representation of the complex and highly mediated forms of activity which constitute life in modern society.

Lakoff's attempt to take this brilliant insight into a theory of "embodied cognition" went badly wrong, however, with a serious category mistake:

> An embodied concept is a neural structure that is actually part of, or makes use of, the sensorimotor system of our brains. Much of conceptual inference is, therefore, sensorimotor inference (Lakoff 1999: 20).

A concept is not a neural structure, any more than a concept is some object existing in the world. A reflection can be identified with neither the mirror nor the object reflected. What is required is to determine the nature of concepts without either equating thought-forms with internal neural structures or naïvely reifying the objects of our thoughts as independently existing objects, whether inside or outside the head.

Analogy in Creating Concepts

Nancy Nersessian (2008) has studied the emergence of new concepts, both the creation of new concepts in natural science (Maxwell's concept of electromagnetic field) and concepts that individuals discover for themselves through problem solving. Nersessian sheds light on our topic because she traces how a concept *comes into being*, rather than simply looking at the finished product of a completed process of development. Nersessian calls her method cognitive-historical, because she draws on the concepts of Cognitive Psychology, but applies these ideas to the interpretation of data from the history of science, reconstructing, so far as is possible, the thought-processes through which natural scientists arrive at new concepts.

She claims that the problem-solving processes which lead to new scientific concepts lie on a continuum with the problem-solving processes which give rise to new concepts in everyday life, with the work of natural scientists seen as a sophisticated outgrowth of problem-solving in everyday situations. In a sense, I do not think we can see the *finished products* of scientific thinking as being of the same kind as everyday concepts. Scientific concepts are normally acquired as abstract concepts via *formal instruction* and subsequently concretised through practical experience. Contrariwise, everyday concepts begin life with concrete content before they acquire an abstract definition. We acquire them via different processes of development. However, the natural scientist who *creates* a new concept in a science does not acquire the concept as a ready-made abstraction. Rather he or she creates it in the course of resolving some new problem-situation, a situation created by contradictions which have arisen within their day-to-day experience in science. I think it is reasonable to say that *all* true concepts arise in this way, in an institution of some kind with norms which are capable of generating problems, before they enter the general language and merge with the existing systems of knowledge, as ready-made solutions. Once they have entered into general circulation, they are usually acquired without awareness. So I think that Nersessian's claim is valid, though I doubt that it can be extended without modification from the *creation* of concepts to the *acquisition* of concepts.

Nersessian is interested in the role of analogy in the solution of problems in science. Scientists create *mental models* which acquire some properties from the problematic 'target' domain and some properties from a well-understood 'source' domain. For example, the behaviour of water in a system of pipes is easily understood either because of familiarity with dealing with water, or because one can imagine oneself in the place of the water. So by mentally building a model of the economy in which money is replaced with water, it is possible to understand the general laws of behaviour of the economy viscerally. The results of a hydrodynamic model of the economy can then be formally compared with the analogous economic laws and points of departure identified, which then demand a further refinement of the model. Such mental models, she claims, form the *units* of knowledge.

Nersessian studied the diagrams and notes left us by historical natural scientists, as evidence of the analogies and mental models they built to solve problems in their scientific community. Also, subjects solving

problems in a laboratory setting were observed making gestures and movements with their hands betraying the fact they were imagining themselves manipulating mental models or acting them out. It is now a well-known fact of neuroscience, that imagining motor actions activates most of the same neurological activity as actually carrying out the action. The conclusion is inescapable that individuals use the sensori-motor functions of their nervous system to access experience accrued in everyday life, and to solve cognitive problems by translating the problem into everyday sensorimotor experience. These are the domains which George Lakoff took to be the source of *metaphor*: manipulating objects, fighting, journeying, containers, conduits and surfaces, substances, moving objects and so on. Such 'modelling' makes it possible to carry out 'thought experiments' in which major components of the problem solving are dealt with *implicitly* thanks to the selection of a good analogy, which brings with it, or entails, an extensive system of relations which are built into the background for mental simulation, and do not impose a cognitive load.

The manipulation of the mental model is not in itself sufficient to solve the problems and contradictions which have emerged in the 'target' domain. The metaphor can only work because the target and source domains are *not* in fact homologous. So the solution of the problem requires the identification of contradictions and extension of the model beyond what may be reliably understood from experience in the source domain. For example, to carry out the thought experiments Einstein used in his special relativity, the speed of light has to be reduced to a few mph. Fluid analogies for electromagnetic fields involve an ether which exhibits some, but obviously not all, of the dynamic properties of elastic fluids. So the thinker has to create an imaginary environment where the laws of nature have been tinkered with. But we do this whenever we play computer games, and good computer graphics will have us at home in an invented universe in no time at all. We acquire each new property of the model as an extension of known properties, and learn to be as proficient in simulating scenarios in the new 'target' domain as we were in the 'source' domain. Metaphorically speaking, we learn to understand flight by growing imaginary wings.

Nersessian insists that "model-based reasoning is genuine reasoning. It is not an ancillary aid to reasoning carried out by logical manipulations of propositional representations" (2008: 184). When we see only the finished product of a process of development, in this case concepts of relations remote from everyday experience, then *how* we

form concepts of these relations is mysterious. Consequently the nature of the concepts themselves is equally mysterious. But by tracing the development of these exotic concepts, Nersessian has shown how the mundane relations which we well understand viscerally act as *stepping stones* to the more exotic concepts, and are incorporated into them in modified form.

Also, Nersessian is insistent on a very important aspect of the context of scientific discovery. She says that new scientific concepts arise from situations characterised by problems within a formerly stable and well-defined theoretical framework. The new concept arises as a solution to a problem which the development of the science up to that point had posed but could not solve. Without the already-existing system of scientific knowledge and practice in the field, no anomaly could arise and neither the need nor the opportunity to develop the new concept would be possible. In that sense, a new concept contains all previous development of the science in the very process of negating it and restructuring it on a new foundation. And in the wake of an epoch-making development, there is always a cascade of new concepts which follow from it, resolving subordinate problems arising from the process of restructure, more or less as corollaries. The idea of a *mental model* of a problem situation, which can be abstracted from any concrete, particular context, as a *unit of knowledge* is very attractive. At the heart of each mental model is a concept.

Nersessian suggests that the internal biological systems and external cultural representations, such as tools and symbols, form a "coupled system" of cognition (2008: 116). Nersessian draws on the evolutionary psychology of Merlin Donald, claiming that 'mental tools' develop out of the interaction between two entangled processes: biological selection and adaptation, on one hand, and sociocultural construction, selection, and adaptation, on the other. In this way Nersessian proposes to explain how people acquire psychological functions which can perform far in excess of their natural abilities by utilising cues in the cultural environment as a normal part of psychological functioning. As a result, she says, "there is no need for internal representations" (2008: 117). Cognition is distributed between internal and external systems, and concepts exist in the artefacts we use as much as in the way we perceive and act with them. Concepts cannot, she says, be seen as an entirely neuronal structure.

* * *

Theories of metaphor and analogy demonstrate how everyday practical intelligence may be leveraged so as to provide for exotic and abstract concepts by 'tinkering' with properties of the world in which practical intelligence is acquired. Both metaphors and narratives demonstrate that concepts presuppose a unique combination of the mundane and the imaginative.

Chapter 3. Conceptual Change and Linguistics

I will preface a review of the ideas of the conceptual change movement in learning theory, by mentioning the work of Jean Piaget, whose Kantian theory of cognitive development triggered the cognitive revolution, and Thomas Kuhn, whose book "The Structure of Scientific Revolutions," itself constituted a revolution in how conceptual change is understood. These currents are more concerned with *understanding* than with recognition and categorisation.

Piaget

I mention Piaget only by way of his being an agent who inspired the developments in psychology and pedagogic research which are of interest to us here, rather than for his own outstanding contribution to developmental psychology. Piaget's idea of equilibration is a powerful way of conceptualising how an organism (child) develops in the process of adaptation to its environment. Equilibration is a dynamic equilibrium between two opposite tendencies: assimilation and accommodation. In assimilation the child incorporates into its cognitive structure and behaviour a new experience or form of behaviour, acquired from its environment, thus making a power found in the environment into a power of their own. In accommodation, the child responds to a failure of adaptation by modifying their cognitive structure and behaviour in order to yield to the resistance offered by the environment. For example, in following a moving object with their eyes, they accommodate their eye movement to the object. When the object passes behind something, their eyes remain fixed at the point it disappeared. Later the object reappears on the other side of the obstruction, and they again accommodate to it in its new position. When they learn to continue to follow the path of the object until it re-appears on the other side, they have assimilated the object's regular movement to their own cognitive scheme and behaviour. If the object fails to re-appear then this provides a new stimulus for further accommodatory searching until a new schema of object-following can be developed. This idea made it possible to understand the process of an organism's adaptation to its environment, firstly as an *active* process, rather than one of passive reflection, and secondly as a process of development of the organism's own activity, rather than one of mirroring arbitrary attributes of the environment. The result

was a conception of the mind that went through successive waves of accommodation and assimilation, each time achieving a formal representation of its own activity through which it could be subject to control by the organism itself.

This allowed Piaget to represent the cognitive structure of a child, at any given stage in its development, with formal mathematical structures such as groups, according to the complexity of transformation of reality which the child can cognise. Each developmental stage corresponds to achievement of cognitive tasks corresponding to transformations describable by more and more sophisticated mathematical structures, irrespective of the context or content of the relevant ideas. This idea allows us to think of cognitive structures which are not just associations, images or metaphors, but incorporate the properties of something in the world through formally isomorphic structures of transformation, or if you like, a cognitive model of a type of reality. It also allows us to understand how cognitive dissonance may stimulate cognitive development.

Piaget made an interdisciplinary effort to transpose his conception from ontogenetic (child) development to phylogenetic (historical) development. This is a form of the 'biogenetic hypothesis' and it does not work. Partly this is because an individual person develops by growing into an existing culture and mode of activity, whereas societies, like species, develop principally by pulling themselves up by their own bootstraps. Also, the abstract mathematical structures which Piaget uses to describe stages of cognitive development are the outcome of a long history of logic and mathematics, which has uncovered successively deeper and more primitive relations. But in the development of science it is not at all the case that sciences begin with simple, abstract relations; mathematics began with Geometry and Arithmetic, not Group Theory. More likely a science begins with very concrete structure and content, and like mathematics and logic, burrow down to a conception of the basic underlying abstract forms only much later. Nonetheless, his venture into the history of science, introducing the idea of structural transformations in moving from one stage to another, proved, along with Gestalt Psychology, to be the inspiration that spurred Thomas Kuhn to develop his sociology of science, hinging around the idea of periods of gradual development punctuated by crises and revolutions in the natural sciences.

Thomas Kuhn's Sociology of Science

Kuhn's theory of scientific revolutions is so well-known, I shall not bore the reader with a recapitulation of it. My aim is simply to bring out its importance for our theme, clarify the meaning of the term 'paradigm' and make some incidental comments about Kuhn's theory.

The first thing to note about the theory, at least as it was first presented, is that a paradigm is an *exemplar* of scientific achievement, usually a book or a research report, or a family of such exemplars, which appears at a time of crisis in a science. Offering a novel and exemplary approach to the subject matter, the paradigm offers a way out of the impasse and serves as a model while leaving many open questions and matters of detail and application still to be clarified. Such an exemplar thus leaves in its wake a period of puzzle solving, working through the details, so to speak, which Kuhn calls 'normal science'.

Because of its role in setting new puzzles for research, with a new understanding of the nature of the subject matter, of what constitutes a useful question and a valid answer, the paradigm gradually becomes generalised into a set of norms and rules, definitions and axioms. These constitute the formal domain representing a scientific theory, along with a disciplinary identity, a reconstituted scientific community, standard practices and specialised technology. But Kuhn is at pains to emphasise that a paradigm is first of all an exemplar, and only consequent upon its acting as an exemplar may a disciplinary matrix constituting a new kind of 'world view' develop. In the same spirit, Kuhn insists that induction into a science is not a matter of first learning a series of abstract theories, definitions, laws and then *later* learning how to *apply* these principles. Rather science education is primarily acquaintance with the paradigms of scientific practice from which the scientist can learn the substance and concrete meaning of the abstract principles, which in themselves have no obvious connection with experience.

If we say that for Kuhn a paradigm is both an exemplar *and* a matrix of concepts and practices, then we are looking at a process of development, both of the work of individual participants and of the overall objectification of the science as a whole. A new concept cannot but emerge in the form of a particular exemplar of scientific practice, but the work of 'normal science' is to 'operationalise' the exemplar and fill its original undeveloped form with practical content. This process somewhat resembles the way a new legal precedent

becomes consolidated in judicial practice and law. The confusion over what Kuhn meant by 'paradigm' which has reigned since the first publication of "Scientific Revolutions" is probably explained by the need to define a concept as an entity with fixed attributes, rather than as a developing process. The paradigm is this process which begins with a spectacular exemplar and is gradually transformed into an intricate matrix of norms and rules.

The 'normal science' which constitutes the gradual working out of the paradigm takes the form of 'puzzle-solving'. The paradigm settles what the legitimate questions are which need to be asked, sets puzzles for scientists to solve. The concretisation of the paradigm is achieved by the successful solution of all those problems which are set up by the paradigm. Kuhn says that "the unit of scientific achievement is the solved problem" (Kuhn 1962: 169). The paradigmatic exemplar itself solves more than a 'puzzle'. Its role is to resolve a crisis or impasse into which the whole former science had fallen[*], and effectively found a new branch of science. It is said that the paradigm constitutes a new *concept* of the subject matter, and in this sense we see in the above definition exactly what Kuhn means by a scientific concept. It is a process of problem solving which begins with a solution to a problem in the development of the entire body of the science, which reveals the nature of the subject matter, and develops through the working out and concretisation of the initial solution in the form of a continuous process of puzzle-solving.

If a successful problem solution is a concept, then the paradigm is a concrete universal concept which includes the puzzle-solving activity of 'normal science' as subordinate parts. The reader may notice the similarity of this idea to Hegel's approach exhibited in the *Phenomenology of Spirit*, to be discussed in Part II. Science and its special branches, each founded by a paradigmatic exemplar concept, constitute what Hegel calls a 'formation of consciousness'. The puzzle-solving of 'normal science' are its subordinate concepts, the units of the formation of consciousness. Continuing this comparison, Hegel sees that every formation of consciousness is subject to sceptical critique which begins in matters of detail, but ultimately undermines the ideal or defining self-concept of the formation. This criticism arises from the activity of the concept itself, and sooner or

[*] It is not at all necessary that the condition of 'crisis' be universally perceived. It may be just one little problem which stalwartly refuses to be resolved. But the perceptive researcher sees the global significance of the problem.

later, according to Hegel, every formation of consciousness eventually comes into irresolvable contradiction with itself. The resulting crisis opens the way for a new formation of consciousness which is able to resolve the terminal crisis of its predecessor. All the concepts belonging to the formation of consciousness, its special principles, are then negated and sublated into the constituent concepts of the new formation.

Natural science reifies its concepts. That is the defining feature of natural science. It treats its concepts as things existing independently in the natural world. But in Kuhn's analysis, a concept is a problem-solution, a practical solution to a problem which arises only within a system of activity defined by the paradigm, itself an exemplar of natural scientific practice. The puzzle solution is then reformulated, and taken as the discovery of some thing with an independent existence. Thus, progress is recorded in terms of the reified product of scientific activity, rather than the process of scientific activity itself.

A lot of the discussion around Kuhn's idea has hinged around the 'Gestalt switch' that is involved in traversing a scientific revolution, with a total transformation of how the world is seen, and the seeming impossibility of communication across paradigms. But as I read it, the absolute character of the transformation effected by a scientific revolution is by no means essential to his basic idea, which is just as applicable to the solution of small problems as to great revolutions like that of Copernicus or Einstein. The difficulty of communication is always relative. There is no concept in any language which absolutely defies translation. But as a problem-solution, a concept is meaningful only in the light of the paradigm to which it belongs and this is an necessary part of understanding what a concept is. A solution is always the solution to *some* problem, which can only arise within *some* system of practice.

However, I think Kuhn falls into the same error that Hegel fell into by his focus on the internal problems of a scientific community and its specific concerns. This focus implies that progress is the work of thought alone, and that the history of science can be understood solely on its own terms. Rather, any science to a large extent gets its questions and its concerns from its place within the larger community of which it is a part. In particular, the technical means that it uses in its own activity are provided from outside the science and it is above all the developing means of measuring and observing which continually disrupts science and poses for it new problems as well as new means for their solution. This tends to be over the horizon of Kuhn's point of

view, which gives the appearance of science being an entirely intellectual activity, self-contained within a system of unfolding logical puzzles. Science is a practical activity, whose participants are real individuals living in a real human community, and uses the *technical means* provided by that community to solve puzzles which in some measure arise from the *practical concerns* of that community. Kuhn is right to take as his unit of activity the problem-solutions of one specific scientific community, one paradigm, but in order not to misconstrue what is at work within it, it is still necessary to place that scientific community within its context. Kuhn's observation that scientific creation is insulated from the judgment of the broader community, and confined to a finite group of co-workers, to a greater extent than the work of any other creative worker, is noteworthy. It is this fact that allows the character of concepts as problem-solutions within a definite system of practice defined by a more general concept to stand out in such relief. Over time scientific concepts make their way into the general life of the larger community, where they merge with the activity of everyday life, and take on the appearance of noumena.

Another fact about concepts which is thrown into relief by Kuhn's focus on communities of practice which are relatively insulated from the judgment of the general community is how the significance of a concept is dependent on the project of which it is a part. This begs the question as to whether the *consistency* demanded of the problem-solving activity within a given paradigm is a feature of thinking in the wider community. That is: what takes the place of a *scientific* paradigm in the life of the general community? Since Kuhn never addressed this question, a question which raises very far-reaching questions, I will put this aside until the final section when I address the question: "What Is a Concept?"

Kuhn remarks that "unfortunately, the questions which [investigation of the crisis-state] leads to, demand the competence of the psychologist even more than that of the historian" (1962: 86). And indeed, the psychological processes of bridging the gap from one paradigm to another, either in the process of education or as a pioneer in science, has attracted the attention of psychologists, and it is to this work I shall now turn, rather than the analogies and metaphors of which Kuhn's theory is so productive.

Misconceptions and Conceptual Change

"Starting in the mid to late 1970s, a huge social movement, which we dub 'misconceptions', began modern conceptual change studies in educational research and in neighboring disciplines, including experimental psychology and developmental psychology" (diSessa 2006). Especially in subjects like physics and biology, rather than taking learning to be a matter of adding new ideas on to a blank slate representing no prior knowledge of the field in question, learning theorists began to look at learning as replacing formerly held *mis*conceptions – naïve physics or naïve biology – with scientific conceptions of the same subject matter. Thus learners were seen as having to undergo a 'paradigm shift'.

One outcome of this approach was to take seriously the concepts novices had of the processes studied by physics, biology, mathematics and so on, and investigate how children conceived of falling bodies, the difference between animals and inanimate objects, and so on. Since all children approach learning in these areas with one or more of a finite range of possible alternative (mis-)conceptions, mere *awareness* of how a child already understands a process will invariably make the teacher's job easier. To explain the way science understands the process and assist the child in adopting science's view is difficult if you are working on the mistaken assumption, that the child has *no* way of understanding heat and temperature or the shape of the Earth or whatever, at all.

The question is this. Is it valid to conceive of the novice's naïve view of a process as a paradigm, and is it reasonable to expect that the novice's view is part of an internally consistent worldview, from which a 'gestalt switch' is required? Does the schoolchild's misconception have to be destroyed before it can be replaced with a new, scientific view? Concomitantly, is the novice's spontaneous view of a topic an actual *barrier* to adopting the alternative, scientific view?

Drawing on Andrea diSessa's (2006) excellent historical summary of this debate, it seems fair to conclude that there is no basis whatsoever for supposing that a child's naïve physics, for example, is a 'paradigm' in the sense of a matrix of concepts and practices which exhibits any kind of internal consistency. It is fairly well established that children do not become aware of logical contradiction until learning the idea by engaging in argument with their peers, and even then, it takes a long time for this awareness to penetrate all domains of their thinking and activity. Even given this awareness, a lifetime may

not be long enough for their knowledge to be restructured into anything resembling an internally coherent body of knowledge. But this does not mean that a child's naïve physics is not paradigmatic in a different sense. A child's naïve views rest on the use of words learnt through collaboration with adults and a practical intelligence acquired through manipulation of objects even before acquiring the use of language. Thus the child's actions express the logic implicit in the culture they are being raised in, whether or not they are consciously aware of it. Until the child's view of the world is sufficiently differentiated, the child must perforce *extend* a strategy which has been successful in one situation to use in other similar situations. So the general idea of a paradigm, as an exemplar on which a range of activities can be modelled is not necessarily misplaced. The empirical study of misconceptions sheds light on the kind of mistakes children make in the absence of access to the institutionalised experience of the entire community. But nothing like a gestalt switch is implied in correcting such mistakes. Generally speaking, a *system* of ideas is precisely what children lack. They have some kind of idea for everything they have learnt the name of, but these ideas will not be true concepts. More likely the child will set off from improvised extensions of concepts derived from practical sensori-motor experience or hearsay, and their ideas will be neither stable nor fit into any coherent system.

Piaget was influential in the formation of the conceptual change movement, on account of his discovery that children were required to successively restructure their cognitive framework in the course of their development. However, the idea of equilibration did not shed any light on how naïve conceptions come to be abandoned, under the influence of instruction, in favour of more scientific concepts. Nonetheless, Piaget promoted a constructivist view of mental development, that is, that revised views of the world have to be constructed on the basis of and by means of *some earlier idea*. His idea of mental structures which were independent of context or situation did not stand up to scrutiny however. Spontaneous concepts are domain specific.

Linguistics

Linguists have also made a substantial contribution to the study of concepts. Ray Jackendorf (Margolis & Laurence, 1999: 305) points to an important distinction: most linguists are concerned only with concepts as they are embodied in artefacts (especially words) in *the*

world, whilst others, such as Noam Chomsky, approach concepts as *mental formations*:

> On one hand, [a concept] is something out there in the world: 'the Newtonian concept of mass' is something that is spoken of as though it exists independently of who actually knows or grasps it. Likewise 'grasping a concept' evokes comparison to grasping a physical object. ... On the other hand, a concept is spoken of as an entity within one's head, a private entity, a product of the imagination that can be conveyed to others only by means of language, gestures, drawing or some other imperfect means of communication.

Because "language is the immediate actuality of thought" (MECW v.5: 446), linguistics allows a more sophisticated and nuanced investigation of concepts and the relations between them, exploring avenues that remain closed to a psychology of concepts which concerns itself with hypothetical and imperceptible forms in the mind. It seems that there is little prospect of building a rich psychology of concepts without actively engaging with linguistics and semiotics generally and being able to appropriate its results. I will not venture into the vast domain of linguistics here, but part of our aim must be to open a door to allow the insights of linguistics to be accessed by a psychology of concepts and vice versa.

In addition, I would like to make the following note on linguistics. All specialists tend to apotheosise their own field of study and linguists are no different. Even though the subject matter of linguistics is merely the *signs* of concepts, linguists tend to see concepts as properties of words, whether spoken or written. As Marx said:

> One of the most difficult tasks confronting philosophers is to descend from the world of thought to the actual world. *Language* is the immediate actuality of thought. Just as philosophers have given thought an independent existence, so they were bound to make language into an independent realm (MECW v.5: 446).

Ever since Saussure, linguistics has been hampered by a pervasive dualism, with a system of signifiers on one side, and the world of the signified on the other, presenting linguists with the insoluble problem of how to match up one side with the other. Nonetheless, the very difficulty of having to reconstruct a living activity from the evidence of texts, has led to linguistics becoming the source of a wealth of critical insights into the relation between words and concepts. I thank

Jay Lemke for the following list of distinctions in the understanding of word *meaning* known to linguistics:

- The universal, dictionary meaning of an expression, as opposed to the *particular* meaning indicated in a given context or situation.
- The imagined or material entity or situation to which an expression can be interpreted as referring, as opposed to all the *other information* about the stance the speaker is taking toward it that can be inferred from how it was referred to (or when, or by whom, etc.).
- The literal meaning of an expression in its original or most stereotypical contexts of use as opposed to its various *metaphorical meanings* in other contexts.
- The meaning of an expression as a formulation of some state of affairs as opposed to its meaning as construing a social relationship or instancing a *rhetorical function* in the producer-interpreter exchange (actual or potential).
- The most limited possible minimal interpretation of the meaning of an expression as opposed to various more intertext- and association- rich expanded interpretations.
- Objective reference (*Bedeutung*) as the actual object being referred to as opposed to Sense (*Sinn*) as the way in which it is referred. So Napoleon is the objective reference for both the victor at Jena and vanquished at Waterloo, two different senses by which Napoleon is meant.
- The *connotation* of an expression, as the set of properties that determine whether an individual falls under it, as opposed to the *denotation* of an expression as the concrete collection of entities that *do* fall under it, its extension.

Our aim here is to clarify what a *concept* is, not the meaning of a word. Pragmatics and the place of language in activity and context is not our subject matter. I am concerned only with what pertains to an understanding of concepts. The problem of what is a concept is neither more nor less complex than the problem of word meaning, i.e., the relation of an expression to the concept for which it is a sign. The two problems are co-extensive, but nonetheless, two different problems.

Linguists and cultural critics working in their departments, the social behaviourists and sociologists in their departments, and historians and psychologists in theirs, each focus exclusively on just one aspect of

concepts. The absence of an *integrated theory* and the dominance of one-sided approaches is a result of the modern fragmentation of science along disciplinary lines. Imagine if you had two different departments, one studying keys, the other locks. Each can describe the constitution of their subject perfectly well, but self-evidently no sense could be made of either locks or keys. Only if the systems of activity in which individuals participate, the constellation of artefacts used and constituted in that activity and the individual human actions are taken together as aspects of a single, indivisible whole, can we understand any one side of a concept.

We live in a humanised world. We live in Nature too, of course, but our relationship to Nature is mediated by the artefacts with which we surround ourselves and the collaborative forms of activity through which we interact with culture and Nature. Our concepts are necessarily part of this too, because our concepts are the basic units of this humanised world. Our concepts are the basic units, the threads, from which our consciousness is woven, and the basic units of which our culture is made, and the basic unit from which the systems of activity through which we interact with each other are made. If we can work out an approach to concepts like this, then it becomes possible to understand how concepts can truly reflect our actions and intentions, because they are basic units of both our mental world and the humanised world we share with others. Instead of a problem of matched pairs of ideas and things, we have an assembly of entities which are both mental and material, both subjective and objective. We don't need a dichotomy, because we make no cut.

It is worth noting that if we take concept to mean a situation constituted by artefact-mediated activity, then concepts are as affect-laden and full of emotional content as is our activity. A concept is not a dead form of words, such as a definition, or any kind of reified object, but a living, active form of life, with all the vitality and emotion that belongs to real human activity: a real form of human life which is both subjective and objective.

Wittgenstein

The study of language and its relation to the study of concepts cannot go past the (later) work of Ludwig Wittgenstein, a renegade from Logical Positivism, who has provided an insider's critique of the analytical approach to language and meaning.

Whereas I have said that a word (or expression) is the sign for a concept, the drift of Wittgenstein's work is that it is a mistake to take

a word as a sign for *anything* other than itself. Word meaning is just how the word is used. In §66 of the *Investigations* he demonstrates that the wide variety of concepts evoked by the word 'game', have no attribute which is shared in common by them all. That in itself should be no surprise. One would have to be a Logical Positivist to be surprised that word meanings don't work like Set Theory. If a word simply named an attribute, then the concept itself would be empty.

But while a word may be a sign for a concept, it would be untenable to also define a concept as the referent of a word, simply duplicating the world into signs and signifieds. A great deal of context, gesture and so on is required for a word to function as a sign for a concept in any locutionary act.

Wittgenstein goes on to suggest that we don't have and don't need to have *any* kind of definition of a word, beyond clarifying how we are using the word in the given instance. Taken in conjunction with his observations about 'family resemblance' and the impossibility of setting boundaries, this implies a move away from a taxonomy based on attributes, and towards a typology based on exemplars and as such has some merit. There is something to be said for the idea that a word gains its meaning from its use and can have no determinate meaning abstracted from the conditions of its use. But what does it mean to 'use' a word and what conditions of use determine meaning?

Wittgenstein also points out that it is empty to characterise an action by setting up a normative rule and taking the action as obedience to the rule. Wittgenstein shows that all this achieves is to set up a metaphysical model which more or less imperfectly reflects what it is supposed to explain. What is fundamental is the action itself, from which norms and rules can be abstracted, rather than rules and norms being deemed to underlie the action. People can behave normatively without being able to specify the relevant norm or even being aware that such a norm exists.

Like many others, Wittgenstein freely uses the word 'concept' but never says what he means by it. At one point, he suggests that "a concept is ... the application of a word" (PI §383), but at another that a concept is "a characteristic of human handwriting," (PPF i) and that "Language is an instrument. Its concepts are instruments" (PI §569), implying that concepts are properties of language, if not exclusively of writing. I must agree, however, with his observation that "Concepts lead us to make investigations. They are the expression of our interest and direct our interest" (PI §570).

Word meanings are *motivated* or they are not meant at all. An action, such as word meaning, is obedient to its motivation, the end which the action serves, which is always something other than the action itself. It is this which is of interest to us, rather than just how speakers convey and evoke their meanings by selective and artful use of words. It is the concepts which motivate word meanings, and for which words are used. Where in Wittgenstein's writings do we learn about how concepts function in mediating interaction?

The early paragraphs of "Philosophical Investigations" are set in the context of people collaborating in constructing a building, and the interlocutors make sense of each other's words thanks to the fact that they are engaged in the same activity. In §23 he says:

> the term 'language-game' is meant to bring into prominence the fact that the speaking of language is part of an activity, or of a form of life (Wittgenstein 1953 §23).

And this is the point. It is these extra-discursive activities which provide the ends towards which word meanings are oriented. Concepts are located within shared activities and forms of life, not just the transitory uses of words. A million disparate actions are required to build a house, but the meaning of all these actions is house building and derivative concepts (in the sense that Kuhn talks of normal science as derivative of a paradigm). Here is the real problem which Wittgenstein does not address.

Concepts are discursively constructed prior to any given utterance and have relative stability. We could not suppose that an environment (such as a building site) is sufficient for all the interlocutors to understand the activity they are engaged in, so that they are able to construe appropriate meanings to others' words. That 'context' has to be evoked *discursively*. But everything about constructing a building: the various building elements, the skills and processes, the division of labour, plans and so on, pre-exist any given utterance or any of the actions which contribute to finally constructing a building.

Wittgenstein does not help us understand what it is in those activities and forms of life which create and maintain the concepts which allow language to be meaningful. The uttering of a word is a momentary, transient event, and it is surely only the activity and form of life of which it is a part which confers meaning on words, expressions and gestures?

I think Holzman and Newman had it right when they described "Wittgenstein's work as therapy – for philosophers, whose obsession

with philosophical problems is their pathology" (Newman & Holzman, 2006: 177).

In a similar vein, in the context of learning mathematics, Anna Sfard defines a concept as "a word together with its discursive uses" (2008: 268). When we first learn a concept, then the concept is indeed inseparable from the word by which we first learned it. But over time, the concept becomes more and more independent of the word. At the same time, one and the same concept can be evoked by different words, differences in nuance and context notwithstanding. So I think it would a mistake to tie a concept to a word in this way. If every word marks a different concept, then we are led to the dualism of signifier and signified, even if by signified we mean "discursive uses" rather than some noumenon. Sfard is right to say that "one cannot get a sense of a person's concept of number without considering the totality of this person's discursive activities in which the term *number* may occur," but there is no one-to-one relation between word and concept. The idea of a word unifying a disparate range of meanings has merit, but in my view, this definition is still too much oriented to personal meaning, and lacks normative content.

Wittgenstein argued forcefully that word meaning cannot be rationalised as conformance to a semantic norm, since semantic norms are derivative from discursive use. But by reminding us that language-use is part of an activity, Wittgenstein pointed to the source of semantic normativity. Wittgenstein remained a sceptic on the question of concepts, content with debunking the illusions of Logical Positivism. If we are to make any sense of the idea of 'mathematical concepts', we need to know what makes some uses of a word normative and not others. Anna Sfard sharply distinguishes her view from the interactionism of Wittgenstein and Brandom when she says: "with the *whole discourse on numbers* as the unit of analysis, we can now explain these phenomena as stemming directly from the systemic nature of discursive development" (2008: 268). But Sfard also evokes the idea of the 'endorsed narrative' as the criterion for having grasped a concept and being able to use a word in the socially approved manner. But an endorsed narrative can turn out to be wrong. Endorsed by whom? But if endorsement is the final court of appeal, then there can be no extra-discursive criteria for normativity. It makes sense for the concepts of everyday life, where semantic norms are always in play, but in the case of scientific concepts or other concepts belonging to definite forms of social practice, I think we must, as Sfard suggests, take "the *whole discourse* [of some activity] as the unit of analysis."

Chapter 4. Robert Brandom on Concepts

Introduction

Given the failure of analytical science to even provide itself with an adequate idea of what a concept is, let alone elaborate a systematic psychology of concepts, Robert Brandom's philosophical study of concepts, is all the more to be welcomed because Brandom situates himself squarely within the tradition of analytical philosophy, which is also his main protagonist.

A former student of Richard Rorty, Brandom identifies himself both as a Pragmatist and as an analytic philosopher in the "Anglo-American tradition." His pragmatic reading of Kant is particularly valuable, but his attempt to extend this approach to Hegel I find less successful. Brandom's approach is like that of Robert R. Williams in which Hegel is cast as a liberal with a philosophy of unmediated interactions. Mediation is the *sine qua non* of Hegel philosophy.

His 2000 book, *Articulating Reasons*, opens with the words: "This is a book about the use and content of *concepts*." He claims:

> I am putting forward a view that is opposed to many ... of the large theoretical, explanatory, and strategic commitments that have shaped and motivated Anglo-American philosophy in the twentieth century: empiricism, naturalism, representationalism, semantic atomism, formalism about logic, and instrumentalism about the norms of practical rationality, [but] I take my expository and argumentative structure and the criteria of adequacy for having made a claim with a clear content, argued for it, and responsibly followed out its consequences resolutely from the Anglo-American tradition.

In particular, unlike the rest of the analytical tradition, Brandom is interested in what is *distinctive* about concept-use, rather than taking concept-use as simply a more developed form of the behaviour of a trained pigeon. Consequently, he is more interested in how concepts function as premises for reasoning, rather than just as criteria for classification. Understanding, after all, means knowing what is *entailed* by a concept, not simply differentially responding to this or that condition in the environment, something that even machines and the lower animals can do. Brandom describes his approach as "inferentialism" in contrast to the dominant view of concepts in analytical philosophy which he calls "representationalism," i.e., taking concepts to simply be representations of their object.

One of the features of Brandom's approach, which he credits to Kant, is that without obliterating the distinction between *is* and *ought*, he takes as his topic *normativity* without distinguishing between norms flowing from belief (theoretical norms), norms of desire (practical or ethical norms) and norms of meaning (semantic norms). Indeed, it would seem that there is no hard line to be drawn between adhering to a norm enforced by social sanctions, one enforced by the laws of nature or by the shared understandings of a language community. This is an approach which takes the ethos and beliefs of a social formation as a whole and effectively overcomes the dichotomy between science and ethics.

Nonetheless, Brandom claims "The topic of philosophy is normativity in all its guises, and inference in all its forms" (2009: 126), and Brandom almost never ventures outside the domain of philosophical enquiry so-defined. Since norms are, by definition, generally known and can be taken as given, he eschews interest in the history, sociology or psychology of norms. I think the days when a thinker can usefully contribute to an understanding of the human condition without reference to the world outside of Logic were over some time in the 1830s. Consequently, the answer Brandom gives to the question "What is a concept?" is an answer belonging solely to Logic, leaving unanswered all the questions of Ontology, Social Theory and Psychology, which bedevil the problem of explaining what a concept is.

Brandom's Theory of Concepts

Brandom sets out from the beginning to identify what is *distinctive* about concepts, that is to say, about the *use* of concepts and the creatures, human beings, who use concepts. It may be that there is no firm line to be drawn in a spectrum which goes from a thermostat which turns on the cooler when the temperature exceeds its set point, to the physicist who grasps the concept of critical mass. But there is a difference, and it is this difference which is important.

The differential response of a machine or in fact any inanimate object, according to a stimulus, or the conditioned reflex of a pigeon trained to peck a red button to get food, indeed simulates one aspect of a concept, namely, a response which discriminates for the existence of some condition. In this same sense, a concept can be said to be a representation of its object. This capacity for representation is a universal property of matter, in that all material objects and organisms

respond differentially to environmental conditions. Clearly, this does not tell us what is distinctive about concepts.

Brandom calls upon the intuition that having a concept of something means *understanding* it, and the thermostat may respond to temperature and cause a switch to turn on, but it cannot be said to understand, any more than the parrot understands what it means when it responds to the presentation of a red object by calling "It's red!" The parrot does not know the *significance* of its words. So what then does it mean to *understand*?

To understand, according to Brandom, means to be able to use a concept as both a conclusion and a premise in reasoning. A concept is therefore, in the first place, not just a representation of its object. It is a predicate which could be asserted of an object, *and* the inferences which could be drawn from the existence of the object.

This raises a couple of points which require clarification. Firstly, the concept is not a representation of what actually exists, but rather it represents a *hypothetical* condition, a *possible* predicate of some object, or the conclusion of some reasoning process. Even sensations need to be seen as 'evidence' from which a representation is constructed. So Brandom's idea of representation is quite distinct from all kinds of automatic, discriminatory responses to existing stimuli. It is not a reflection of an existing state or perceptual field, but a product of reasoning. The concept can exist without the presence of its object.

Secondly, Brandom is talking about concept-use, and his strategy is to infer what a concept *is* from what can be said of concept-*use*. As a pragmatist, he takes knowing-*how* as prior to knowing-*that*. What a concept is, is to be inferred from what can be done with it. Conscious awareness of the concept is therefore secondary to acting *as if* one knows the concept.

So much for concepts as 'representations'. But understanding implies that the concept is not just a label, but *means something* to the subject. For example, it is simple enough to define the conditions which are formally represented by the concept of 'AWOL', but to understand this concept means that you know that it means arrest, danger and humiliation. These are the inferences which follow from the conditions formally represented by the concept (absent without leave). A subject cannot be said to understand the concept unless they know all these conditions which can be inferred from the concept. Note that there are various conclusions which can be inferred from the premise, AWOL, in a purely formal sense, which are contained in the concept

in a formal way, and do not therefore mark the condition as a concept, properly so-called. These are what Brandom calls 'material inferences', which are not simply implicit in the formal conditions represented, but flow from the concept's place in a whole network of relations (e.g. military practice), but which can be inferred by someone who truly understands the concept. To understand a concept therefore entails more than to understand the formal conditions under which the concept is extant, but in addition, to understand the *whole system* of concepts of which the concept is a part. That is the *content* of the concept, and only a human being who understands the norms of the language community in which the concept exists can make such inferences, and therefore be said to understand the concept. The concept, so to speak, *channels* this content from the whole system of concepts, into the particular situation of its applicability.

A couple of points of clarification are required here. Firstly this distinction between formal inference and material inference. According to Brandom it was Frege who founded the analytical current in philosophy with the publication of his *Begriffsschrift* in 1879, and it was Frege's meaning that concepts entailed material inferences, and that his theory was by no means limited to formal inference. Brandom says that it was Boole who interpreted Frege in the spirit of formal inference, thereby limiting the scope of the theory to the kind of formal reasoning which is applicable only to mathematical sets, and the analytical tradition never recovered Frege's original meaning. Brandom says that classification was the master practice which underlay Logic from mediaeval times, and it was this castration of Frege's theory, which rendered reasoning as a process of formal categorisation by attributes and removed all material content from reasoning.

The use of the word 'material' to refer to what follows from a concept as a result of its interconnection with the world, rather than its formal conditions of existence, seems at first sight, a confusing choice of words. 'Material' seems to imply inferences which are limited to those given by natural science: thunder may be inferred from lightning, and so on. In philosophy however, the materiality of a thing means precisely the real interconnection of the thing with the rest of the universe, and marks the *content* of a concept as opposed to its form. As Engels put it: "The real unity of the world consists in its materiality" (MECW v.25: 41). The choice of the word 'material', therefore, is very apt. So material inferences equally include inferences that follow from the place of AWOL in military law, the

state of military conflict at the time, the relation of the military to the surrounding population, and so on – social and psychological phenomena, just as much as natural processes. The network of concepts rests on the fundamental unity of the material world.

So at a very basic level, this is what a concept is for Brandom. It is a possible predicate of a judgment (what can be said of something, to use Aristotle's expression), which can be the conclusion to a process of inference, *and* the premises for a process of inference. A concept is the source of inferences which originate in the concept's materiality, its connection with a whole set of relations or a theory.

What kind of existence does Brandom see for concepts?

A concept is a *norm of judgment*. That is, concepts are norms existing in some community which determine how judgments ought to be made, whether from the point of view of the community's metaphysical beliefs (their natural science) or their custom and practice (their ethics). As norms they are *implicit* in the linguistic practice and activity of a community more generally, and can be made explicit in the form of a concept. As norms of judgment, concepts are therefore the subject matter of philosophy. A concept may be applied erroneously, because norms do not determine actions in that mechanical sense, but nonetheless, a concept which is used *not* in accordance with norms is deemed to be used in *error*. So again, Brandom is a pragmatist in the sense that the meaning of a concept is to be inferred from its use.

Here Brandom comes close to Wittgenstein. He differs from Wittgenstein in that, whereas Wittgenstein does not privilege any kind of language game over any other, and says "there is no downtown in language-use," Brandom does insist that there *is* a 'downtown', namely reasoning and inference. Concepts may figure in all kinds of activity and language games, but "applying a concept is to be understood in terms of making a claim or expressing a belief. The concept *concept* is not intelligible apart from the possibility of such application in *judging*" (2000: 160). Brandom calls himself an inferentialist, because he takes the use of concepts in reasoning to be what makes all the other language games possible.

Brandom is close to Wittgenstein in another way too, which Brandom usefully explains in terms of the units of analysis used by Kant, Wittgenstein, Frege and himself. The unit of analysis is the simplest entity which can figure in the relevant theory, and upon which all the concepts of a theory must be built. According to Brandom, Kant takes

the Judgment as the unit of experience, Frege takes the smallest expression to which pragmatic force can be attached, and Wittgenstein the smallest expression whose utterance makes a move in a language game. In line with this tradition, Brandom take the *proposition* as his unit of analysis, so nothing smaller than a proposition can be recognised as meaningful. Brandom thus describes himself as a 'propositionalist'. A proposition is an expression used in reasoning, often represented in symbolic logic by the letters *p* or *q*. This choice corresponds to Brandom taking reasoning as the archetypal language game, and represents Brandom's concept of human action. A proposition is the simplest form of sentence but is slightly broader than a judgment, in that a proposition can make universal (quantifiable) claims. Brandom takes the proposition as the smallest expression to figure in his theory, his unit. He also demands that a concept must be capable of figuring as the premise or conclusion of a reasoning process. Does this mean that, contrary to normal usage, Brandom takes a concept to be a kind of proposition, rather than a subsentential expression such as a predicate or phrase? No.

By taking his unit as a proposition, Brandom remains on rigorous methodological ground. While giving us his concept of inference, whose simplest unit is a proposition, he avoids all the methodological problems which flow from trying to dissect propositions into parts with all the syntactic, pragmatic and semantic complexity of language-use, trying to define terms or expressions in some consistent way as the embodiment of a concept. Nonetheless, concept is the central object of his philosophy and concepts are associated with subpropositional expressions, such as predicates. Brandom resolves this by holding that concepts are to be *inferred from their use* in propositions. The fundamental form of the conceptual is the propositional, and the concept is to be inferred from the proposition. Concepts are the norms or rules for forming judgments, and can be inferred from the use of words in propositions. A concept is a predicate of a possible judgment.

Brandom makes all this very clear with his explanation of *bad concepts*. These are concepts which we don't use because their very utterance carries the inference that certain propositions follow from certain conditions, and if we don't agree with this inference we simply must not use the word. The clearest examples are terms reflective of racial prejudice such as 'nigger', which applies to Afro-Americans and carries the inference that it is a contemptible person. Such a term simply cannot be uttered. Another example Brandom gives is the

concept of 'blasphemy', of which the accused Oscar Wilde said "is not one of my words." These 'bad concepts' demonstrate that concepts have real content, specifically that concepts embody both the state of affairs they describe and the meaning or significance which could be ascribed to that state of affairs.

Given that concepts have real content in this sense, we can see that the use of concepts *commits* any person who uses a concept to the work of integrating concepts into a single whole, which is a person's world view; a person must answer for what flows from the concepts they use. When a rational person is presented with a new concept, its ramifications and its interaction with all the other concepts must be worked through. Incompatible concepts cannot be carried side by side with each other. Thus Brandom gives us an approach to understanding the development of the rational person. The same observations apply to the development of a science. "What makes it a *unified* whole is the *rational* relation among its parts" (2009: 52). Note that there is no implication here of any kind of 'master principle'. According to Brandom's pragmatism, the unified whole is only the outcome of the integrative work of a rational person.

Brandom also uses this idea to represent the intelligibility of the process of historical development, following the conception of the evolution of law worked out by the early American Pragmatist, Oliver Wendell Holmes Jr.. In this idea, a new precedent is set by a judge in the light of previous decisions, rather than by reference to general principles. In setting the new precedent, the judge takes previous decisions into account and acts consistently with them, but he or she is not obliged to deduce or justify the decision in terms of the precedents in the manner of a formal logical theorem. Brandom takes this pragmatist conception of Reason as a model to represent the process of the unfolding of history. He takes it as an alternative to Hegel's conception of the intelligibility of history, in which the concept pre-exists its manifestation in history. Holmes had put it this way: "It is the merit of the common law that it decides the case first and determines the principle afterwards" (quoted in Menand 2001: 338). At the basis of intellectual life must lie norms that are simply implicit in our practices. Thus, his principal project is to make 'explicit the implicit structure characteristic of discursive practice as such" (Brandom 1994: 649). And it is not only language-use in which concepts are implicit, but the entirety of material culture, the use of which is a key part of the process of acquiring the concepts of our culture.

One of the problems which arises in the study of concepts is how to resolve the conflict between several theories of the nature and origin of concepts, each of which seem to have some merit. These theories are (1) Empiricism, which sees the origin of concepts in experience, (2) Pragmatism, which sees the origin of concepts in their significance for action, and (3) Rationalism, which sees concepts in terms of their capacity for the production of good inferences in reasoning. Although Brandom sees himself as a rationalist and takes the rationalist view to be the decisive one, he suggests an eclectic approach, which recognises that all these sources play a role in the formation of concepts, and in their use in different circumstances.

So Brandom takes a concept to be a property of a proposition, for all intents and purposes a subpropositional unit. But concepts gain their content not from the proposition, but from its interconnection with other concepts, so meaning arises from this whole network of concepts. Brandom poses the problem this way:

> So the inferential significance of a belief depends on what else one believes. Thus the unit of meaning should be taken to be a whole theory, not just a single sentence (2000: 167).

Brandom's Critique of the Psychology of concepts

Brandom presents a damning critique of the Psychology of Concepts as developed by cognitive psychology, a branch of science connected with the Anglo-American tradition of analytical philosophy of which he is a part. It is of particular value that Brandom's critique is internal to analytical philosophy.

The central charge directed against the Psychology of Concepts is that their concept of concept is restricted to Representation. Jerry Fodor strenuously defends what he calls a "representational theory of mind," providing the philosophical justification for psychological research based on this conception. Representations may be more or less complex, but at root, representing something simply means responding differentially to features in the environment.

Brandom points out that a differential response to stimuli is far from what is distinctive about concepts. But this is exactly what the Psychology of Concepts takes as its object. Even a piece of iron rusts differentially according to the presence of water and oxygen in its environment, and in that sense makes a representation of an aspect of its environment. All the research on concepts by cognitive psychology has focused on disclosing how the mind *represents* objects, and no attention has been paid to how a subject understands the *significance*

of a concept, what is entailed by the concept. By focusing only on a function which human beings share with inanimate objects, machines and the lower animals, cognitive psychology has failed to shed any light on what is distinctive about concept-use, or for that matter, shown any recognition that such a distinction exists.

Granted that human beings form representations of objects in their environment, but this sheds little light on how a subject understands the object if at all, and indeed, no effort has been made to clarify what it might mean to 'understand' a concept. That a subject forms some kind of representation of an object or classifies the object under some category, still tells us nothing about how the representation enters into a reasoning process or has significance for action. A camera or a voice-recorder can make a representation, but is for that no closer to using the representation in a reasoning process. Drawing on Wittgenstein, Brandom points out that there is no conceivable kind of language game which could be played exclusively with representations. A concept which contributes nothing to the activity of reason or to discourse can surely not warrant the name of 'concept'.

Concepts do not only label their objects, but also describe the object. The only sense in which Cognitive Psychology addresses this aspect of concepts is its subordination to the practice of classification, of ordering objects into sets and subsets, a practice which stretches back to the Scholastics, underpinning traditional syllogistic logic, and represents an extremely restricted type of judgment. The only effort that Cognitive Psychology makes to address complex concepts is to allow for the union, intersection and negation of sets defined by bundles of attributes.

This is the drift of Brandom's critique of "representationalism" in contrast to his own "inferentialism." According to Brandom, the insights which are lacking in cognitive science were there in 1879, when Frege founded analytical philosophy. Is it Boole who is responsible for analytical science having so lost its way?

> We analytic philosophers have signally failed our colleagues in cognitive science. We have done that by not sharing central lessons about the nature of concepts, concept use, and conceptual content that have been entrusted to our care and feeding for more than a century (2009: 197).

And reflecting on the hierarchy of concepts which can be constructed on the basis of his own logical investigation of the formation of concepts, and speculating how this hierarchy might be reflected in the

phylogenetic and ontogenetic development of concept use, he reflects that:

> These are merely examples of potentially important questions raised by the hierarchy of conceptual complexity that cognitive scientists have by and large not been moved to so much as to ask. Why not? I think it is pretty clear that the answer is *ignorance* (2009: 223).

This criticism demonstrates that a number of serious deficiencies in the Psychology of Concepts and analytical science and philosophy generally, despite being characteristic of the analytical tradition, may not be necessary and essential features of analytical science. If we accept Brandom's internal critique of analytical science, then a critique of Brandom's theory of concepts perhaps offers a more significant critique of the analytical approach to the study of concepts.

Critique of Brandom's Theory of Concepts

Brandom identifies himself as a propositionalist. This means that a proposition is the smallest unit which he takes to contain all the essential properties of intellectual life. Concepts are taken to be properties of propositions. But it turns out that the content of the concept derives not from within the proposition, but arises through the interconnection of the concept with a whole network of inferential relations with other concepts. Brandom himself observes: "Thus the unit of meaning should be taken to be a whole theory, not just a single sentence" (2000: 167). But Brandom has not taken this step, and indeed, he is not theoretically equipped to take this step. The concept of a "whole theory" lies outside the scope of his philosophy, because in line with the Pragmatist tradition he has taken individual actions or interactions as the ultimate reality. This is essentially the same position Brandom takes when he seeks to render Hegel as a philosopher of Recognition, taking the unmediated interactions between two individuals as the ultimate reality and unit of analysis. This makes history look like a game of billiards with nothing but one-on-one interactions on a perpetually level playing field.

The metaphor of judge-made law cited above, which is a pragmatic rendering of Hegel's conception of sprit, by disposing of the need for a pre-existing principle governing the development of new propositions, seems to justify the idea that the whole process of cultural and historical development can be rendered as interactions between individuals. But this does not stand up. The process depends essentially on the availability of the precedents, the body of enacted

law and all the legal principles which exist in the form of documents. These documents are crucial mediating artefacts which regulate the development of the common law. The idea that the judge is able to make explicit what was merely implicit in the previous decisions is an attractive and eminently Hegelian idea. But it presupposes that these documented decisions act as mediating elements in the development of law, not to mention the entire material culture which supports the way of life in which the decisions are made by judges and enforced by a state.

A proposition appears to be something created and enacted in the moment when two people interact, but neither the language used in the interaction nor the concepts which are embedded in the language are created *de novo* in that interaction. The words and concepts relied upon in any interaction "are always already there in the always already-up-and-running communal linguistic practices into which I enter as a young one" (Brandom 2009: 73). Through the provision of these artefacts, every linguistic interaction is mediated by the concepts of the wider community.

If Hegel's idea of Recognition is taken out of the context of his whole method it is easily misunderstood, and taken to be an unmediated binary relation between two individuals, but this is never the case; interactions between subjects are always mediated. As Hegel states at the very beginning of the Logic: "There is nothing, nothing in Heaven, or in Nature or in Mind or anywhere else which does not equally contain both immediacy and mediation" (Hegel 1816/1969: §92). Analytical philosophy, and all varieties of interactionism and recognition theories, systematically ignore this maxim of Hegel's, which characterises his entire corpus. Mutual understanding even between strangers, apparently unmediated by common language or custom, is possible provided that each person can produce something which the other person needs. As participants in a shared culture there are concepts which are "always already-up-and-running." This mediating element is something not created by the interaction (although every interaction maintains and modifies the culture). The mediating structure exists independently of any single interaction and is a 'larger' unit, being a property or aspect of the entire community of which the partners to interaction are a part. Concepts belong to this larger unit, and are evoked in the interactions and thinking of individuals as mediating elements. This stands in contradiction to Brandom's efforts to found his inferentialism and his reading of Hegel exclusively in actions. It is as if actions and interactions (such as

uttering a proposition, recognising another individual, committing oneself to a concept, etc.) can exist prior to and independently of the cultural constellations and social formations which mediate individuals' actions and from which actions draw their meaning.

When Brandom ventures that "the unit of meaning should be taken to be a whole theory, not just a single sentence" he is admitting that a larger unit of analysis is required in order to make inferential actions intelligible. A "whole theory" cannot be conceptualised as a collection of propositions, any more than a human being can be conceptualised as a collection of molecules or a nation as simply an agglomeration of individuals. To grasp a "whole theory" one must understand the *unifying principle* which makes it a *whole* theory. This is absent from Brandom's work. Such units are beyond the horizon of his theory. I will come presently to the rare occasions on which he ventures beyond this horizon, but generally speaking, the source of meaning lies outside his field of vision, and consequently one must conclude that inferentialism as Brandom has developed it must fail. There has to be some social fabric. Communities cannot rest solely on unmediated interactions between otherwise isolated individuals, and in his effort to prove otherwise, Brandom locates himself squarely in the analytical tradition, sharing perhaps its most characteristic blind spot.

Brandom's commitment to holism goes only so far as the door to the academic neighbouring department. It is not so much Gottlob Frege's *Begriffsschrift* which is the foundation of analytical science, but the agreement of everyone to pursue a career within their own disciplinary boundaries, without reference to what is happening in any other department. Philosophers must stay out of social theory and psychology, and vice versa. That is the essence of the analytical tradition. But what passes muster as a theory of logic cannot get past first base as social theory.

Concepts are products and vehicles of reasoning, that is true. But concepts can only exist as formations of human psyches. And as we have seen, concepts are essentially the cultural products of whole communities, and sustained by those communities. Concepts are not simply the function of individual human beings. It has to be granted that an understanding of concepts as norms and vehicles of inference is necessary to the understanding of what a concept is, since concepts are *essentially* both psychological and societal entities. But a theory of concepts which pays no attention to the social and psychological existence of concepts is untenable. But this is exactly what Brandom does. He laments, in the final section of "Reason in Philosophy," that

cognitive psychology has not investigated whether the development of concepts in children replicates his hierarchy of the complexity of concepts. Well, why not spend an afternoon with a child psychologist and ask? The development of concepts in children has been studied, and not only do children *not* replicate Brandom's schema, but there are very highly developed theories of the development of concepts which demonstrate *different* genetic processes. If Brandom thinks there is reason to believe that the development of concept-use in children should mirror the structure of their semantic complexity, perhaps the way concept-use *actually* develops would give him cause to reconsider the significance he attaches to this hierarchy of conceptual complexity? Would it give him cause to reconsider his whole theory of concepts? He says that it is ignorance on the part of psychologists that they have not investigated the basis for his philosophy in psychology, but isn't it more reasonable to look to ignorance on his *own* part that he has developed a schema for the development of concepts without taking the trouble to enquire as to how it actually happens?

The problem of the origin of concepts in social formations and Brandom's lack of interest in investigating this origin is even worse than his lack of an active interest in ontogenetic development. In "Articulating Reasons" there is *one line* in the whole book touching on the societal origin of concepts. In the context of pointing out that virtually every sentence is unique, he says: "The linguistic community determines the correct use of some sentences, ...". How? He does not seem to realise what a problematic statement this is. There is a vast literature on the topic of the social origin of ideas, and the social conflicts tied up with the process of meaning-determination. But Brandom is either uninterested or unaware of these issues, systematically taking "society" to be a homogeneous and integral whole. And on the basis of his own failure to enquire into the origins of meaning, he simply takes concepts as given data. In "Reason in Philosophy" there is a chapter devoted to how "conceptual contents might be attached to states and performances." He opts for what he calls a *functional* approach:

> it is the activity of the system itself that establishes the conceptual contentfulness of the states it exhibits ... the system itself implicitly takes or treats its own states as contentful, and thereby makes them so. ... some vehicle ... for instance, sign-designs as marks or noises, performances as bodily

> movements, states as voltage distributions or neurophysiological conditions. ...

Leaving aside the efforts in the above passage to subsume human social life under a broader class of natural and mechanical processes, his claim is that "the system itself implicitly" determines the content of propositions. What system? How? Under any interpretation this claim is either empty or circular. We are concerned with how propositions acquire conceptual content, and Brandom has devoted his career to studying concepts but he stops just at the point when he would be obliged to enquire into just how conceptual content is created and vested in linguistic vehicles. This is untenable.

Brandom focuses his energies on how concepts regulate the reasoning process by acting as norms for judgment, but even within this domain of the investigation of norms he is acting blindly, because he considers only the *end product* of a long cultural and historical process of the development of norms. It is only possible to make sense of a complex whole (such as the system of norms operating within a community) by coming to understand it as the outcome of a long, conflictual process of development. To be more precise, norms must be understood *both* diachronically *and* synchronically, both as the outcome of a certain process of development (which shows why it is done this way and not that way), and structurally. The fact is that any real social formation is what it is as the result of certain historical experiences and social problems, and this is encoded in norms reflecting the metaphysical beliefs and ethical precepts that the social formation has adopted. For example, when a judge makes a determination of some dispute, they have recourse to precedents and it would be quite impossible to understand their determination, without having access to the precedents (as well as the social context in which the judge deliberates). Norms have a history and not only is it impossible to understand a norm independently of its history, it is actually impossible to understand norms in general, without studying the historical process which fashions norms. Brandom believes that norms of belief primarily regulate processes of inference and are properties of propositions. In other words, that norms regulate the business of doing philosophy. Norms and inference may be the subject matter of philosophy (I think Brandom is right on this), but philosophy is not primarily the subject matter of norms and inference. What *is* or may be the subject matter of norms, can be resolved only by a study of the process of the historical and cultural formation of norms and reason, outside of philosophy. Otherwise, to the philosopher, everything

seems to be internal to philosophy. It is not just a question of "placing both within a larger *historical* developmental structure" (2009: 81), for the *content* of norms is in that "larger historical development," beyond the domain of philosophy. The development of norms is the left to be the business of the History Department.

Brandom has however his own theory of history, including the history of norms. He thinks that norms are worked out by individuals making explicit what is implicit in the existing norms, as outlined in the narrative about judge-made law. Hegel's concept of recognition is also appropriated:

> So the process that synthesizes an apperceiving normative subject, one who can *commit* himself in judgment and action, become responsible cognitively and practically, is a *social* process of reciprocal recognition that at the same time synthesizes a normative recognitive community of those recognized by and who recognize that normative subject: a community bound together by reciprocal relations of authority over and responsibility to each other (2009: 70).

These two 'models' (judge-made law and recognition) are extremely rich, but it does not suffice in forming a theory of history to take a 'model' of interpersonal interaction involving *one or two individuals*, and then simply declare that historical processes involving human beings *en masse* are to be understood according to this 'model'. History is history, and specific concepts are required to understand its processes, which may be different from the processes which are manifested in the interaction between just two people. Most particularly, when two people interact, they must perforce have recourse to already-existing language, concepts and other norms, developed, maintained, transmitted, concretised and objectified in societal processes involving human beings en masse. Norms arise from the cultural-historical process, which entails the modification and inheritance of material culture from generation to generation. Person-to-person interactions are subject to processes and norms different from cultural-historical processes, which remain, for Brandom, a closed book.

Conclusion

Overall, Brandom's inferentialism is to be welcomed for placing concepts at the centre of philosophical enquiry where they belong, and rejecting the barren representationalism which has dominated analytical philosophy and its application in cognitive psychology. His

emphasis on concepts as possible conclusions and premises for inference is surely correct, reflecting what it means to *understand* a concept. Although I have not dwelled on Brandom's conception of norms, inasmuch as it unifies norms of belief, norms of desire and semantic norms, this too is a suggestion that deserves to be taken up.

The real problems with Brandom's theory are two-fold. Firstly, in common with all analytical philosophy, he tries to address the problems of the human condition without venturing outside the narrow confines imposed by disciplinary boundaries, and substitutes for the important connections with other disciplines, uninformed guesses unworthy of science. Secondly, and most importantly, he has appropriated a version of Pragmatism which is blind to mediation. The appropriation of Hegel and Kant via a Pragmatic reading is surely the most fruitful approach to philosophical problems of our times, but pragmatics – the study of the practical aspects of human action – always entails the *use of artefacts* which are already-existing products of the wider society. It is these material artefacts (including words and symbols) which are the real bearers of the culture accumulated by a community down the generations, insofar as living human beings continue to use them in their activity. Omit these mediating elements and you are left with the atomism which is so characteristic of liberalism and analytical philosophy.

Chapter 5. Where we are Now with Concepts

Thought-Forms and Mental Images

Robert Brandom has correctly drawn our attention to the two sides of a concept, that described by Representational Theories of Mind and that described by his own Inferentialism. It seems to me that he is correct in this. Both what constitutes the object's existence and what constitutes the object's significance must surely both be contained in anything we call a concept, but it is the *meaning* which is specifically human and conceptual. But let us reflect for a moment on the idea of concepts as representations.

A concept is often understood to mean a *thought-form* or 'mental representation', and whatever else it may prove to be, it must at least be this also, for otherwise we would all be talking at cross purposes. However, there are a number of problems with the very business of making thought-forms, in themselves, objects of discussion and investigation. Also, not everything that passes through our consciousness counts as a concept, and even amongst what does, not all can count equally as concepts. As Robert Brandom says, the concept of concept is a normative concept.

I understand by concepts thought-forms which *meaningfully represent* something in the world, so we need to work out what it could be in the world which a concept can 'represent'. To be a 'representation', a concept must represent *something*, whether well or badly. So concepts are in some way a more or less adequate 'reflection' of something which could be in the world outside thought. I say this fully cognisant of the limitations of the idea of concepts as 'reflections' of the material world. But there is a *reality criterion* which is relevant to *all* forms of consciousness and applicable to all forms of life from amoebae to human beings: consciousness is part of an organism's struggle for survival in its environment. Only insofar as its consciousness provides an adequate basis for the organism's activity in the surrounding world can the organism survive and flourish. Otherwise neither the organism nor its 'thought-forms' are viable. It is solely in this sense that I use the term 'reflection' to describe thought-forms. A map of the world is a reflection of the world, but only to the extent that it can be used as an aid to navigation; in other words, to the extent that it *means* something.

The ‘world outside consciousness’ must be understood as some collective form of life, for it is only in relation to the life-activity of the organism that a concept has any bearing and can have any real meaning. If a certain concept reflects some material object, just what aspect of the object is reflected: its weight, the number of its atoms? Concepts do not ‘reflect’ the infinity of such attributes of an object, but only those that are in some way relevant and meaningful in relation to a specific interaction with human activity. Just as a microscope or a telescope, a piece of litmus paper or a radiation detector, each reflects objects in its own way, concepts reflect properties of the natural world, only insofar as those properties are manifested in human activity. So there is a real problem in taking the representation of an object given by a concept to be any kind of sensuous image, for there is in general no sensuous form identifiable with a concept, except that narrow class of concepts (the colours, etc.) where this is trivially so. Sensuous forms provide clues as to the identity of the object in the same way a detective collects clues to the identity of the criminal.

Consciousness mediates between an organism’s behaviour and its own physiology. The organism’s behaviour and physiology are part of the material world, but consciousness relates to the world only mediately, via the organism’s activity. The idea of direct, unmediated contact between a thought and the material world outside consciousness is incoherent and meaningless. A concept is meaningful only insofar as it is in some sense, direct or indirect, a guide to reality in terms of what matters, in terms of the organism’s *real-life activity*.

Even though we know that dreams serve an important role in maintaining our health, we don’t call the forms of consciousness we experience while dreaming ‘concepts’. Nonetheless, it doesn’t matter how weird or contradictory a concept may be, whether it belongs to religious fanaticism, superstition or a computer game, those thought-forms which are part of how people organise their own activity within some collective form of life, count as ‘concepts’. Doubtless it is impossible to draw a line between some chimera we experience during a drug-induced delirium and the concept of alien abduction, but there is nothing to be gained from exploring such elusive border lines. The point is that concepts are not just any mental phenomenon, but those which are an essential part of some collective form of life.

I am talking about *human* life. Some of the most elementary forms of conscious activity are available to animals, and even machines can effectively mimic some forms of human action. But this is not about

rat-racing or computer programming; it is about human life. There is always room for surprises here, and whether or not a chimpanzee has been observed using conceptual thought is not a question I will be touching upon here. But surely conceptual thought proper is available only to human beings. The very primitive forms of syncretic thought characterising, for example, the normal mode of conscious activity of infants, qualify as 'concepts' only insofar as they constitute forms of conscious activity which are *genetically connected* to conceptual thinking or enter into conceptual thought properly so called as a component part.

So sensuous images are really a misleading way of thinking of concepts. A thought-form appears to be a very complex kind of thing, more to do with symbols than images.

Let us accept the idea of a material world given to consciousness through sensation. But this just moves the problem of forming concepts of things one step downstream. The problem of making sense of a stream of electrochemical impulses on the nervous system is essentially no different from the problem of making sense of the electromagnetic and mechanical vibrations impacting on the sense organs. If we accept the idea of the senses giving us a mental picture of things in the world which we can sort into categories, then in effect we are suggesting that there is a little human being, a homunculus, sitting inside the brain cavity, watching a kind of TV screen and taking notes. But how does the homunculus *understand* what it sees on the screen? Does it have an even littler homunculus in its own head? And it makes no difference if you call the little TV screen "neurons" and the homunculus a "control centre," (Damasio 2003: 207-8) or "centralised strategic processing mechanism" (Barsalou 1992: 90), the problem is the same.

A camera represents but it does not understand, and surely if we are talking of concepts it is *understanding* that we are concerned with. A concept is not a material thing, and nor is it a pattern of neuron activity. The whole idea of a concept as a copy of something in the world is quite incoherent from the point of view of science. If concepts are mental representations of categories of things in the world, what aspects of reality are represented? who looks at and interprets the representations? And how?

How can a thought-form be identical to (or 'map on to') a material object? The very question poses an impossible dichotomy, but how else can the idea of truthful reflection of the world be made sense of? In fact, concepts cannot be understood as mirror-images of

Doppelgänger in the material world, but only as entities which *span both worlds*. Concepts must be both mental *and* material. Instead of looking for matching pairs, we should look for entities which by their very nature transcend the mind/matter dichotomy by participating in both thought and matter. For this, we must turn to the *real forms of mediation* by means of which human thinking is connected to our material environment. So, two interrelated kinds of entity hold the key: *artefacts* (including words) and *activity* (including speech).

Artefacts are all those products of human labour which are objectifications of human needs and aims, materialisations of thought – words (whether spoken or written), tools, machines, buildings, books, movies and even our own bodies: objective because they are material objects, subjective because they are what they are only thanks to their place in the social life of human beings. *Activity* is all the systems of purposive social action by means of which our thoughts are manifested and our needs satisfied: subjective because we mean them, but objective because they happen in the material world. Actions are always mediated by the use of artefacts, which are themselves products of social activity, given meaning by those same activities.

But this still leaves unresolved the problem of how artefacts and activity are correlated in a concept, of exactly what can exist both subjectively and objectively to be constituted in consciousness as a concept. *Situation* meets these requirements, or we could say 'problem-situation', or 'predicament', but I take it as implicit in the idea of 'situation' that it represents problem at some stage of gestation, crisis or resolution, which constitutes the subjective significance of some conjunction of relations. Drama also provides us with notions of scripts, scenes and other event, story or character schemas which are also subjective-objective entities. It is important to highlight the special ontological status of these subjective-objective entities, because insofar as concepts represent, it must be these which are represented.

Consciousness is part of the existence of a situation too. Concepts, or situations, are both subjective and objective. When we talk of concepts as representations, images or whatever, as *mental objects* of some kind, this is a kind of *reification*. We cannot in principle observe our own consciousness, let alone forms and shapes within it. Consciousness *is* the observing, a process – not the observ*er* or the observ*ed*, but the observ*ing*. When I look at something it is that thing that I see, not a representation of it. An illustration of how implausible the idea of an 'internal image' is, is given by Barsalou:

> ... categorical knowledge is grounded in the brain's modal systems rather than being represented amodally in a modular semantic. For example, knowledge about dogs is represented in visual representations of how dogs look, in auditory representations of how dogs sound, and in motor representations of how to interact with dogs. Because the representational systems that underlie perception, action, and affect are also used to represent categorical knowledge, the conceptual system is neither modular nor amodal. Instead, perception and conception share overlapping systems. (2008: 92)

Insofar as a human being forms a representation of something, it seems inescapable that the whole of our body, and the artefacts we use, are entailed in forming any representation.

Human beings are born realists. We act as if the things we perceive exist independently of our consciousness and activity. Only later, thanks to critical reflection, do we come to realise that the concepts we form of things in the objective world are actively constructed from material belonging to our own culture and activity, whilst other people may think of things differently, through the lens of their culture and activity. In the same way, we are also born realists with respect to our self-consciousness. Even if we accept that our concepts are not copies of things in the material world, we tend to naively take concepts to be entities 'existing' in our mind. But as we have seen, this cannot be the case. We may learn to take a critical attitude to both the content and form of our own consciousness. Ruth Millikan (in Margolis & Laurence 1999: 537) tries to avoid reification by saying that a concept is a human *ability* or *capacity* rather than an entity. But as Anna Sfard (2008) convincingly shows, abilities and capacities are themselves products of reification, giving seeming permanence to what may be subject to unnoticed situational variation. Linguists avoid the problem altogether by treating concepts solely in the form in which they are objectified in language, whilst sociologists and behaviourists avoid the problem by concerning themselves only with behaviour and treating consciousness as a 'black box'. But these routes are not available to psychology, which must perforce make consciousness the object of its investigation.

Let us very briefly review what is known of *visual* images. Physiology tells us that nothing like the image projected on a movie screen is provided to the brain by our eyes. The work of V. P. Zinchenko (Zinchenko & Vergiles 1972) has established that visual perception is

constructed from involuntary saccadic eye movements of 20-200 msec in duration and it is only change in the stimulation of the retina which produces a visual sensation. Our visual awareness is a highly constructed experience. The first step an infant takes towards human cognition is when it is able to intervene in the intense stream of incoherent visual (and other) impressions and momentarily *prolong* an impression which stands out for some reason. This infant eidetism, the prolonging, or freezing, of a sense impression beyond the time when the stimulus is present, is the first manifestation of control over perception, and the first departure of sense experience from what is immediately given from the environment. But what we talk of as an image is here just an after-effect of the action of the environment on the sense organs. Later this relative independence from the immediate stimuli allows us to isolate separate aspects of the stimulus and combine them in different ways, more and more under the control of the individual. None of this is *conceptual* thought, but this active attention to stimuli does lay the foundation for conceptual thought. But thought is conceptual to the extent that it is *freed* from the immediate situation.

We know from neuroscience that the shape, speed, trajectory, colour and meaning of a moving object are perceived by distinct neuronal modules. There is no point in the brain where the various streams of sense data are brought together to form an integral image, any more than an image exists at a point behind the mirror in any material sense. And whatever is involved in thinking of a concept, it always entails a word or some other artefact which symbolically represents what is universal, whether or not an exemplar of the object is also involved. Concepts may entail mental images as well, as part of a more complex process. Concepts can only be made sense of by taking nervous activity to be *just one* aspect of a concept, along with the artefacts implicated in a person's actions and the activity of which their actions are a part: "coupled systems," to use Nancy Nersessian's term.

Networks, Plots, Categories, Theories and Institutions

The taking of concept-formation as a process of categorisation is not necessarily linked to the taking of concepts to be images or representations of the object. Nor is categorisation necessarily linked to the presumption that the criteria for categorisation are contingent attributes abstracted from the object. Both representationalism and anti-essentialism are problematic aspects of the cognitivist conception

of categorisation. But an important feature of categorisation is simply that it is a generalisation. Categorisation is one possible means of linking an object to other objects and specifically to objects of broader scope and significance, to a conceptual context. At the end of a process of categorisation, in which a concept is successively stripped of contingent attributes and concreteness, one would arrive only at the completely empty concept of 'everything'. But the first step of categorisation is always meaningful, even if categorisation cannot *by itself* exhaust a concept.

You may not have a concept of an 'armoire' but knowing that it is an item of furniture would surely be a step towards and indeed part of the concept of armoire. A number of approaches to concepts suggest different steps which have the function of connecting the object into a wider concept in some way. For example, I have mentioned the theory theory which rests on the fact that concepts are always units of some theory, a general idea about some domain of phenomena, whether formal or informal.

Then there is the idea of a semantic network in which the positing of any one concept activates a range of related concepts. For example, 'spoon' activates a semantic network of kitchen things, so that 'knife' is immediately taken as a kitchen knife. The idea of semantic network is a generalisation of a range of types of association, among which one could include the theory theory as well as the network created by any institution (cuisine) or complex object (kitchen). For example, you may not know what a carburettor really is, but you may know it as an automobile component, and that is *part of* the concept of it.

If we take an 'activity', to mean an aggregate of individual actions which has an on-going existence in society at large, in pursuit of some objective, then subsumption under such an activity, of whatever kind, serves to connect a concept into some definite series of other, related concepts. Carburettor and fan belt are not just associated because they are both car parts, but each plays a very specific role in effecting the correct functioning of an internal combustion engine. The same goes for the theory theory. Likewise, accountant and cashier are not just associated by both being bureaucratic roles, but have specific relations within the division of labour of bureaucratic organisations.

Taking concepts as indicating some definite connection with a social practice has the same function of explaining how one concept sets the scene, so to speak, for another, but offers the prospect of contributing more to a concept than its simple association with other, related concepts. The narrative approach goes one step further in as much as

it organises concepts into a specific structure, namely a plot arising from a predicament. Metaphors and analogies also link a concept to other concepts, though in this case the linkage is imaginative rather than contextual.

The question remains as to whether these forms of association, connection or contextualisation have any psychological reality. Does the narrative from which we learn about 'refugee' have any psychological reality? Does our practical knowledge of the workings of internal combustion engines have any relevance to the concept we have of 'carburettor'? Does our knowledge of cricket have any relevance to what we make of the concept of 'keeper? If so, is there more to association than frequencies on a table of word associations? Does the practical intelligence acquired in some field of practice have a real effect on how we conceptualise the situations and objects we deal with in that practice?

Jean Mandler proposed *scripts* or story schemas (1984) or schemata (Neisser 1967) as a basic mental structure, corresponding to patterns of action, as units of human life and the foundation of concepts. These concepts have been used in a great deal of psychological research and therapy, and provide a rich source of understanding. My concern is that these ideas represent only the 'molecular' level of situations and relationships, whereas concepts represent the molar or broader motivating context of the situation.

I think this is the main problem, if and how the concept of something connects up, psychologically speaking, with the broader meaningful setting in which the situation arises, and if and how a concept draws real content from such connections.

Conclusion

Cognitive psychologists have determined that representations of individual, idealised exemplars of objects instantiating a concept play a role in the psychological reality of concepts. Further, it has been found that the ideological formations which determine people's expectations in relation to their experience also play a role in how people grasp the world around them. People call on beliefs about the defining features of kinds of object when categorising them or recognising them. But how individual representations interact with ideological contexts is not so clear. Cognitive psychologists have also disproved a number of preconceptions which may have been taken for granted within analytical science, and in so doing, have generated a very helpful dialogue about the psychology of concepts.

The test procedures used are invariably based on the untenable assumption that some invariant mental representation, called a concept, exists, which may be elicited by any test procedure without the test procedure itself being a determining factor. But if we are to make any sense at all of the idea of a person 'having' a concept of something, then that concept has to be admitted to manifest itself in a wide variety of different behaviour under different test conditions. But how to represent a concept in such a way that responses elicited in a wide variety of test conditions may be unified as realisations of one concept?

Robert Brandom has demonstrated that representational theories of the concept tell us only one half of the story, and the less essential half at that. Concepts testify to the connection of some specific situation to a set of inferences, and it is these inferences which the concept associates with the conditions of its existence which is characteristic of conceptual thinking. A concept registers a predicament and its resolution, coming to us as the 'lesson' of a story.

Linguists have determined that the cultural world, with its mass of artefacts, especially language, and our collaborative use of these cultural products, is crucial to if not exhaustive of the formation and use of concepts. Some linguists also believe that our comprehension of abstract concepts is built upon more visceral and immediate practical experiences, by means of metaphor and mental models of situations.

It is almost impossible to make generalisations about the diversity of approaches to the study of concepts which I have reviewed. But this in itself speaks of the main challenges facing the study of concepts. The dominance of analytical science and philosophy over the past century has brought a number of problems to the study of concepts. The central characteristic of the analytical method (which is also its great strength) is the segregation of disciplines. This goes to the extent that those who follow the analytical method in psychology, such as the Cognitive Psychologists considered above) may be ignorant of work of analytical philosophers and sociologists, and vice versa. On the other hand, philosophers in the 'philosophy of mind' do not offer a critique of analytical science at all, but rather constitute a sub-discipline within analytical science. So, the separation of experimental science from genuine philosophical critique has not only allowed naïveté to prevail in the Psychology of Concepts, but has promoted the *fragmentation* of the study of concepts between numerous disciplines.

Difficult as this situation has been in all domains, it has created an impossible situation for the science of concepts, because concepts are by their very nature *subjective/objective* entities. This not only means that concepts span both psychology and the social sciences, and require an interdisciplinary approach, but at the most fundamental level they violate the ontological presumptions of analytical philosophy. The very idea of entities which are both subjective and objective also violates the logical principles of analytical philosophy, which is wedded to formal logic. *Formal logic* obliges a dualistic approach to concepts which creates an impassable barrier to the solution of all the major problems confronting the science of concepts. We need to revive the art of thinking with true concepts rather than tick-boxes.

The conviction that concepts are the products, or outcomes, of a process of development which can be understood separately from the process which produced them has led to a situation in which many cognitive psychologists, linguists and learning theorists nowadays reject the very idea of 'concept' having a place in science. We urgently need an approach which grasps concepts as *processes*, not things.

To address these problems I shall make a detour into the history of philosophy where these problems were resolved speculatively, without recourse to the methods of experimental science.

Part II. Hegel

Chapter 6. The Story of the Concept

Descartes and the Mind/Matter Dichotomy

If we are to investigate forms of consciousness we must begin with Descartes. Although it is very fashionable nowadays, or at least until very recently, to denounce René Descartes for having been guilty of dualism, it is very rare to find a writer who can really address the issues which Descartes was tackling and avoid mind/body dualism. Nowadays, we want to do away with *all* dichotomies, *all* forms of dualism. Things are never just black and white, good and bad, male and female; the edges are always blurred and there are always in-betweens, and to deny this in *any* domain of enquiry is deemed to be not only wrong but reactionary. No-one, it seems, dares to say with Descartes, that thought is something categorically different from matter.

The point is that Descartes effectively *discovered* the category of 'consciousness'. By making consciousness in-itself an object of investigation he laid the foundation for both modern philosophy and psychology, the science of consciousness.

Descartes stands at the very beginning of modern European philosophy. He was hostile to all kinds of received knowledge – the literal truth of the Bible, the authority of the ancients in science and common sense – and reflected on the evidence we had for our beliefs, putting no value whatsoever on the inherited wisdom of the past. At the same time, he found the burgeoning interest in the observation of Nature to be naïve. The Empiricists were also sceptical in relation to 'book knowledge', but not in relation to perception. They uncritically identified what they apprehended with their senses with what existed outside their consciousness.

Descartes brought a withering scepticism to bear on the Empiricists' faith that their senses gave them direct access to objective reality, that if they laid all the old books to the side and used their own eyes, then they could discover the necessary laws governing Nature. How could you be sure that what appeared to you was really the case? How could you know that you were not profoundly mistaken? Perhaps you were dreaming. Descartes was the first modern writer to draw attention to the fact our ideas were *not* replicas of things existing outside of

consciousness, given to us in the form of sense-impressions; that consciousness and its forms were distinct from matter and its forms.

But not only that. As the inventor of coordinate geometry he could do some diagrams and algebra on a piece of paper and tell an artillery man at what angle to fire his cannon in order to send a cannon ball over the wall of a besieged city. How was this possible? How was it possible for the mind to represent in symbols and accurately predict the trajectory of a real iron ball as it flew through the air? These symbols were not 'mirroring' the cannonball, and yet by thought alone, Descartes could know the movement of the cannon ball even before it was fired, and better than the cannoneer himself.

So Descartes was confronted by two problems: Firstly, was there *any* certain knowledge? Was there any firm starting point on which science could reliably build? Secondly, given the categorical difference between thought and matter, how were thought and matter *connected* (as they obviously were) so that the movement of cannon balls and stars could be predicted by Reason[*]? If thought and matter were not connected at some point, then they would be inhabiting two different universes and science would be impossible. How *was* science possible?

In relation to the problem of certainty, Descartes observed that even though he could trust neither his senses, his own consciousness nor received wisdom, he could at least be sure that his own consciousness *existed*, for that is what is immediately given to him, even when he is asleep and dreaming, and thus that he, Descartes, exists. He also reasoned that since he did not freely create what was in his consciousness, something *else* outside of his consciousness and greater than him must also exist. *This too* was a certainty. From that starting point, remembered in the Latin maxim *cogito ergo sum*, "I think therefore I am," Descartes built his system, including a theory of thinking and the emotions. This was an ambitious starting point: to create a foundation for science under conditions in which you could not even rely on the evidence of your own senses and self-consciousness. He still saw consciousness as some kind of endowment given to human beings, while the universe outside of human

[*] Early philosophers, especially Hegel, "deified" abstract entities and even though *all* nouns have capitals in German, and frequently in old English, it is common to use the initial capital when referring to these deified nouns in modern English. I will occasionally use this practice when discussing pre-20th century philosophy.

consciousness was soulless and governed by rational and *mechanical* laws.

As is well known, this starting point, true and valuable in itself, led Descartes and those who followed him into intractable problems, summed up in the condemnation of Cartesian Dualism. Not only did mind/body dualism pose the problem of finding where and how the two domains of reality interacted with one another, the dualism flowed through to all the forms of thought and matter: how was each form of thought (*i.e.*, concept) connected to the corresponding form of being (*i.e.*, material object) it reflected? Posed this way the problem leads to nothing but nonsense.

Spinoza tried to overcome Descartes' dualism by declaring Nature, inclusive of human beings, to be not the work of God, but God Himself, and that rather than matter and thought being distinct substances, Spinoza said there was only one Substance, and thought and extension were but two *attributes* of that one Substance. But this simply displaced the dualism of substances to a dualism of attributes. Spinoza also maintained Descartes' *mechanical* conception of Nature, leaving human beings subject to an absolute mechanical fatalism. And it got Spinoza denounced as an Atheist and his works were effectively suppressed for more than a century.

The mainstream response to Descartes was a series of Rationalist critiques of Empiricism which eventually led to the profound scepticism of David Hume and the impossibility of any knowledge of necessity in Nature. If all we know are the images produced on our sense organs, then we can in principle know nothing with certainty *outside* of that, of what lies *beyond* sensation.

Kant responded to this with his Critical philosophy which set out to determine the limits of knowledge, on the model of individuals processing the data of experience with an innate faculty of Reason. Kant's masterful system of concepts stands today as a monument of philosophical precision, and underpins the work of Kantians such as Jean Piaget and Noam Chomsky. But 150 years after Descartes, Kant's system remained dualistic, with appearances on one side, and unknowable things-in-themselves on the other, and the human subject split between faculties of Intuition and Reason and numerous other such dichotomies. Ridding philosophy of dichotomies proved to be not so easy!

Descartes mixed up the problems of ontology and epistemology. His mistake was *not* in making a categorical distinction between thought

and matter, but in making the *ontological* distinction between thought and matter the *starting point* for the solution of problems of *epistemology* (the theory of *knowledge*). Ontology is the study of the kinds of things that can exist. Thought, or Consciousness, is what appears to us, immediately, whether asleep or awake, whether animal or human. Thought does not *exist*. Matter is simply everything outside of thought. That is the beginning and end of what can be deduced or proven from the categorical difference between thought and matter, but it does function to rule out certain kinds of confusion and evasion.

My consciousness is *not* a form of matter, because the very *meaning* of the word 'matter' is that it is *not* just in our mind, but *exists outside our consciousness*. So it would be self-contradictory for me to say that my consciousness is material. But there is a sense in which I can say that *your* consciousness is material, since it is outside of my consciousness. *Your* consciousness is not given to me immediately, but on the contrary, like the force of gravity and the ambient temperature, I have to infer it from observation. If I were to extend the category which marks my thought off from the material world, to include *your* thought, then I am in effect, *reifying* thought and making it into some kind of 'stuff' with an objective existence side-by-side with matter.

Human consciousness arises from the interaction between human physiology and human behaviour. Both these two processes are perfectly objective processes which are observable. Thought cannot be identified with neurons. I can think *of* a neuron, and I can think *with* a neuron, but a thought cannot *be* a neuron or any combination of neurons or neuronal processes. And nor is a thought identical to its object, either in form or content. But when my cat looks behind the mirror to find the other cat, I know what's in his mind; but it is an appearance, an illusion; it is not *my* illusion, but *his* illusion, and such appearances can be studied scientifically.

To say that the consciousness of some other organism is material is not to say that thought is any kind of 'substance' in the everyday meaning of the term 'substance'. In philosophy 'substance' means something that is irreducible and is not to be derived from something else. So Descartes' mistake was to extend the idea of his own consciousness as something immediately given to him, to everyone else's consciousness, thus transforming an epistemological category into an ontological category. Psychology is a science because consciousness can be an object of science, but not by *introspection*. When Descartes said that thought was a 'substance', he did not mean

that thought was some kind of 'stuff'. Nonetheless, as Lakoff observed (1980; 1999: 235-266), to talk about thought as if it were a substance (in the everyday meaning of the term) is a common *metaphor*, for the very good reason that it is impossible to talk about thought without metaphorically reifying it in one way or another. Actually, it is quite nonsensical to talk about thought (or consciousness) as if it were some kind of 'stuff'. But in science, forms of words notwithstanding, we have to understand that thought is *not* some 'substance' (*i.e.* stuff). Thought is an appearance mediating between two objective, material processes, our behaviour and our physiology.

Lakoff (1999) has a great deal to say about the various metaphors for mind, but in over 600 pages on the topic of "embodied mind," the closest he can come to explaining the *difference* between mind and matter are circular and/or evasive formulations like:

> The word *mental* picks out those bodily capacities and performances that constitute our awareness and determine our creative and constructive responses to the situations we encounter. Mind isn't some mysterious abstract entity that we bring to bear on our experience. Rather mind is part of the very structure and fabric of our interactions with our world (1999: 266).

Granted, thought is not a "mysterious abstract entity," but what *is* it? If mind is "embodied" then what is it that is embodied? If mind is "part of" our interactions then *what* part is it? Did someone say that mind is not embodied? Did someone say that mind is not part of our life? Did someone say that mind is a "mysterious abstract entity"? If the problem of the distinction between mind and matter is evaded in this way, with claims like "mind is embodied" or "thought is material" so as to elide the distinction between thought and matter, then no real break from naïve analytical philosophy is possible. It is easy to ridicule and exaggerate the efforts of others, but not so easy to make the distinction oneself. Every adjective you like can be ascribed to thought: embodied, material, connected, bodily or whatever. What you think *of* is material. What you think *with* is material. But if you don't recognise that your thought is fundamentally something different from what you're thinking and what you're thinking about, then either you're crazy or you don't understand the question.

So Descartes was correct in marking the distinction between his consciousness and matter, but mistaken in making this *ontological* distinction the starting point for a study of *epistemology*. The

distinction which properly marks the beginning of the study of the sources and validity of knowledge is the *subject/object* relation. In this case it *is* false to treat subject and object in a dualistic or dichotomous way, there *are* halfway in-betweens, the boundaries *are* blurred. Subject and object are a mutually constituting unity of opposites. But the subject/object relation is one which can be found not only in relation to a person and the world they know, but it can be found even in the actions of a computer, an institution, or a natural process. The problem of knowledge is the problem of the subject/object relation, not an ontological problem.

Descartes was able to *pose* the problem of knowledge but he failed to suggest a fruitful method for its solution.

Kant and the Subject/Object Relation

Immanuel Kant was born in 1724, and was the dominant philosopher of his time and remains to this day probably the philosopher who has been the most influential in the development of analytical philosophy and science. Kant's project was to create a philosophical system which fulfilled the aims of the Enlightenment to place philosophy upon a rational, scientific foundation, free of contradictions and speculation. It was to be a *critical* philosophy, that is, a philosophy which would know its own limits, and avoid both baseless dogmatism and scepticism.

"I freely admit," said Kant, "it was David Hume's remark [that Reason could not prove necessity or causality in Nature] that first, many years ago, interrupted my dogmatic slumber and gave a completely different direction to my enquiries in the field of speculative philosophy" (Kant 1787). Hume's "Treatise on Human Nature" had been published while Kant was still very young, continuing a line of empiricists and their rationalist critics, whose concern was how ideas originate from sensation. Hume was a sceptic; he demonstrated that causality could not be deduced from experience. One could witness the fact that one event has followed upon another time and time again, but this did not prove that the first was the *cause* of the second or that the second *necessarily* followed from the first. This scepticism shocked Kant. If this were true, then there could be no science. In an effort to rescue the possibility of science, Kant set about constructing his 'third way' between dogmatism and scepticism, whose aim was to determine the limits of knowledge and draw a line between what was knowable and what was not knowable.

An important step in Kant's solution was his conception of the transcendental subject:

> By this 'I', or 'He', or 'It', who or which thinks, nothing more is represented than a *transcendental subject of thought = x*, which is cognized only by means of the thoughts that are its predicates (Kant 2007).

So the subject for Kant has no particular nature of its own, other than having access to universal, natural and invariant principles of reason with which to interpret what is given to the subject in experience. This device allowed Kant to avoid the contradictions which had plagued earlier philosophers, but it led to a new range of problems. Kant had escaped the problems of the subject's interaction with the material world by in effect placing the subject outside of culture and history. What had been a natural scientific problem of how material processes entered the mind, now became an entirely general, logical problem of how the properties of one (object) system could be reproduced in another (subject) system. It is this approach which has, for example, allowed cognitive science to use computer models of cognitive processes, without having to be concerned with the obvious fact that a person is not a computer. The eternal changeless subject could be analysed by the methods of philosophy, without any empirical content, at the cost of reducing the subject to *nothing* in particular.

One of the consequences of Kant's transcendental subject was a reformulation of the problem he inherited from the rationalist-empiricist debate: there were two kinds of knowledge, knowledge derived from two distinct sources which had to be combined somehow. On the one hand we had sensation (or 'intuition'), which was the immediate basis for experience, the beginning of all knowledge, and on the other hand, we had Reason (or 'concept'). Reason was needed to process the data of experience and mobilise the categories through which sense could be made of experience. So we had two faculties: the faculty of reason and the faculty of intuition, and through reason we could acquire knowledge of the categories, of time and space, logic and so on. This remains the general schema for most cognitive science, including Piaget and Chomsky, for example, with continuing speculation as to the precise nature of the universal, innate faculties which allow human beings to grow up into a diversity of cultures.

One of the other implications, an essential part of how Kant resolved the contradiction he had inherited, was that the world was again divided in two: on our side was the world of appearances, in which we have constructed some meaningful image out of the stream of data

from Sensation, using our capacity for Reason. On the other side, beyond and behind appearances, lies the thing-in-itself, about which, in principle, we can know nothing.

Herder, Goethe and Culture

The key insights upon which I will be relying for a critical approach to the psychology of concepts first arose in the philosophical reaction of the Romantic movement to the Enlightenment. The Enlightenment, whose foremost philosopher was Immanuel Kant, had overthrown religion, superstition, privilege and narrow parochialism. Behind the banner of the universal rights of man came universal laws of Nature. These laws could be determined by the exercise of Pure Reason, for which every person possessed the innate capacity. Thanks to the universal faculty of Reason and a separate capacity for immediate sensuous observation, the world was divided into appearances on one side and unknowable things-in-themselves on the other. The human being was simultaneously *flattened out* into a uniform type and *broken up*, analysed into so many separate faculties and isolated from the world.

Romantic Science reacted against these aspects of the Enlightenment, and its first exponent in philosophy was Johann Gottfried Herder. Herder made his name in 1770 at the age of 26, with a *Treatise on the Origin of Language* (1772). He was the first philosopher to claim that Reason was *not* a universal, innate faculty, but rather that consciousness differed radically from one epoch to the next, from one people to another and from one individual to another. This was because how people think would reflect the cultural practices of which they were a part. He held that thinking is essentially dependent on and bounded by language-use, that the formation of concepts is intimately bound up with sensation rather than belonging to a distinct faculty, and that words are to be understood in terms of their practical usages rather than with reified referents (Forster 2007).

Herder (1774) is largely remembered as a philosopher of history, through his enquiry into *Zeitgeist* (spirit of the times) and *Volksgeist* (the spirit of a people). He approached the psychology of an individual first of all as that of a member of a definite people and class, with a shared history and culture, rather than proceeding the other way around, as if the nature of a society could be deduced by adding up the nature of its individual citizens.

So Herder was not only the first to propose an intimate connection between thinking and language but is credited as the founder of

cultural anthropology, an important philosopher of art, a linguist and the founder of cultural psychology. Herder was not a *systematic* philosopher however, and unlike Kant and Hegel he did not leave us an elaborate system. Most of his writings were critiques of Enlightenment arrogance.

His friend Goethe rightly said that "The greatest discoveries are made not by individuals but by their age." And it is probably more true to say that the basic philosophical ideas of cultural psychology and activity theory emerged in Germany from the entire Romantic movement and the Classical movement which followed. Wilhelm von Humboldt, the founder of modern linguistics and creator of the Prussian education system, Goethe – poet and scientist, Fichte who first made Activity the foundation of the psyche, Hegel, the great dialectician, Feuerbach, the first materialist critic of Hegel, Fichte's follower, Moses Hess who wrote the "Philosophy of the Act" and introduced Marx to communism, and ultimately Karl Marx himself.

Herder, like Goethe, was a pantheist, and as such he risked denunciation as an atheist. This had been Spinoza's fate. For a century after Spinoza's death in 1677, Spinoza was a 'dead dog'. In 1787, Herder published "God, some Conversations" (1940) in which he not only rehabilitated Spinoza but *improved* on Spinoza's pantheism. According to Herder, God, i.e., Nature, was *active*. Nature was not just some gigantic machine, but was full of intentions, of striving, of opposing forces, and human beings were a part of that striving and activity. Activity was *natural*, and didn't need to be explained by some extramundane life-force or soul. It was this revised Pantheism which expressed the spirit of Classical German Philosophy and which inspired humanist philosophers who sought scientific explanations for Nature and human life for a century afterwards. Particularly through the popularity and literary brilliance of Goethe, this naturalistic/humanist Pantheism became respectable.

In his studies of national character, Herder said that every people (and every single person) had their *Schwerpunkt*, which was uniquely theirs and made them what and who they were, and which they could not be forced to part with. *Schwerpunkt* is one of those untranslatable German words, but I take it as 'strong point' (OED 2009): every people, every person has their characteristic 'strong point', the activity in which they have the 'home ground advantage', so to speak. This idea was further developed by Goethe.

Herder was a somewhat irascible character and never received the recognition he deserved for the revolution in science he initiated.

Hegel gives him no credit whatsoever in his History of Philosophy, and Schleiermacher, Fichte and Alexander and Wilhelm von Humboldt offered no recognition for what they owed to Herder. But Goethe made the philosophical debt he owed to his friend quite explicit and Goethe exercised enormous influence over several generations of philosophers, poets and scientists.

Goethe was the first European celebrity. He became world famous at the age of 25 with his romantic novel, "The Passions of Young Werther," but he also ran the civil service and public enterprises in Weimar for a decade and was a natural scientist throughout his life. He aimed to develop a completely different approach to natural science, which is known as Romantic Science. Goethe's influence on culture in the German-speaking world (and Russia), was enormous. His influence was felt over the education of German speakers from Marx and Wundt to Freud and Jung. Even Vygotsky quotes Goethe more often than he quotes Hegel, and the founder of modern neuroscience, A. R. Luria, identified himself as a proponent of Romantic Science.

Romantic Science meant beginning by grasping a process as a whole, rather than analysing it into parts, and emphasised patient and 'delicate' observation against artificial experimentation and resisted the invention of invisible forces and arbitrary principles to explain phenomena. Recognising that the practice of science formed part of a community's metaphysical rationale for its own cultural identity, Romantic scientists also sought methods which were accessible to the participation of non-specialists.

One of the main problems of science to which Goethe addressed himself was the problem of just *how* to form a concept of a complex process in such a way as to allow you to understand it *as a whole*, from which all the parts can be understood. Everyone will tell you of the importance of grasping things as a whole, but the point is: *how* to do it? It's like the problem of transcending dualism: easy to say, not so easy to do.

The word for such a dynamic, integral whole in German is *Gestalt*. At that time, Linnaeus's *Species Plantarum* categorised all living things according to a taxonomy of size, shape, colour, number of teeth, etc., etc., that is, according to the rules of Set Theory and formal logic, in which a thing belonged to a given set according to whether it exhibited the necessary and sufficient features defining the species. Goethe carried this book with him wherever he went so as to recognise the plants and animals he came across, but he found its

methodology quite unsatisfactory and wanted to find a different approach, taking organic life as a *Gestalt*.

At the same time as Herder was writing his book on Spinoza, Goethe was touring through Italy making botanical sketches, noting the changing form of the various species of plant at different altitudes and latitudes. Goethe arrived at an idea which he called the *Urphänomen*, or archetypal phenomenon: the simplest imaginable, single example of a phenomenon (plants), stripped of all its particular, contingent attributes, which exhibited the properties of all plants. In that one simple cell, you would see the whole process.

As chronicled in his *Italian Journey* of 1786-7 (1788/1989), Goethe developed the concept of *Urphänomen* in letters to Herder. He studied the plants by making botanical sketches of them and sensuously familiarising himself with all the variations of what he took to be the same basic archetype. All plants, he believed, were a realisation, according to conditions, of an underlying form which he called the *Urpflanze*. Even though the *Urpflanze* is an image rather than a form of words, it is to be understood as the *concept* of plant,[*] what it is that makes something a plant rather than something else. Goethe sought to determine this concept by sustained sensory attention to plants in all their variety.

In July 1794, both Goethe (1996) and Schiller had been attending a lecture at the Jena Scientific Society and as the audience filed out, the two poets found themselves embarrassed to be left facing one another. Embarrassed, because much to the frustration of their mutual friends, Goethe had been refusing to speak to Schiller because he felt that since Schiller had "rapturously embraced" the Kantian philosophy, he had been betraying his art, approaching Nature subjectively, "from the standpoint of so many human traits," rather than "actively observing Nature's own manner of creating." Conversation could not be avoided however, and when Schiller remarked that the current "mangled methods of regarding Nature would only repel the lay person who might otherwise take an interest," Goethe readily agreed, adding that "there might be another way of considering Nature, not piecemeal and

[*] Once the microscope had become sufficiently powerful, the cell was shown to be what made a plant what it was, and this perfectly observable *Urphänomen* made possible the sciences of biology and genetics, and we now know that it is the genome which makes the plant what it is. On the other hand, Darwin showed that it is precisely the contingent attributes which are subject to natural selection and generate the genome. So Goethe was both right and wrong, but nothing can take away from the brilliance of his idea which comes into its own in the human sciences.

isolated but actively at work, as she proceeds from the whole to the parts"... And so the pair conversed as they made their way home together. By the time they reached Schiller's house, Goethe found himself expounding his observations of the metamorphosis of plants, and to illustrate a point made a quick sketch on a piece of paper. "But," Schiller retorted, "this is not an empirical experience, it is an idea," drawing upon Kant's distinction between the faculties of sensation and reason. Goethe fought hard to suppress his rising anger, and politely remarked: "How splendid that I have ideas without knowing it, and can see them before my very eyes." Thus Goethe drew Schiller's attention to the unsolved problem in the Kantian philosophy of the objective sources of conceptual knowledge. Then ensued a decade of close friendship and collaboration until Schiller's death in 1805.

But whilst insisting on the sensuous character of the *Urphänomen*, Goethe was also adamant that the *Urphänomen* represented the *idea* of the genus (1988: 118), *not* its contingent attributes (1996: 103), and was *not* arrived at by the abstraction of common attributes, but on the contrary by the *discarding* of everything accidental (1996: 105). Further, Goethe took the *Urphänomen* to be the starting point for the scientific understanding of the whole relevant process. The discovery of the *Urphänomen* is the outcome of a protracted period of reflection; in his 'delicate empiricism', Goethe emphasised the importance of sustained contemplation and observation of the object, before discovery of the *Urphänomen* would be possible. So determination of the *Urphänomen* marks a nodal point in the development of a science, and a transition from reflection and being-with the object, until a certain *aperçu* makes possible the leap to an abstract representation of the complex whole in the form of an archetype. After this leap, the development of the science takes the form of an unfolding of what is already implicit in the *Urphänomen*. For example, Goethe boasted (1788/1989: 256) that he could *invent* an infinite variety of plants from his *Urpflanze*.

The point of the *Urphänomen* is to provide an authentic concept of a whole complex process. We can utter the word 'Nature', for example, but it is just a word. In the course of time, as a representation of the whole, a word such as 'Nature' will accumulate connotations, nuances and semantic associations which contribute to it as a more concrete representation. But in itself, there is nothing in 'Nature' or *any other word* more than a *mark*; it just depends on how the word is used, and

provides no royal road to a conception of the whole. In itself, it is *empty*, a mere sign.

A complex which is formed by means of collecting together all those objects sharing some common attribute is an *inauthentic* whole, and such a conception simply shifts the problem from the thing itself to the attribute without advancing understanding of the thing itself at all. Other complexes may be indicated by the connection of a thing to the social practice in which it arises, or by its subsumption under some genus (both of which presuppose a related existing conception), but a word in itself is insufficient to represent a complex whole.

Goethe ruled out these other approaches to forming a concept of a complex whole, and demonstrated that the whole can be conceived as an integral *Gestalt* only by finding a *particular* in which the essential properties of the complex whole are exhibited, and conceivable to the human mind because it is 'sensible'. Goethe saw this conception as directly opposed to the Newtonian approach of making the whole a production of some hypothetical 'vibration' or 'force' which is in principle unavailable to the senses, which merely displaces the problem from a form of motion given to the senses to a metaphysical construction which avoids rather than solves the problem.

Thus, the *Urphänomen* is the principle which allows us to conceptualise a complex whole as a *Gestalt*, not just as an empty symbol, not as the product of an external metaphysical cause, or an abstract collection united externally by some arbitrary common attribute. The *Urphänomen* is a particular which contains everything that is essential to the concrete whole:

> 'What is the universal?
> 'The single case.
> 'What is the particular?
> 'Millions of cases' (1996: 92).

The *Urphänomen* is the idea of the complex whole, in a form which is given to the human imagination because it is given to our senses. Because it is the most simple, a particular which is stripped of everything inessential, it cannot be described as stereotypical. It is a sign which directly evokes the whole. It is the archetypal phenomenon, which means that it is not the first in time, a Darwinian original of the whole species or kind, but that which is *logically* the most primitive.

The discovery of the *Urphänomen* crowns the pre-history of the effort to form a concept of some complex whole. Once such a concept is attained, the various realisations of the *Urphänomen* follow by lawful

necessity. Goethe's idea about science is: observation and reflection until you get the *Urphänomen*, and then from that simple and abstract beginning, unfold that which 'must follow lawfully' (1788/1989: 256). As he notes in the 1817 Preface to the Morphology, the archetypal animal is "the concept or idea of the animal" (1988 :69). Grasping that concept is the most important step in understanding something, Such understanding is the outcome of a protracted and difficult process. To determine what is the concept of some complex whole is not something which can be done off-hand, but requires a deep insight into the nature of the thing.

So, we see that the 'discovery' of the prototype concept by American cognitivists came about 200 years after it was first proposed by Goethe and Herder, 200 years during which natural scientists belittled Goethe's scientific work as the ramblings of an amateur and dilettante. *C'est la vie*. Goethe was well aware of the reception his work would receive from the natural science establishment, at least until such time as the inability of natural scientists to see Nature as a whole would bring the world to the brink of disaster, as he suggested in the finale of *Faust*.

The two conceptions of prototype are not quite the same however. According to Cognitive Psychology, the prototype is a bundle of the necessary and sufficient attributes (features) of the thing for it to be recognised as falling under a given category, and there is nothing else other than the attributes to be understood, no 'essence'. According to Goethe, the *Urphänomen* is stripped of all unnecessary attributes, yes, but *so as to* allow the principle uniting everything under the concept to be *understood*. Nonetheless there were problems with Goethe's conception, and it was Hegel's appropriation of the *Urphänomen* which makes the next episode in our narrative.

Hegel's Appropriation of the *Urphänomen*.

The rapport between Hegel's philosophy and Goethe's scientific work, Hegel's admiration for Goethe, and their shared hostility to 'Newtonian' science are all well known. Hegel repeatedly praised Goethe's *Theory of Colours* and cast himself and Goethe as comrades in the fight against Philistinism. Goethe's spiritual pantheism, his emphasis on *development* and his holistic approach are widely recognised as attributes he shared with Hegel. The inventor of the *Bildungsroman* and the philosopher who made development the key principle of Logic, had more than a little in common. Indeed, in the words of Daniel Robinson: '[Hegel] and Beethoven were born in the

same year. One set Goethe to music, the other to philosophy' (Robinson 1965: 287). But whereas Beethoven's admiration for Goethe was reciprocated, Goethe was more measured in his appreciation of Hegel's philosophy.

But in tracing the story of the concept in the history of philosophy, we find a little-known but powerful link between Goethe's scientific work and Hegel's philosophical system. The key concept of Goethe's scientific work is, as I have shown, the *Urphänomen*. The *Urphänomen* was appropriated by Hegel and transformed in such a way as to become the *Urphänomen* of his whole philosophy. Once this connection is made explicit, a reappropriation of Hegel's idea suggests itself as a compelling approach to the theory of concepts.

Although Goethe's notion of *Urphänomen* can be traced back to discussions with Herder, before his Italian journey (1788/1989) in 1787, and the first evidence of it in Hegel's writing appears in 1802/03 (1802/1979), an exchange of letters much later provides evidence of a recognition of this relationship by the two writers.

On 24 February 1821, Hegel wrote to Goethe highlighting the importance he attached to the *Urphänomen* and his reading of its place in Goethean science:

> This spiritual breath – it is of this that I really wished to speak and that alone is worth speaking of – is what has necessarily given me such great delight in Your Excellency's exposition of the phenomena surrounding entopic colors. What is simple and abstract, what you strikingly call the *Urphänomen*, you place at the very beginning. You then show how the intervention of further spheres of influence and circumstances generates the concrete phenomena, and you regulate the whole progression so that the succession proceeds from simple conditions to the more composite, and so that the complex now appears in full clarity through this decomposition. To ferret out the *Urphänomen*, to free it from those further environs which are accidental to it, to apprehend as we say abstractly – this I take to be a matter of spiritual intelligence for nature, just as I take that course generally to be the truly scientific knowledge in this field (Hegel 1821/1984: 698).

Hegel goes on to speak of his philosophical appropriation of the *Urphänomen*:

> But may I now still speak to you of the special interest that an *Urphänomen*, thus cast in relief, has for us philosophers,

> namely that we can put such a preparation – with Your Excellency's permission – directly to philosophical use. But if we have at last worked our initially oyster-like Absolute – whether it be grey or entirely black,[*] suit yourself – through towards air and light to the point that the Absolute has itself come to desire this air and light, we now need to throw open the window so as to lead the Absolute fully out into the light of day (Hegel 1821/1984: 699).

Here Hegel recognises that in Goethe's hands, the concept escapes the airless depths of the philosopher's study and connects up with Nature and the everyday life of the people. He observes:

> the two worlds greet each other: our abstruse world and the world of phenomenal being. Thus out of rocks and even something metallic Your Excellency prepares for us granite, which we can easily get a handle on because of its Trinitarian nature[†] and which we can assimilate (Hegel 1821/1984: 699).

Hegel is here alluding to his own conception of the concept with individual, universal and particular moments, which, according to Hegel, is essential for the concept to have sufficient internal resources so as to function as a true concept, and which will come to presently.

Goethe responded to Hegel's letter on 13 April, sending him the gift of a prism and a stained glass goblet which Goethe had referred to in the *Theory of Colours*, with a note saying:

> Seeing that you conduct yourself so amicably with the *Urphänomen*, and that you even recognize in me an affiliation with these demonic essences, I first take the liberty of depositing a pair of such phenomena before the philosopher's door, persuaded that he will treat them as well as he has treated their brothers (Hegel 1821/1984: 693).

and dedicating the goblet as follows:

> The *Urphänomen* very humbly begs the Absolute to give it a cordial welcome.

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[*] The Absolute being black or grey is an allusion to Schelling whose conception of the Absolute Hegel derided as "the night in which all cows are black," (Preface 1807/1910) and Hegel's conception of the grey of dusk in which "the owl of Minerva takes flight" (Preface 1821/1952).

[†] By "Trinitarian" Hegel meant granite "as a compound of quartz, felspar, and mica" (2009: §126), referring to the geologists' view of granite as an arbitrary compound of different matters, which according to Hegel was not an arbitrary but a necessary combination.

In this way, Goethe acknowledged the compliment Hegel had paid him and gave recognition to this lynch-pin connecting their work. Hegel replied, 2 August 1821: "... wine has already lent mighty assistance to natural philosophy, which is concerned to demonstrate that spirit is in nature" (1821/1984: 699).

Hegel and Goethe agreed that in order to conceptualise a complex phenomenon as a *Gestalt*, it is necessary to form a concept of its simplest unit, an *archetypal* phenomenon. This archetype is not to be a metaphysical principle or force or hidden structure which is in principle outside of and beyond experience. On the contrary, the archetype is in principle given in experience, and exhibits all the properties of the complex whole, while being simple and indivisible. This is the *Urphänomen*. Provided we can form a *true concept* of the *Urphänomen*, it is the proper starting point and foundation for a scientific understanding of the *Gestalt*. That is, Hegel adopted the model of science proposed by Goethe, the model in which the essential properties of an entire complex of phenomena is revealed in its simplest particular unit.

But the problem is that whilst Goethe showed how an authentic *Gestalt* is conceivable only through the apprehension of its simplest particular phenomenon, the basic principle discovered in the *Urphänomen* still has to be developed. It is one thing to be able to arrange a collection of natural phenomena in sequence, but to trace the unfolding of the logic of the *Urphänomen* out of itself, is possible only if the *Urphänomen* is transformed into a true concept. Goethe's *Urphänomen* is just a sign, albeit a natural and meaningful sign, but lacks the *internal structure* required for a true concept. In itself it is insufficient for the development of a science. This brings us to Hegel's transformation of Goethe's idea which marks his science off from that of the great naturalist and poet.

This is how the dialectical, developmental conception of a concept was first elaborated.

Whereas Goethe relied upon the sensori-motor grasp of a natural process arising from apprehension of the *Urphänomen*, Hegel had to work out the nature and structure of a concept *in general*. And it is to this that I now turn.

Hegel and Mediation

The earliest attempt at a system of philosophy that we have from Hegel is the unfinished 1802/03 manuscript known as the *System of Ethical Life*, written while Hegel was at the University of Jena. Hegel

wrote and lectured at Jena, but he did not receive a salary until the end of 1806. Jena was the centre of German philosophy at the time. Fichte had just left, and Friedrich Schelling, Hegel's friend and collaborator at the time, was there. Also at the University of Jena until his death in 1808 was Herder. While the influence of Schelling is visible in the structure of this manuscript, perhaps more obvious is the unacknowledged influence of Herder and Fichte.

Hegel was trying to resolve a number of problems in the legacy of Kant. Fichte had endeavoured to overcome the subjective/objective dualism of Kant's system by using the category of Activity, which is both subjective and objective. The Ego, defined as pure Activity, was the central category of his system, and Fichte aimed to erect on this foundation not only an epistemology, but a complete social theory and system of natural law. This was all very well, but Hegel did not accept that it was rational to begin with the individual, and from the individual deduce the nature of the society. On the contrary, we should begin with a conception of the whole society in the form of people's collaborative activity and shared culture, and from there deduce the nature of the individual persons (Hegel 1817/1955).

For this, Hegel could draw on Herder's conception of *Volksgeist* (the spirit of a people), built up through shared activity and history. The point is that activity is always the activity of *individuals*, and yet that activity is always social in character. By appropriating Goethe's approach to overcoming the sensation/conception dichotomy Hegel was able to draw together all the threads of German philosophy at the time to chart a completely new direction which offered the possibility of overcoming Kant's dichotomies.

Here's how the *System of Ethical Life* works. The structure of the work is an alternation between the Concept (i.e., Reason) being subsumed under Intuition (i.e., sensation) and Intuition being subsumed under the Concept. Rather than trying to obliterate the contradiction between Concept and Intuition, Hegel makes the contradiction the driving force for development. To begin with, a human need is satisfied immediately by simply taking from Nature. In such a natural condition, Hegel says the Concept is subsumed under Intuition. But human beings are capable of deferring gratification and a gap opens between needs and the means of their satisfaction; our needs are no longer met directly from Nature. This gap is mediated by labour (Intuition subsumed under the Concept). But labour itself generates new needs in the form of the means of labour, and thus thanks to the deferral of satisfaction, a *culture* is generated, which

mediates between human beings and the natural world. Human life is then occupied in the production and maintenance of this culture. Nature appears to human beings in the form of artefacts.

Although the labour is carried out by an *individual*, the production of culture goes beyond the individual. Hegel calls the products of labour the *universal*. The individual contributes to the production of the universal through a *particular* role within the social division of labour.

The three forms of mediation which, according to Hegel, constitute the construction of the universal were the raising of children, the making and use of tools and the use of language. For human beings, the raising of children is not simply a natural process. If a rational community is to raise children then the parents' own way of life must be made an object of awareness so that it can be deliberately imparted to the children; raising children is a *labour process*. Likewise, the making and use of tools requires making the labour process itself an object of awareness and the objectification of the various practices in the form of tools, land/crops, infrastructure, domestic animals, etc., etc., which in turn are subject to continuous improvement. And language, Hegel calls "the tools of Reason." These 'thought objects' are maintained through their use and re-creation in collaborative forms of practice in the community.

These are the fundamental ideas which underlay Hegel's conception of the concept. He goes on in the *System of Ethical Life* to sketch the further stages of cultural development with the creation of a social surplus which opens the possibility for entering into trading relations and gaining the recognition of other communities, and thirdly, the formation of a state and system of justice. But these need not concern us here, important as they are for the wider Hegelian project. Although *Ethical Life* is as challenging to read as any of Hegel's books, it is only in this early work that Hegel is explicit about the everyday human activity which underlies his philosophical ideas. So it is really important in understanding his mature work which are framed in unrelenting specialist philosophical language.

The work begins:

> Knowledge of the Idea of the absolute ethical order depends entirely on the establishment of perfect adequacy between intuition and concept, because the Idea itself is nothing other than the identity of the two.

By "Idea," Hegel means the development of humanity as an ethical community. He says that the Idea is the identity of intuition and

concept, but intuition and concept are *never* identical. We feel a need, but in endeavouring to satisfy that need we create a new means of mediation, thereby generating new needs. Things never turn out just as we thought; we satisfy a need but we are still dissatisfied. So the 'identity' of intuition and concept, Idea, is in fact a *non-identity*, constituted in a never-ending struggle to overcome its internal contradictions each time only generating more contradictions. This is how the universal is constructed. The Idea is defined as the identity of intuition and concept, but this identity is forever out of reach! Human life is by its very nature *contradictory*, and in an eternal struggle to overcome this contradiction. Putting this another way: there is always a difference between the particular and the universal. The universal exists only in and through the particular, and is implicit in it, but every particular is also different from the universal. The universal is the idea manifested in every particular, its aim and object.

Intuition and Concept do not indicate for Hegel, distinct faculties of human individuals. Rather each represents a mode of social activity in which one or another aspect is dominant. When a person makes a tool or any artefact, for example by planting a crop, they make their concept into something objective and material (intuition subsumed under concept) which is sensuously present for the entire community. On the other hand, the need driving this production at every stage is intuitively felt and the way the product is apprehended is likewise sensual. The conceptual capacity of human beings is developed and exercised only through the creation and use of universal products of labour, which can be apprehended sensuously and in no other way. Without such products and the activity entailed in their creation and use, conceptual activity is impossible. But the human senses are themselves developed through the creation and use of human products. We perceive only what is meaningful for us. For example, when I read or write a word on the page, this is simultaneously both a sensori-motor and a conceptual act.

Although Nature is always the starting point, Hegel has shifted the focus from relations between human individuals and the material world outside of thought and human life, to the relations between human beings, each other and their own culture. Cultural products are constructed from Nature which remains the ultimate source of human needs, but the understanding of human life means making that life the centre of attention. People living as individuals in Nature is an impossible myth and cannot function as the presupposition for philosophy. Our relation to Nature is mediated by a division of labour

within the community and means of production. In Hegel's terminology, what mediates between the individual person and Nature is *Geist* (Spirit) or in the terminology of this very early work, *the Idea*, made up of collaborative forms of activity, a constellation of artefacts and human beings themselves.

Epistemology was posed initially in terms of the relation between the consciousness of an individual and Nature outside of and independently of human activity, and presented intractable problems. When posed in terms of the relation of individuals to *their own* culture, the situation is transformed. Of course people understand how their own culture works. How could they not, for 'understanding' is nothing other than formulating an idea in the terms of one's own culture? The point then becomes the deeper understanding of the dynamics of culture and the relation of individuals to their own culture and that of others.

One of the observations to be drawn from this work is the nature of Hegel's concept of Idea. He defines it as the identity of Concept and Intuition, but it then turns out that there is no such identity. The Idea is the *process of making* that identity.

We will see that for Hegel, concepts are both processes and their product. The other particularly significant aspect of this work is how Hegel is trying to work through Goethe's idea of artefacts being simultaneously sensuous representations and concepts, as Goethe politely put it to Schiller: "How splendid that I have ideas without knowing it, and can see them before my very eyes." By looking for a solution in practical activity, Hegel was also taking a leaf from Fichte's book.

Formations of Consciousness

In 1807, Hegel wrote his first book to receive public attention. In the "Phenomenology of Spirit," Hegel shows how the normal, non-philosophical way of thinking and living rises to philosophy, in the form of his own mature philosophical system, which begins with the Logic. It is also the connecting link between his early work and his mature work. It is part of his mature work in the sense that it represents the completion of the series of transformations which he went through in his early work, but it is almost unreadable, having been written in a rush to meet the publisher's deadlines, whilst his ideas were only just coming together.

It would take us much too far afield to go into the content of the "Phenomenology," but to understand the subject matter of the Logic,

where Hegel presents his theory of concepts, we must understand the subject matter of the "Phenomenology." Hegel says it is about *consciousness*. It tells the story of the journey of consciousness three times. The first time is the story of *thinking* as it develops down through history, through a series of distinct stages. Then he tells the same story again but this time instead of systems of thinking, we have *social formations*. And then the story is told a third time from the standpoint of thought which is "reflected into itself," i.e., *art and religion*. Hegel then sums up the narrative from the standpoint of the whole process and its outcome: genuinely philosophical thought that knows that it is the thought of its times.

The object whose development is being described is one and the same object, but from different perspectives. This object, whose change and development through history is described, Hegel calls a *Gestalt*, a 'formation of consciousness', understood as an integral, moving structure or indivisible *whole*, precisely in the sense in which Goethe approached his study of the morphology of plants as *Gestalten*. The "Phenomenology" is the *Bildungsroman* of Western civilisation.

For Hegel, a *Gestalt*, a 'formation of consciousness', is understood as the dissonant unity of a *way of thought*, a *way of life* and a certain *constellation of material culture*. 'Dissonant' because at any given moment in the history of any given people these elements are mutually constituting, but *not identical*. There are laws requiring that people should act in a particular way, but people don't act in quite that way, ideas change, clothes go out of fashion, bad laws are flouted, and so on. So we have material culture and practical activity and subjective thought* all aspects of a single whole or figure, a *Gestalt*, but always moving, always with internal contradictions.

The "Phenomenology" is concerned with the *necessary* forms of development of formations of consciousness. In that sense, Hegel is not dealing with a real, empirical history in the "Phenomenology." He is concerned with consciousness, but with what is *necessary and intelligible* in consciousness. The natural sciences deal with their subject matter in this same way, concerning themselves with what is necessary and intelligible in phenomena.

With that qualification, Hegel *is* talking about consciousness, an object which is empirically given and verifiable. He starts with ordinary, unphilosophical consciousness, and he leads the reader

* In the appropriation of Hegel which I dealt with in Part III, *actions* replace *subjective thought*, but an action is itself both subjective and objective.

through a series of stages leading up to absolute knowledge, that is, the philosophical consciousness exhibited in the exposition of the "Encyclopaedia of Philosophical Sciences." The "Phenomenology" is not a work of history, either philosophical or social; but it does suggest an approach to history which takes its object as *integral forms of life* which develop through their own internal contradictions, rather than consciousness being some kind of extra-historical substance.

To recap, what constitutes a *Gestalt* is:

- a *way of thinking* or ideology (with the meaning it attaches to forms of activity and artefacts such as words and symbols),
- a *way of life*, or social formation (forms of practical activity, including the institutions and forms of practical activity in production, communication, family life, government and so on), and
- a constellation of *material culture* (including the language, art, literature, technology, land and so on).

Each of these three aspects constitutes the others and mediates between them. There is no mind/matter dichotomy here. Hegel never took up a position on epistemology or ontology. He took each of the various systems of epistemology and ontology to be part of a formation of consciousness. All those dichotomies which had tortured the minds of earlier generations of philosophers he simply made the subject of internal critique in tracing the contradictory development of the formations of consciousness. Questions about whether a thought-form corresponds to a natural object outside of thought, interested Hegel only in the sense of asking: under what conditions do people ask questions like that? For Hegel, subject and object always exist in a mutually constituting, more or less adequate, relation to one another. The question is not the correspondence of the subject to the object, but of the capacity of a mutually constituting *subject/object*, that is, a formation of consciousness, to withstand sceptical criticism. Under the impact of sceptical attack the subject and object will *both* change. The object changes because it is constituted by the subject, and vice versa. The Gestalt is a *subject/object* which understands its own activity and its own production according to its own thinking.

The dynamic in the "Phenomenology," the driver which pushes it on from one *Gestalt* to another, is its vulnerability to sceptical attack *from within*, in its own terms. He demonstrates how every one of the *Gestalten* at a certain point fails to withstand self-criticism and collapses. Some new *Gestalt* which is proof against this line of

reasoning and can withstand the type of attack which the previous *Gestalt* could not, is then able to develop. And so it goes on.

The way Hegel organised the "Phenomenology" was based on the thesis that in any formation of consciousness there would be one final arbiter of truth, some standard which sceptical attacks against any element of the whole would ultimately come up against. So each main stage in the "Phenomenology" is associated with a criterion of truth or rule of inference which characterises it. So Hegel posits that the touchstone for any formation of consciousness, its basic principle, its Absolute, functions as the *Urphänomen* or Concept of that formation of consciousness.

It is not necessary to visualise this on the grand historical stage on which this drama is supposed to be played out. In any project or movement or branch of science or paradigm or social practice, which exhibits the features of a *Gestalt*, there will be just one Concept, one relation, the simplest, most basic concept of all, on which the whole project depends. It is this 'concrete concept' which makes the project what it is and which allows us to make sense of the whole and constitutes the project an integral whole.

A formation of consciousness entails a certain line of thinking, a certain set of corresponding practices, and the artefacts around which the project is organised, from specialised language to collective property, technology and so on. Within each project there are basic criteria and associated practices through which claims are tested, which underpin sceptical challenges to the project. Whether this works on the grand historical scale that Hegel claimed for it, is an open question – it is one of those 'in the last instance' questions which may mean very little. But in the course of presenting a *Bildungsroman* of civilisation, Hegel has presented a profound approach to the understanding of human life, tied up in the notions of *Gestalt* and *Urphänomen* which he learnt from Goethe.

The Concept

In any formation of consciousness (science, social movement, project, ...) there is a simple concept which functions as its Absolute. Since our aim is to trace the story of the concept, we could put that the other way around. When a concept is taken as the Absolute, it constitutes a social formation, in which a way of thinking, a constellation of artefacts and a system of activity mutually constitute one another, with the Absolute at its heart. The concept is then *nothing other than* this *Gestalt* for which it counts as the Absolute.

Such a formation cannot be understood as a real community, for any real community is a rich and complex fabric of innumerable forms of thinking, social practices using an almost infinite variety of artefacts. No project or movement is ever insulated from everything else. We understand a real community, a real culture, as a multiplicity interpenetrating formations of consciousness. But the concept, as here understood, is the basic building block of a real community.

The Absolute inevitably turns out to be relative as it is tested out and subject to attack and its internal contradictions manifested. Concepts are therefore processes continuously in development and change, forever thwarting attempts at definition and delimitation.

But the conception of a concept which we are coming to here is not an entity but a complex *process*. Think of the concept as manifested in the reflex responses to laboratory tests, and then again as understood and defined when reflected upon, and then again as manifested in the development of a project such as the law or a branch of science. A concept is all these things. Hegel is indispensable if we are going to understand the complexities of the real life of concepts. Simplistic approaches were tried and failed centuries ago in the history of philosophy. But for an approach to a developed theory of the concept we must turn to Hegel's Logic. Hegel's psychology, in which he tackled the problem of how individuals appropriate concepts, was first presented in the most famous passage of the "Phenomenology," but I will return to this later, after the nature of the concept itself has been made clearer.

Chapter 7. Hegel's Logic

Hegel wrote the *Science of Logic* in three books from 1812 to 1816 and republished it in revised and abridged versions until his death in 1831. The *Logic* is Hegel's book on concepts, but it is written as a book of logic, not psychology or sociology. The first thing that needs explanation is how and in what sense Hegel's *Logic* is a book about logic.

The Subject Matter of the Logic

For a logic to be valid it must have some empirical domain in which it can be tested and proved. Logic must be the logic *of* something, and stands or falls according to whether it expresses the necessary relations and laws of movement in *some* domain of reality. This is true of any scientific theory in fact, but it needs to be said in the case of logic because logic seems to be free of this requirement. To the extent that rational argument is institutionalised in all society, the truths of logic seem utterly compelling to us. Consequently, demonstration of the truth of logic in the material world seems to be irrelevant, or even a misunderstanding of the subject matter of logic, which after all, appeals to Reason alone.

Here we should distinguish between *formal logic*, meaning the kind of logic commonly used to generate propositions in mathematics, and Hegel's logic, which for want of a better word I will call '*dialectical logic*', a more general conception of logic, of which formal logic is a special case. Dialectical logic offers the only alternative rationale for categorisation to the formal method of sorting by attributes described earlier.

Formal logic is the logic of *propositions*. As such, formal logic is indeed the logic of some domain of material reality, for whether spoken or written, propositions are material entities. The mathematical foundations of propositional calculus depend on treating propositions as strings of arbitrary symbols. Formal logic tells us the conditions under which if a given set of propositions are true, then some other proposition follows. It turns out that this is broadly the same requirement as for Set Theory. Set Theory concerns elements x and sets, S, in which $x \in S$ means that x belongs to a set, S. We can visualise S as representing some distinguishing feature that x may or may not possess, and S is the set of all those x having the feature, S. This is the logic implicit in the approach of Cognitive Psychology referred to in Part I, in which a concept was identified with some

category of objects. The same logic was taken to apply to the definitions relied upon in their interpretation of the 'classical theory of concepts', in which concepts were defined as sets according to the necessary and sufficient features for being a member of the set. (Such concepts are called 'abstract general' concepts.) It is presumed that the world and its mental reflection are made up of elements which can be organised into sets, and the validity of all the propositions which can be made about these sets is given by Set Theory and Formal Logic. It turns out that this logic simply does not compute with concrete concepts, and the definitions which are supposed to rely on it cannot retain their validity in the real world outside of the narrow domain of mathematics which it models.

This is one of the problems which dialectical logic addresses: Hegel aimed to produce a logic which doesn't fall over as soon as it steps off the page, a logic which is geared to dealing with *concrete* situations, not mathematical abstractions. Rather than demanding that Logic be a series of eternal and universal truths, Hegel's logic is in essence a logic which *develops*. And rather than setting up the logic so that contradictions are eliminated and avoided, even while real life is saturated with contradiction, Hegel made contradiction the driving force of this development.

Just as formal logic is the logic of *abstract general* concepts ─ the logic of the type of concepts modelled by dropping coloured beads into boxes, dialectical logic is the logic of *concrete concepts*, the logic of concepts which I take as the basic units of a *formation of consciousness*. Hegel is able to develop such a logic on rigorous grounds by examination of a certain kind of proposition: "*c* is absolute," in which *c* represents some logical concept. Propositions like "*c* is absolute" exhibit relative truth, that is, they are true only up to a certain point, under certain conditions; but if pushed beyond a certain limit they become false. This is the basic substance of dialectical logic. A formation of consciousness is the instantiation of a claim of the form "*c* is absolute," or "*c* is everything," in just the same way that a set (or abstract general concept) is the instantiation of a proposition from Formal Logic, like "all *x* are S." So dialectical logic is the logic of formations of consciousness elaborated by means of sceptical critique of propositions of the form "*c* is absolute."

This clarifies the domain in which dialectical logic must be validated, namely, the development of formations of consciousness in real social life and experience. So the substance of the Logic is purely logical in the sense that it concerns only the truth of propositions, but it finds its

domain of application not so much on the pages of mathematics books, but in real life.

Perhaps I could make this clearer with an example. Take the proposition: "Everything is the same as itself." It is not hard to show logically that this is true only up to a point, and in fact everything is different from itself.* This can be seen for example, when a group of people sit down together for the first time in a committee set up for some purpose or cause. "We all came here for the same reason," someone might say, a seemingly self-evident proposition since they all responded to the same invitation. "Let's hear what everyone thinks," and very soon it appears that everyone has some different idea of why it is we are all here ... and so it goes. Hegel confines himself to the categories of logic and examines them as such; he is not concerned with what people might say at a meeting, etc. But "We all came here for the same reason," is read as "Identity is absolute" in the domain of propositions about "our collective aim," which did after all bring this group of people together. Hegel's Logic examines propositions like "Identity is absolute" in the sense in which it arises in this example, and he relies on purely logical critique of the concept of Identity itself, demonstrating its relativity, its limits, and takes it beyond those limits.

I will show that dialectical logic is *the logic of concepts*, understood as actions organised around some universal artefact, word or symbol of some kind. We will see that a universal principle may find the resources for such a developmental logic because concepts are not just empty words, but on the contrary, such universals exist in social life and the mind only insofar as the universal is particularised in experience through individual actions, that is, because they have meaning. Meaningless symbols cannot exhibit dialectical or any other kind of logic. But the subject studied in the logic is not social life or psychology, but concepts, concepts understood in such a way that they are meaningful in social life and their meaning may be manifested in social and psychological phenomena. That people called together for the same reason discover that they have different reasons arises *from the nature of the concept* of Identity, rather than simply being a manifestation of psychology or human behaviour. In fact, Hegel was very determined that the Logic would not be based on *any* assumptions about human nature.

* When a logician writes "A = A," they might take it that both As are symbols pointing to the same object. But they remain two different symbols, each on opposite sides of the = sign and are not identical.

A Presuppositionless Philosophy?

Hegel makes quite a point of the Logic providing a presuppositionless starting point for philosophy. He would assume no axioms, make no assumptions, tell no foundation myth, presume nothing of human nature or anything else, but create a philosophy which pulled itself up by its own bootstraps, so to speak. So he made the first category of the Logic Being. For Hegel, Being is an entirely empty concept: "It *is* ..." nothing in particular. So Being provided a starting point from which the Logic could make an unprejudiced beginning. But this claim for the Logic as presuppositionless is not all that it appears to be.

Hegel says that the Logic begins from Being because "Being is the immediate" (1816/1969 §155), that is, it is *not mediated* by anything. But then he also says: "There is nothing, nothing in Heaven, or in Nature or in Mind or anywhere else which does not equally contain both immediacy and mediation" (1816/1969 §92). So does this extend to the Logic? The answer is "yes."

> The beginning is *logical* in that it is to be made in the element of thought that is free and for itself, in *pure knowing.* It is *mediated* because pure knowing is the ultimate, absolute truth of *consciousness.* In the Introduction it was remarked that the phenomenology of spirit is the science of consciousness, the exposition of it, and that consciousness has for result the *Concept* of science, i.e. pure knowing. Logic, then, has for its presupposition the science of manifested spirit, which contains and demonstrates the necessity, and so the truth, of the standpoint occupied by pure knowing and of its mediation (1816/1969 §93).

So he says that the Logic is *not* presuppositionless at all, because it presupposes the existence of human beings who have participated in 'manifest spirit'. Through the process of sceptical critique of their own form of life, such people have become conscious of the journey of consciousness to philosophy and are able to think philosophically. Along the way people construct languages, communities, institutions and cultures which make philosophy possible. A Science of Logic is possible only this basis. The "Phenomenology" is the *Bildungsroman* of humanity, the story of the succession of formations of consciousness through which humanity passes to come to consciousness of itself, and the result is the Logic, the "science of knowing," the general rules of development of concepts. The Logic is the truth of the "Phenomenology."

It is through this history that human knowledge is "displayed and stored in language" (1816/1969 §14). Only on this condition can it be manifested in the Logic. "Being" is meaningful for us only because it is a word in the language. It is only thanks to the nuances and semantic connections which philosophical terms have acquired in the course of the history of philosophy that they can contribute to the Logic.

According to Hegel, Being and the other concepts dealt with in the Logic have gained their philosophical meaning through the history of philosophical thought, specifically through formations of consciousness in which a concept represented the Absolute.

But the logic is presuppositionless in the sense that it has to prove itself without appeal to any prior or outside authority. Just as Hegel held that the system of philosophy had to begin without presuppositions, he observed that *philosophy itself*, historically, had to begin without presuppositions. According to Hegel, when philosophy emerged in ancient Greece: "It was the *Eleatics,* above all Parmenides, who first enunciated the simple thought of *pure being* as the absolute and sole truth: *only being is*" (1816/1969 §136). But as we have seen, in the beginning of modern European philosophy, Descartes also had to set out without presuppositions and made his beginning from "pure being," that is to say, his own consciousness, cleansed of all prejudices, presuppositions and received knowledge.

So, taking Descartes for our example (the Eleatics are known to us only through fragments), modern philosophy had to begin without presuppositions ("I think therefore I am."), but in reality, it still presupposed a person and a language and culture within which such philosophical reflection was possible. So this is the sense in which the logic begins both with no presuppositions and with very real presuppositions. The Logic then begins with an empty concept that requires no presuppositions, and proceeds by immanent critique, relying at each stage of the critique only on those concepts which have already been dealt with, without any additional content or further presuppositions.

By dealing only with the categories of Logic, Hegel develops a method which exhibits in ideal form the development of *any* science, any theory, any concept. In general though, a science does not begin without presuppositions. This is a stricture Hegel places only on philosophy as a whole. In general, a science begins with some concept, and a science is built through the critique of that concept. The result is

a concrete concept of the subject matter of a science, a concrete concept of some complex process.

This is how Hegel developed his Logic, his science of the concept. Rather than being a rigid structure resting on a set of arbitrary axioms, we see that it is a developing process that rests solely on the presupposition of a readership capable of critical philosophical thought.

Moving Concepts

It is worth reflecting for a moment on the nature of this movement that we see in Hegel's Logic, and which is invariably referred to by commentators. In the way that 'concept' is normally understood, as an abstract thought-form, it seems nonsensical to talk about a concept moving. Some writers (for example, Houlgate 2005) see this movement as a psychological movement (if you think about a certain concept, you will be driven to think of a certain other concept) or metamorphosis (upon reflection, a certain concept turns into a certain other concept). Neither of these conceptions, which rely exclusively on inward subjective phenomenological processes, are ultimately consistent with the idea of concepts as part of subject/objects which we have found in Hegel.

We should read it more like this: a social situation in which a certain concept is taken as the absolute, passes over into a certain other situation, *if* the concept is subject to critique. This can be verified through a study of history (and the history of philosophy in particular, since it is philosophers who express the spirit of their times by criticising concepts), and made rational by means of logical critique of the concept (as demonstrated in the Logic). So it is internal, logical critique of the concept itself, understood as the unit of a formation of consciousness, which provides the objective basis for the logic. This does not make a psychology of concepts or a theory of history. But a theory which demonstrates *what is logical* in conceptual change provides a very good foundation for a psychology of concepts, or *any* science. The replacement of the 'prototype theory' by the 'exemplar theory' is an example of how a concept moved when subject to critique by its adherents.

We see that an understanding of the vulnerability of all concepts to self-contradiction and passing over into other concepts provides an important foundation for all the sciences, since all sciences concern concepts. But it is especially important in those sciences whose subject matter is concepts and conceptual change.

The "Phenomenology" was explicitly concerned with the historical development of consciousness, but it is widely understood to relate to the development of a "formation of consciousness" taken to be a project or social movement, any system of activity organised around some ideal. The Logic is the 'lessons' of the development of these projects. Consequently, history, the history of ideas, especially the history of science, developmental and cognitive psychology, political science, social theory, ... all these sciences must benefit from an understanding of the inherent instability and self-movement of concepts themselves. So dialectical logic can be seen as an essential component of almost any science; but a concept makes sense only in the light of the history which brought it into being.

The *Logic* concerns *Real* Situations

It should be evident by now that 'dialectical logic' is the kind of logic which reflects real life, rather than mathematical abstractions.

In modern life, social classes are defined by abstract general categories of age, employment and income; political categories are defined by voting choices in multiple choice elections; people qualify for welfare or sickness benefits by ticking boxes on a form; workers qualify for jobs by formal certificates. This tends to *bring about* the situation which these practices presume, that is, people are taken to be not personalities but bundles of detachable features. The applicant who ticks all the boxes gets the job. But we know that the mode of reasoning which depends on this kind of concept doesn't work. All *a* are *b*, all *b* are *c* and all *c* and *d*, therefore all *a* are *d*, usually doesn't work in reality. "Sport is good for your health; football is a sport; therefore football is good for your health." Sure. To make it work, all sorts of qualifications and hedges have to be introduced at each step until the line of reasoning becomes tautological. It suits our bureaucratic systems of government and our systems of information gathering and processing to categorise everything with multiple-choice forms and treat people like coloured beads dropped into boxes and counted. But this is not how human beings *really* are.

So we have a problem in that we have systems of social regulation which are based on abstract general principles, but human societies whose real social fabric is concrete universal, that is, structured like formations of consciousness with basic building blocks which are true concepts. Abstract general relations and concepts are inculcated in us as children when we go to school and then we go out to participate in paid work according to the certificates we have acquired, and

participate in the political system by ticking boxes on ballot papers. In a certain sense then, abstract general logic is forced on to us by the systems of social control that have evolved. As a result there is always a perverse kind of validity to abstract general logic, because it is the logic of the legal system, the political system, the education system and the systems of business and economic regulation. Formal logic therefore retains its place as an important mode of forming and reasoning with concepts. But it is a very problematic logic.

For example, it is impossible to make any rational statement about social class and political ideals in terms which are consistent with abstract general logic. Any of the concepts of social class, such as working class, small business, big business, farmers and so on, are quite meaningless in abstract general terms until they have been "defined" in terms of income bracket, mode of employment, industry and ranking in the work hierarchy. Not only do these categorisations turn out to be problematic (Is a medical student earning less than his plumber apprentice friend really "poorer"? Is a labourer subcontracting on a building site really "self-employed," etc., etc.?) but it is quickly found that they tell us nothing about political preferences or aspirations. A 55/45 split in voting preferences on these categories would be counted as statistically significant. So we get perversities like Obama referring to autoworkers in America's rust belt as 'middle class'. The conclusion can only be that a Liberal voter is someone who votes Liberal. Given that governments are elected and unelected according to an electoral system which is abstract general in its structure, there is no simple fix for these conundrums, and social science gets reduced to statistical analysis of survey forms. But *understanding* can never be achieved by statistical correlations between abstract general categories. And in the main, we don't think about our lives in this way. This abstract general logic only exists in the bureaucratic and technical systems of control, not in 'real' life. We may be taught to find marriage partners who 'tick all the boxes', but we don't actually behave this way.

But dialectical logic allows us to examine the concepts which we use to govern our lives: self, freedom, liberalism, democracy, career, family, job, happiness, friend, need, welfare, leisure, security, hope or whatever, and a critique of these concepts ought to be able to give some real insight into how we think and how we live. Concepts like these are subject to dialectical logic and cannot be squeezed into little boxes. A psychology of concepts has to deal with this.

Dialectical logic is about critique of a concept in its own terms, bringing out its limits and making explicit the conditions of its validity. It means exploring how a universal concept makes itself real, exploring its presuppositions and conditions. A shopping list of attributes can never be a substitute for this kind of exploration. This is because concepts are real products of social history, the solution of problems that have arisen in the past, and passed on to us through language and culture, new words and shades of meaning given to words because of real social experiences. Every concept contains within it some ideal form of life, some implicit system of real human activity, ... or an unresolved multiplicity of such settings. Concepts are irreducibly about people and their activity, their feelings and motivations, their needs and their relations to one another. The relation may be highly mediated and far from explicit but it is always ultimately about people and their activity.

By way of illustration: the abstract general interpretation of the 'classical theory' of the psychology of concepts fell into contradiction with itself. Things just weren't as the theory said they were. The theory fell into contradiction because of its dualist character and the abstract general character of the cognitivist interpretation. The contradiction arose because of limitations within the theory itself which were brought to light when cognitive psychologists subjected it to experimental testing, simply following through what had been taken to be its implications, but which took the theory beyond its own limits. But wrong conclusions were drawn, as I have shown, from this failure. As several cognitive psychologists have suggested, the 'classical theory' needed to be retained in some way, within the structure of a more general theory. But up till now, no-one has worked out how to do this within the framework of cognitive psychology. This is the typical story of a concept in the view of 'dialectical logic'. The task now is to bring out what was wrong with the concept of the 'classical theory' and what needs to be retained, so that the virtues of the old theory can be *sublated* into a more explanatory and psychologically realistic theory.

In summary, Hegel described the necessary forms of movement of concepts. The forms of movement Hegel is describing differ from the objects of a psychology of concepts in two ways. Firstly, the concepts Hegel is describing include subjective thought forms as one moment of a concept, which also includes social practice and the products of that activity. It is not that Hegel is describing objective forms of which 'concepts' are the subjective image. Rather, the forms Hegel is

describing are both subjective forms and objective. Secondly, the relation between the concepts Hegel is describing and the concepts known to psychology somewhat like how the laws of biology relate to medical science,

So much for some generalities about the logic. I will now briefly review the structure of the Logic, which not only gives us a more detailed insight into the material covered, but also suggests a general form for the development of any concept (or theory).

Being is the Concept In-Itself

To begin with, we should put out of our minds for the moment, any preconceptions we may have about the meaning of the concept of 'Being', which we may have learnt from Marx or Heidegger or Husserl or someone else. For the moment, the same goes for any of the other of the concepts of the Logic. The subject matter of Hegel's Logic is quite unique, and to follow Hegel's argument we need to grasp just what he means by each of these concepts and how we can understand them in terms which make sense in our own times.

When Hegel began delivering lectures in philosophy at Jena, he presented *inter alia* a course on Ontology, the study of Being, and the lectures that Hegel developed as a *critique* of ontology became the first part of the Logic entitled 'Being'.

To make a beginning for philosophy, Hegel needed a concept for which there are no presuppositions. Other philosophers and scientists began their systems from hypotheses or axioms. These were unproven propositions expressing 'clear ideas' and defining the terms to be used in the theory and their relations to one another. But Hegel would not accept that an entire philosophical system could rely for its validity on unproven and arbitrary axioms. The concept of Being provided Hegel with just such a clean start for philosophy. In this sense the *Phenomenology* is not part of his philosophy, but is simply the Introduction, leading the reader to philosophy, by retracing the steps that thought itself has taken to come to philosophy. The Logic then presents itself as the truth or conclusion of that journey. The relation of the *Logic* to the *Phenomenology* is the same as that of conceptual knowledge to narrative rationality.

Unlike Descartes, who also set out to make a foundation for modern philosophy without presuppositions, Hegel did not turn to inward, personal contemplation in search of certainty, but simply took the *concept* of Being itself, as what is given to philosophy by its own history, and subjected that concept to immanent, logical critique.

All Hegel's major works have the same structure in fact: he identifies the simple, abstract concept of the subject matter of the given science, and then he applies the method, the model for which is given in the Logic, to elaborate what is implicit in the given concept: "the peculiar internal development of the thing itself."

So, the Logic begins with a critique of Being, to bring out what is contained in the concept of 'Being'. The truth of Being is a Concept, so the Logic turns out to be the science of concepts. But Being is the Concept still 'in itself'. 'In itself' means what the thing is independently of and prior to our knowledge of it, before its content is exhibited, which is by definition unknowable. But here we are talking about formations of consciousness, so we mean the concept under conditions where the formation of conscious has not *yet* unfolded and become conscious *of itself*. The "yet" implies that should the formation of conscious which is 'in itself' further develop, then it may become *self-conscious*.

What does it mean: a formation of consciousness (read 'social movement') which is not *yet* consciousness of itself? This only makes sense as an *observer* perspective, because if we are talking about a formation of consciousness which is not self-conscious, then the only terms we have in order to describe it are observer terms.

But what does it amount to? It is an idea or a form of social practice or a project which cannot yet even be described as emergent. People are acting in a certain way, but they are yet not conscious of acting in any such particular way. For example, a lot of women were having trouble managing the conflicting demands on them which emerged from increased access to the workforce in the late 1960s and early 70s. Social commentators noticed this problem and the phrase "work-life balance" entered the language in 1977 (OED 2006), though it was not until the 1980s that the phenomenon was fully described, and working mothers were generally conscious of themselves as people dealing with "work-life balance." During those early years when the phenomenon was either unnoticed or noticed only by observers, the problem of "work-life balance" was "in-itself"; it was the stage of Pure Being for the concept of "work-life balance."

To take an example from psychology: I went to the shopping centre today and it was only after 10 minutes that I noticed how many school-age children were about and a few minutes later, it dawned on me that it was school holidays. Prior to that realisation, the fact that there were lots of school-aged children around existed, but I hadn't noticed: that is the stage of Being. Once I'd put two and two together

and realised that it was because it was school holidays, that was the stage of the Concept. So in psychological terms, Being is also a concept, but a concept which is so undeveloped that we are not even aware that it is there.

So this is what Being is, and we will see presently that Hegel is able to demonstrate the nature of Being by a critique of the concept of Being.

If there is to be some thing amidst the infinite coming and going, the chaos of existence, the simplest actual thing that can be is a Quality, something that persists amidst change. And if we ask what it is that changes while it remains of the same quality, what changes while leaving the thing still what it is, then this is what we call Quantity. But a thing cannot indefinitely undergo quantitative change and remain still what it is, and still retain the same quality; at some point, a quantitative change amounts to a change in Quality. The unity of Quality and Quantity, we call the Measure of the thing.

Thus there are three grades of Being: Quality, Quantity and Measure. We apply these categories to things that we regard as objects, the business of the positivist sociologist, the observer. Even a participant in a not yet emergent social change or sociological category, has to play the role of sociologist to be conscious of it.

So that's Being, existence which is *in itself*, not yet self-conscious, senseless, just one damn thing after another. We will see below how Hegel goes about demonstrating the dynamics of a movement which is in itself, through critique of the concept of Being.

Essence is Reflection

The second division of the Logic is Essence. For Hegel, Essence is not quite what it means for other people. When feminists talk about "essentialism," for example, they are referring to the belief that women are defined and differ from men because of what is in their biological nature. Ancient philosophers debated what was the "essence" of this or that thing as opposed to what was contingent or inessential. For Hegel, Essence is this *process* of 'peeling the layers off the onion', of searching for what is behind appearance, of probing reality, but in no way did Hegel think that there was some fixed end point to that process, and certainly not some reified natural property. Essence is just that *process* of probing the in-itself and bringing to light what is behind appearances.

Essence is reflection. Suppose something is going on in the world, maybe some emergent project, some new form of social practice, or

some news item that is attracting attention, some new art form, a new fashion idea. It may first come to light as meaningless observations, measurements of quantity and quality. But people try to make sense of it, people reflect on it. This process of trying to make sense of things, to figure out what it is, is Essence.

When people reflect on things, they do so only with the aid of what they already know. New forms of social practice arise only in and through existing forms of social practice. So reflection is a good term. It is new Being, reflected in the mirror of old concepts. It's like what Marx was talking about in the "Eighteenth Brumaire of Louis Bonaparte":

> "The tradition of all dead generations weighs like a nightmare on the brains of the living. And just as they seem to be occupied with revolutionizing themselves and things, creating something that did not exist before, precisely in such epochs of revolutionary crisis they anxiously conjure up the spirits of the past to their service, borrowing from them names, battle slogans, and costumes in order to present this new scene in world history in time-honoured disguise and borrowed language."
> (MECW v.11: 103)

Essence is a process which begins with the simplest kind of reflection on quantitative and qualitative changes, the discovery of difference, and eventually leads to the formation of a new concept, an adequate concept befitting a unique form of social practice. The new concept emerges as a *leap*, because in Essence what is new is reflected in an *old mirror*. It can't be given by any kind of formula. But Hegel outlines the logical stages through which the genesis of a new concept can pass: broadly, a series of counterposed propositions, a contradictory struggle of Fors and Againsts, 'on the one hand and on the other hands'. In the course of its genesis, the new phenomenon, if such it proves to be, penetrates and absorbs light from every other aspect of life.

The grades of Essence are as follows.

Firstly, we have Reflection. The process of Reflection is described as the dialectic of Matter and Form. This means that when a quantitative-qualitative change oversteps the bounds of Measure and announces itself as a new Thing. The question is: is this merely a new Form of the same material or a completely new kind of Matter, a material

change? Have we just had a lot of extreme weather events this year, or is the weather changing?

At bottom, Form and Matter are the same thing. Matter means here a substrate that underlies different forms. Wherever you propose a different *kind* of matter, it could be reduced to the same old matter in a different form, but the question remains: is this a new form of the same old thing, or a really new thing.

The second division of Essence is Appearance. Appearance is the dialectic of Form and Content. This can be seen as the struggle of the new content to find a form adequate to itself, like a composer trying to find the correct instrumentation for the theme or a socio-economic system finding an appropriate political form for itself. It is manifested in a succession of a series of forms, each ultimately proving to be inadequate to its content while in turn, bringing forward new content.

The third division of Essence is Actuality, which is the dialectic of Cause and Effect. The entity arises as the effect of something, but then it is also in its turn, the cause of things. Each effect is also a cause, just as much as every cause is also an effect. The ramifications extend out in all directions until it feeds back on itself. This culminates in the notion of Reciprocity: that everything together forms a complex of mutually causing effects all inseparable from one another. A 'Gestalt' is beginning to emerge. Simple propositions turn out to have ramifications and come under criticism, simple proposals become concretized. But it still remains a form of reflection, and even the mutuality of cause and effect, and the increasing adequacy of form and content, do not yet constitute a concept of what it is.

This is the process of a new type of self-consciousness struggling to find itself, so to speak, still testing out all the old categories. This process of genesis is always the struggle between opposing propositions. In politics, the contending parties take opposing positions, but they still argue within the bounds of the *Zeitgeist*, and the *Zeitgeist* changes, supplanting old disputes with new ones. That's the nature of Essence: a series of oppositions which persist, but as one dispute moves into the limelight it pushes others into the background. "Old ideas give way slowly. ... We do not solve them: we get over them. Old questions are solved by disappearing, evaporating, while new questions take their place" (Dewey 1910: 41). This is the genesis of a Concept out of its Being. Essence is the truth of Being; it is what is essential in the coming-and-going of Being, Being stripped of what is inessential.

An important qualification needs to be made here though. While these stages, such as Being, Essence and Concept, and the divisions within these stages, are presented as logically and conceptually distinct 'stages', when realised in processes of development they by no means constitute distinct, successive stages. And not because they have 'fuzzy' boundaries and overlap. Rather the different processes subsume and recapitulate one another. For example, the various forms which are manifested in the stages of Being and Essence are Concepts, but they are concepts in the process of being overtaken by new concepts that are themselves being ushered into being. And when a new concept emerges at last, it may then later find itself to have been just a stage in Essence as an opposite Concept emerges.

The Abstract Concept

The third part of the Logic is the Concept, in German, *Begriff*, which is the noun from the verb *begreifen*, to comprehend, derived from the verb *greifen*, to grasp, just as the English 'to comprehend' comes from the Latin *prehendere*, to grasp or seize.

The Concept is a complete break from Essence. It is initially *abstract*, meaning undeveloped, lacking in connections with other things, poor in content, formal and so on, like the *Urphänomen*, as opposed to *concrete*, which means mature, developed, rich in content, having many nuances and connections with other concepts. Hegel does *not* use the words abstract and concrete to indicate something like the difference between mental and material, So the third Book of the Logic follows how the Concept begins with an *abstract* concept, just the germ of something new, which then becomes more and more *concrete*. That is the development of the Concept.

Think of the abstract concept as a new idea, like at some point in 1968, somewhere in the US, a woman reflected on the relation between the position of women and the position of Black people who suffered from racism, and coined the word 'sexism'. This was a new idea, in everything that had gone before since people like Mary Wollstonecraft talked about the impact of gender roles on women in the 18th century, this idea had been in gestation, until it suddenly sprung into being in 1968. Subsequently, all the social practices that followed from the concept of sexism concretised, deepened and complicated that initial concept.

This new abstract concept is not gradually shaped in Essence; it comes as a complete break. It is like the judgment of Solomon, settling all the arguments with something that comes out of the blue. It is a

breakthrough which launches a new science or paradigm, a new movement, drawing together all the threads from the confusion that preceded it during its period of gestation, enunciating the lessons of the story.

The Concept is the unity of Being and Essence, because it makes sense of the original observations, the facts of the matter, as well as all the disputes and alternative explanations. It is there, immediately, and not different from Being, but along with all the conflicting factions, it is now self-conscious. In that sense it is a negation of the negation, and immediate perception is reconstructed on the basis of the new concept. It is both mediated and immediate. The *concept* of the thing comes closer to what would others might mean by the 'essence of a thing', but Hegel uses the word 'essence' for the whole process, and the truth of that process, of 'essence', he calls the Concept.

Being and Essence, which are together what Hegel calls 'The Objective Logic', make up the *genesis* of the 'Subjective Logic', which is the Concept.

The first section of the Concept is Subjectivity, or the Subject. For Hegel the Subject is not an individual person, but a simple unit of consciousness arising from social practices which implicate the whole community, and reflected in language, the whole social division of labour and so on. It is Hegel's version of Goethe's *Urphänomen*, the simple thing or relation which captures in a nutshell the whole problem, the root of it all.

In a sense, for Hegel, there is only *one* concept. But that *one* concept, the Absolute Idea, is the outcome of a whole, long-drawn-out historical process, a process in which different individual concepts are posited at first as abstract Concepts, and then enter into a process of concretisation in which they merge with everything else, while developing their own inner resources. The Absolute Idea, which is the final product, is the result of the mutual concretisation of all the abstract Concepts, the objectification of each one on every other. In this conception, issues come up about Hegel having a master narrative, about totalising everything, and of practicing a kind of philosophical colonialism. But we can get all we need out of Hegel's Logic without swallowing the Absolute Idea.

The first section of the Concept, the Subject, is very complex and very important. Think of it as a single *unit* of a formation of consciousness.

The structure of the Subject is Individual-Universal-Particular, which are referred to as *moments* of the Notion (not successive stages). That

is, the subject entails a specific, all-sided relation between *individual* finite actions; the *particular* norms of on-going activity and social relations entailed in the relevant social practice; and the *universal*, eternal products and symbols through which the Subject is represented.

The divisions of the Subject are the Notion (of each of these moments), the Judgment (which is a connection between two moments) and the Syllogism (in which a judgment is mediated by one of the three moments).

The process of concretisation takes place through *objectification* of subjectivity, that is, through the subject/object relation. The Object, which is the second division of the Concept, may be *other* subjects, subjects which are Objects in relation to the Subject, or subjects which have become thoroughly objectified. Objectification is not limited to the creation of material objects or texts. Objectification is also 'mainstreaming', or institutionalisation. The process of development of the Subject is a striving to transform the Object according to its own image, but in the process the Subject being itself changed and in the process of objectification becomes a part of the living whole of the community. At this point, the particular history and self-consciousness of a Concept has become part of folklore, while the concept itself has become just part of the language, and the entire conceptual system of the community; the unique content of a concept is now tied up with every other concept.

The subject/object relation goes through three stages, the *mechanical* relation in which the subject and object are indifferent to one another and impact one another externally, the *chemical* relation, in which there is an affinity between subject and object, and the object presents itself as processes rather than things. The third division of the Object is *organism*, where the subject/object relation becomes a life process in which each is to the other both a means and an end.

The unity of Subject and Object, the third and last grade of the Concept, is the Idea. The Idea can be understood as the whole community as an intelligible *Gestalt*, it is the summation of the pure essentialities of a complete historical form of life. It is the logical representation of Spirit, or of the development and life of an *entire community*, in the form of a concrete concept.

Again, it is not necessary to swallow this idea whole. If you don't accept that a community, at any stage in its history whatsoever, can be encompassed in the single concept, then this doesn't invalidate the

whole of the Logic. Individuals are always part of *some* fraction or tradition within society.

Assessing the experimental work of the cognitive psychologists with their Prototype Theories and the Theory Theory and so on, in the light of these ideas poses very challenging problems. But perhaps one or two observations can be made at this point. Hegel's approach suggests that understanding the psychology of a concept necessarily entails understanding the *cultural historical genesis* of the concept, the *ontogenesis* of the concept – how the concept develops through the life experience of a person – and finally *microgenesis* – the rapid process of recognising something and responding. Responses are conditioned by a lifetime's experience in a society embodying centuries of its experience in language, art and technology, and institutions. We cannot expect *one* model of a concept to tell us very much and nor can we expect an eclectic bundle of alternative theories to fare much better. The challenge is how to appropriate this experimental work into a theory of concepts which is dialectical.

Let us briefly review the forms of movement and change we have found in the Logic, before moving to a more detailed outline of how Hegel presents this dynamic in the form of logical critique.

The Genesis of the Concept

We have seen that the Logic is made up of the three Books, each dealing with one science, based around the critique of one concept: Being, Essence and the Concept. Hegel also divided the Logic into two *volumes*: Being and Essence constitute Volume I, the Objective Logic, and the Concept Volume II, the Subjective Logic.

The Objective Logic is the genesis of the Concept, the process leading to its birth, it is the pre-history of the Concept. On the other hand, the Subjective Logic is the process of development of the Concept itself, its maturing and successive concretisation, beginning from the first simple, undeveloped embryo of a new theory or ideal or whatever to becoming just part of the language and way of life.

This is an important distinction for any theory of concepts. This issue could be illustrated in relation to how Hegel developed his social theory. Hegel came to the conclusion that world history, as such, begins only with the emergence of Law, or Right. He determined that the simplest and unconditioned, or archetypal form of Right was *private property*. In the Subjective Spirit he traced how conditions for the emergence of private property developed in pre-history, and then, under the title of "Philosophy of Right," he developed his entire

theory of modern society – family, economics, morality, ethics, politics and government, international relations and world history – by unfolding [*erweisen*] the implications of institution of private property. Private property was the abstract concept, the germ, the *Urphänomen* of modernity. Once private property came into being and implanted itself, everything unfolded from that (he claimed) in a lawful, necessary process, which is contained in the concept of private property itself, and has only to be disclosed and developed. But the arrival of private property was a completely different kind of process traceable to the emergence of human life from natural conditions. So Hegel's concept of world history was... private property. In the development of the human spirit, the arrival of private property marked, for Hegel, a discontinuity, and complete break, and the concept which constituted this break had to be the foundation for any theory of what would follow. In the "Philosophy of Right," the first section is on private property (Hegel called it Abstract Right), the abstract concept of the subject matter of the work which is World History, the history of States. What is noteworthy though is that the concept of Right is not derived or proved within the "Philosophy of Right," but on the contrary, is derived in the last section of the Subjective Spirit, which is concerned with conditions of human life irrespective of law, private property, the state and so forth. Here he shows how certain problems (e.g. insecurity, trade, slavery) which were insoluble without the institution of the right of private property, which Hegel took to be synonymous with respect for the autonomy of a person. Here we see, in a sense, Volume I and Volume II of the science of world history, as Hegel saw it.

This *unfolding* of what is *in* a concept, is quite distinct from the process of *genesis* which led up to the creative leap in which the concept is *born*. Once the situation has produced a concept, it is relatively unimportant how it came about. So this is a very important corrective to the conception of Hegel as an historical thinker. Understanding the forces which lead to a situation certainly helps in the formation of a concept of it. But the scientific study of *the situation itself* means to grasp it as a *concept* (which a study of its historical origins contributes to but is not equal to) and then to determine what follows from, or unfolds from the concept. The concept is a nodal point in development. To grasp the concept of something, presupposes an historical investigation of it.

So the starting point of a theory is the Concept which forms the subject matter of the theory, not Being, even though in reality the

science emerges from Being. Both the Objective Logic and the Subjective Logic begin from a kind of simplicity. In the case of the Objective Logic, the simple starting point is *unreflective immediacy*, which passes over to reflected immediacy. In the case of the Subjective Logic, the simple starting point is an idea, an *abstract concept*, a relation which, having been the outcome of a long process of gestation and remains from beginning to end the subject of the science. The development of a theory is not mindless of 'externalities'. The maturation of a concept is a logical process, but only thanks to the incessant 'correctives' provided by events and external criticism. In trying to understand the necessity of the thing, we have to continually go back to the original concept and rethink things, and make it more precise, forming a more and more concrete conception of the thing. In studying the history of emergence of the concept, the point is to comprehend the mistakes and conflicts and false starts of the past in order to arrive at a simple and clear concept of the thing which is to form the starting point of the science. All the preceding conflicts are then overcome and *sublated* into the new concept.

Each Division has a Distinct Form of Movement

A concept is continuously challenged and subject to critique, while itself being the outcome of problem solving and criticism. Concepts can only be understood in terms of a process of this kind. No theory relying on a static image will do. Concepts are always in movement and change. So it is important to note four different kinds of movement that are to be found in the Logic and to clearly distinguish them from each other.

Each of the three books of the Logic constitutes a self-standing science, beginning with an abstract concept, and unfolding what is contained in that concept. The three sciences are the science of being, the science of reflection and the science of the concept. Each of these three sciences manifests a distinct form of movement. In addition, the leap from one science to another, the 'creative leap', is a fourth distinct form of movement.

In Being, the form of movement is *seriality*. That is, a concept passes away and has no more validity, and is then replaced by another, which in turn passes away. It's just one damn thing after another, a transition from one to the next to the next without any progress. Like the images of things passing through your consciousness as you sit in a train passing through a suburban landscape.

In Essence, in the passage from one relation to another, the former relation does not pass away but remains, although pushed to the background, so the form of movement is *diversity*.

In the Concept, each new relation is incorporated into the concept with all the former relations merged with it in a more concrete concept, so the form of movement is *development*.

Hegel puts it this way in the *Shorter Logic*:

> "The onward movement of the Concept is no longer either a transition into, or a reflection on something else, but *Development***.** For in the Concept, 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 Concept.
>
> "Transition into something else is the dialectical process within the range of Being: reflection (bringing something else into light), in the range of Essence. The movement of the Concept is development: by which that only is explicit which is already implicitly present." (1830/2009 §161)

In each Book, there are different forms of *reference* between the opposites. Hegel describes the difference between Essence and Being thus:

> "In the sphere of Essence one category does not pass into another, but *refers* to another merely. In Being, the form 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. ...
>
> "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." (1830/2009 §111n)

For the fourth form of movement, Hegel usually uses the phrase "is the truth of," as in "the Logic is the truth of manifest spirit" and "the Concept is the truth of Being and Essence." Here the foregoing content is *grasped*, mastered if you like, or "sublated." That is to say, just as a certain process is terminated and negated, it is also transcended and maintained in a more enduring and stable form. This form of movement I liken to how we 'draw the lesson' from an experience.

Hegel's Logic and Categorisation

I mentioned above that dialectical logic offers the only alternative to categorisation by attributes. Categorisation by attributes is essentially what Hegel is exhibiting in the first section of the Logic, Being, which issues with a concept as a catalogue of measures. The process in which the concept is identified or recognised is that described in Essence. This does not involve abstraction of isolated attributes, but rather a kind of successive approximation process in which known concepts are tested out and successively replaced by more adequate concepts. In the third section, the concept is grasped initially in its uniqueness and its concrete relations with other concepts are developed.

These forms of movement Hegel worked out in philosophical terms, based on a study of the development of states, sciences, art, technology, culture and so on, but also informed by a life-long involvement in education.

In the two next chapters, I will outline in more detail how Hegel develops the Logic through critique. But this much should be clear: the project of creating a psychology of concepts on the basis of a concept being some kind of image inside the head is untenable. Only a theory which takes concept to be a *process* is going to be able to capture the nature of concepts.

Chapter 8. The Genesis of the Concept

Being

Let's go through how Hegel saw the birth-process of a concept, beginning with Being. Since concepts emerge at a number of different levels – for example in historical development or in social movements, in the growing up and education of an individual person and their life journey, or 'microgenetically', in a specific thought process – I will illustrate Hegel's idea in different contexts. That this is possible indicates the degree of generality of Hegel's idea. It also shows that even though each process is the development *of a concept*. Hegel's focus in the Logic is on the concept rather than the people coming to the concept. But for Hegel, the motive force for change is in the nature of the concepts themselves, so his idea sheds light on processes of conceptual change at a number of different levels.

Although Hegel liked to take the ancient Eleatics as the exemplars for Being, Descartes serves just as well to illustrate the idea of a philosopher who advocates Being. Descartes marked the beginning, the moment of Being of modern philosophy, that is, philosophy which takes thought as its object. Descartes made a start for modern philosophy with the declaration "I think therefore I am." He took as his starting point his own thought, without any prior assumption or precondition, discounting the evidence of his senses and the inherited wisdom of the past. In the beginning, there is nothing.

All new sciences begin more or less like this, setting all previous knowledge of the subject at null. For example, in their introduction to "Concepts. Core Readings," Laurence and Margolis wrote that:

> Aspects of the [classical] theory date back to antiquity. And the first serious challenges to its status weren't until the 1950s in philosophy and 1970s in psychology (1999: 10).

That is, they saw Cognitive Psychology's critique of the so-called 'classical theory of concepts' as marking the *beginning* of the psychology of concepts.

Hegel sees the sociological view of the emergence of a new self-conscious form of social practice like this: at first, there is no consciousness of the given form of practice at all. Even though the new social practice is being carried out by people who do what they do on purpose, but they are not conscious of being part of a social movement with others. Criminals are not conscious of being part of a

crime wave. There is always a time when a certain something is going on, before anyone notices it all, and it is only possible for it to be noticed if it is *already* going on, and it is only thanks to something which is going on being noticed and the participants becoming aware of it, that we can have a new concept.

In terms of psychological emergence of a concept, then Being is where impressions are flashing by, but the person sees nothing, nothing of interest in any case.

Hegel elaborates the development of the stage of Being through a critique of the concept of Being. Being, Hegel says, is *just* being, not being any determinate thing, just being. Thus, Hegel points out, Being is Nothing. As soon as any definite content were to be given to Being, then it would no longer be Pure Being. But the discovery that Being is Nothing *is* a start. For example, the collapse of what was taken to be the only theory of the psychology of concepts, but which turned out to have no psychological reality at all, did more than wipe the slate clean. The new approach to psychological reality marked a beginning, a Becoming of *something.* It was not a Nothing at all, but a Determinate Being. Continuing the recent American Psychology of Concepts as an example, the destruction of the 'classical theory' and the methods employed to do so represented the *Becoming* of the new science.

So here, by means of purely logical critique with no empirical content in the normal sense, Hegel established the first series of concepts of the Logic: Being, Nothing, Becoming and Determinate Being (i.e. Dasein). This is just how something brand new emerges, counting its predecessors for Nothing.

This series of concepts illustrates the basic form of movement characteristic of Being. From here Hegel outlined three stages of development of Being: Quality, Quantity and Measure.

What makes Quality, Quantity and Measure stages of Being is that they remain forms of concept which are not self-conscious, that is, they are completely objective, describing the object in *observer terms*, and terms which lack a concept of the phenomenon as such. This is the standpoint of natural science, mathematics and contemporary, positivist social science. In contemporary mainstream social science, one doesn't have, for example, political movements or even political opinions. You just have so many votes for such and such a party, so many days of lost production due to industrial action, so many positive and negative responses on a survey form and so forth, and any amount of statistics and correlations.

Advocates of this kind of science insist on the necessity of basing science in observation, measurement and, in short, facts not opinions. And so long as we don't elevate this principle to an absolute, it can't be denied that it is a necessary, even unavoidable stage in the development of a science. Before you can determine whether hygiene is a cause of susceptibility to allergies, you have to gather a lot of data, and hypotheses about the causes don't count for much in such a complex problem until you have a great deal of well-organised data on which to base any idea.

So let us look at the basic process of perception when confronted with an entirely new phenomenon for which we have no concept. First off you see something, and this Hegel calls a Quality, not dissimilar from the philosophical term *qualia*: a unique something, a "certain *je ne sais quoi*," a determinate character which just *is*. "A something is what it is in virtue of its quality, and losing its quality it ceases to be what it is" (Hegel 1830/2009 §90). But continued observation of what may or may not be the same thing raises the question of Quantity, which is "a characteristic of such kind that the characterised thing is not in the least affected by any change in it" (1830/2009 §99). A house is a house whether it be large, very large or very, very large.

So something can be characterised by two kinds of attribute: that which can change without the thing ceasing to be what it is (quantity) and that which, should it be changed, the thing is no longer what it is (quality). Then follows Hegel's famous observation that quantity can change without affecting the character of the thing only up to a point, beyond which further quantitative change changes the character of the thing. This is what Hegel calls the measure of the thing: with Measure we have the whole process of quantitative categorisation and 'profiling' of the phenomenon, all remaining within the domain of non-conceptual, 'objective' observation. This is how perception of a new phenomenon progresses.

Consider the way the Exemplar Theory arose out of research into the Prototype Theory. At a certain point, apparent weaknesses in the reproduction of Prototypes obliged a researcher to conclude that quantity had passed over into quality, beyond a certain amount of observed instability we had to say that there was not one but many prototypical images in play in how subjects were categorising objects.

In terms of psychology, Being is characterised by the fact that every impression comes before the mind independently of every other, fails to excite any resonance in existing knowledge and fades away without a trace. As they say, just one damned thing after another. But this is

the normal condition of the mind at every moment: the continual stream of sense impressions, whether we are paying attention to them or not, the babble of inner voices talking nonsense. But it is this background of meaninglessness which is the soil from which concepts arise, without which concepts are impossible. Syncretism is not true concepts, but it is the birthplace of concepts.

But all the moments of Being, all its Qualities and Quantities, can only exist at all because they are already concepts, otherwise they couldn't be recognised at all. As Hegel said in the beginning, Being is Nothing, and if it is given any determinate content at all, it is no longer Being. The point is that, as remarked earlier, the divisions of Hegel's Logic are not successive stages, but rather *subsume one another*. Pure Being is Nothing. But only relatively so, in relation to a given emergent process.

Being develops to the point of qualitative/quantitative research into phenomena using the existing categories and standards of measurement, in other words, the normal routine practices of science. But let us reconsider the example given above of the emergence of the Exemplar Theory out of difficulties in the Prototype Theory. Researchers using the prototype theory presumed there could be only one Prototype, but the theory fell into contradiction with itself, collapsed and the researcher had a new idea: exemplars. First thing to notice is that the researchers had to have a concept of Prototype to start with, and all the experimental results that they produced were based on interpretation in the light of a theory of Prototypes. In other words, the raw data (Being) was reflected on a body of theory (Concept) and it was out of the differences and contradictions that the new theory (Concept) arose. This is the stage of Essence (or Reflection) to which will turn next. But the resources for that process of reflection and the leap to a new concept do not belong in Being, they are not given in the data, so to speak, but belong to the subsequent stages of development of the Logic, in already-existing concepts. As far as you can get in the stage of Being is Measure which produces a kind of outline of the new concept, but cannot join the dots. That requires reflection.

Reflection

The basic thought behind Essence (the science of reflection) is this: you can only cognise something to the extent that you have *some* concept of the phenomenon to begin with. The new data (Being) is reflected in the old forms of knowledge (Concept) and what results is

a process of digging deeper and deeper into the data towards disclosing a new Concept of what is (Being). It is the process through which a new concept emerges out of a meaningless stream of events.

Hegel begins Essence with a series of moments where two of what were taken to be the same thing differentiate themselves. The first moment is Identity: "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" (1830/2009 §115).

The second moment is Diversity or Difference: "Maxim of *Diversity*: ... 'Everything is various or different': or 'There are no two things completely like each other" (1830/2009 §116n).

The next moment is essential difference, or Opposition: "the unity of identity and difference; its moments are different in one identity and thus are *opposites*" (1816/1969 §908). That is, the fact that two of the same things are different makes them specifically opposites of one another.

The unity of these two opposites is contradiction: "The exclusive reflection is thus a positing of the positive as excluding its opposite, so that this positing is immediately the positing of its opposite which it excludes" (1816/1969 §935).

But this contradiction has to be resolved. It has to bring out its Grounds. "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" (1830 §121).

Hegel recapitulates the whole preceding string of moments as he explains each stage, emphasising the nature of Essence. As each pair of opposites brings forward a new relation of opposites, it slips into the background, but does not disappear. Each pair remains in play, because we have in each case not just two opposites, but a *unity* of opposites. This is the basic process of reflection, the emergence of difference and their resolution, which each time brings out new aspects, not just of this or that moment, but of the whole underlying process.

As remarked earlier, this process of reflection is exhibited for example in the development of a science in which to begin with all the participants declare a kind of unity, assembling behind the same banner, under the name of a new current of science or whatever. Then differences emerge, at first not taken too seriously, but then these

differences sharpen into disagreements, which begin to become consistent along certain lines. People begin to enquire into what lies behind these differences. The source of differences in data and its interpretation shows itself to be different ideas about the subject matter. Very soon we have determinate, competing currents in the science. The same kind of process is manifested in your thinking as you study some process and patterns emerge and so on.

The process is called 'Reflection' because it is based on a preconception of what is being experienced, and that preconception is retained, whilst what is experienced is manifestly something new and different. So we have new Being reflected in old Concept, but that old Concept originates nowhere else but in that same Being. At this stage, the participants do not have a new concept, and if we are talking about an emergent social movement, the participants will see these as internal differences and not necessarily of any significance. That is, we do not see a new concept yet.

Note also how Hegel presents this idea not as the results of a survey of the experiences of observers, but as a logical critique of firstly, the maxim of Identity, and then each new maxim as it emerges. The whole of the Doctrine of Essence is built up in this way. Social movements and ideas do emerge in this way, through people's thoughtful reflection on the logic of what they stand for, in the light of experience. So Hegel captures what is essential in developing thought by this method of logical critique.

This emergence of contradictions in the flow of impressions, which calls attention to what is going on, initiates what Hegel calls Reflection, the first of three divisions of the Doctrine of Essence: Reflection, Appearance and Actuality. From here on there are always two opposite determinations in a dialectical relation with one another.

The first division, Reflection, Hegel sees as the dialectic of Matter and Form. The basic problematic of this stage is this: yes, this is something different, but do we have a new Matter here, or is this just a new Form of the same Matter? The difference between Matter and Form is always somewhat of an open question. By showing that a new thing can be understood as not a new thing at all, but just a new form of the same old thing, we may gain a deeper understanding of it. At the same time, something really new always appears in the guise of just another variety of the same old thing. At the time Hegel was writing, it was somewhat of a fad in natural science to 'explain' every new phenomenon by the supposed discovery of a new matter. The classic case of this would be the invention of phlogiston as a type of

matter which was supposed to explain heat, for which is was more or less a synonym, and therefore explained nothing. It was subsequently proved that heat was not a type of matter, but rather a form of the movement of matter itself. So there is a whole dialectic going on here, in how the flow of contradictions impels new forms of understanding or deepens old forms.

The second division, *Appearance*, is crucial to Hegel's critique of Kant and the whole idea of phenomena being just the appearance of something supposedly more essential, the 'thing-in-itself', which is not given in Appearance. For Hegel there is no impassable barrier between Essence and Appearance, but rather, what is essential is contained in the appearance, it only has to be brought out and recognised. Things are different from what they appear to be, but matters don't remain like that, appearances tend to give way to reality, masks are dropped sooner or later, and things show themselves for what they really are.

Hegel sees Appearance as the dialectic of Form and Content. Every content has to take *some* form, every form has *some* content. Development is the struggle between form and content – the struggle of content to find a form adequate to it and shake off an inappropriate form, the struggle of a form to contain and express its content. The result is a continual interchange between form and content. For example, a political ideal which has given itself the form of an electoral party, wrongly understanding its position in relation to other political forces, later transforms itself into a lobby group seeking to find supporters and influence all the other parties from within, rather than competing with them. For example, a novel which the writer produces in the form of a third-person narrative, only really works when the writer changes it into the form of a diary. And so on. When something new comes on the scene, that is a new content, it will always at first adopt an old form, and its development is the search for an appropriate form. In terms of perception, a new form is always initially taken to be 'just' a new form, but to have the same old content you always knew this form to have, but in time the real content may come to the surface. So the dialectic of form and content can be seen to be both subjective and objective. It is no longer, as we had in Being, a purely observer process. On the contrary, the process of reflection produces a dialogue between the inner and the outer and an interchange between subject and object. "Essence accordingly is not something beyond or behind appearance, but – just because it is

the essence which exists – the existence is *Appearance*." (1830/2009 §131).

The third and last division of Essence is *Actuality*, which is the dialectic of Cause and Effect. Here the emergent process is grasped in its connection with everything else, that is to say, its Reality. Form and content are not yet reconciled, but the struggle between form and content has passed over into a myriad of interconnections, which still lack a concept so that they could be understood as a whole. Reality signifies an ideal which has taken shape. In Reflection and Appearance, the new process is seen only in outline. It suggests itself, so to speak. 'Reality' entails a concrete connection with everything else in the world.

The first division of Actuality Hegel calls *Substance*, where a dialectic emerges between what belongs to the thing necessarily and what is accidental or contingent. The second division is the division of *Causality*, in which every effect shows itself to be also a cause and every effect also a cause. Here the relation between a phenomenon and its conditions, the transformation between a possibility and its realisation become the central concern. The relation of Causality sets up an infinite regress, and the chain of cause to effect, which in turn becomes cause, etc., etc., which eventually bends back on itself. There seems to be no proper starting point, no first cause, and everything is the cause of everything else and the effect of something else. This conclusion, that a certain set of circumstances do not have any one of those circumstances as the cause of the others, but all together constitute a reciprocal relation of causation, is called *Reciprocity*, the third division of Actuality. Reciprocity is often regarded as the completion of knowledge of the process. If poverty is the cause of unemployment, urban decay, poor health and dysfunctional schools, each of which is in turn the cause of unemployable workers, bringing up unruly children in a decaying neighbourhood, endlessly extending the 'cycle of disadvantage', then there is nothing more to be said. To finger any one point in this complex as the cause would be foolish. So says Reciprocity. Hegel exemplifies this with the question of the nature of the Spartans:

> "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." (1830/2009 §156n)

This is as far as the process of Essence can go. Reflection arrives at a complete description of the process, not just its existence and its appearance, but also all its interconnections ... but still lacks a concept of the thing. "Freedom is the truth of Necessity." Actuality brings the possibility of a *leap* to an understanding of the essence of the process and its being, a leap from blind necessity to freedom, to consciousness of necessity. "All that is real is rational; all that is rational is real," says Hegel.

It is evident that Reflection is not a flash in the pan, but rather the build-up of an all-sided knowledge of something. It is, by its nature, a protracted process, which becomes more and more diverse and multifaceted. But it moves the concept from syncretic, quantitative observations to a deep, all-sided understanding of something, framed in terms of the subject's existing body of knowledge. Every aspect of the thing, as it comes to the fore, is accompanied by an opposite aspect, producing puzzling, unresolved dialectical relations, and as the process continues, these opposite aspects are joined by further opposing determinations.

The problem is that the subject has no *concept* of the object. Or putting it differently, it has a full description of the thing, but as yet not a true concept of the thing itself. It knows everything about it, but it still cannot grasp the thing, as a whole. You know how it is, but not what it is. It's like when a new person which has ascended to leadership of another country, and you have found out all there is to know about him or her, but you still don't yet know what makes them tick. It's like chemistry before the Periodic Table of Elements was worked out, the physics of radiation before the quantum of energy was discovered, and so on. It is like a social movement that has not yet given itself a name, or a teenager who burns with anger and hope, but still has no idea of a career, a rebel without a cause. Actuality is the bringing together of all those conditions which make possible a breakthrough, but not yet the breakthrough.

It should be briefly noted at this point that the *Logic*, which presents Hegel's approach to science in general, is also central to Hegel's psychology, as he takes the human personality to be a concept, but I

will return to this after considering the section of the Logic on the Concept, which begins with Subjectivity.

Chapter 9. The Realisation of the Concept

The Abstract Concept

Volume 2 of the Logic is the science of the Concept (*Begriff*). The subject matter and starting point of this science is the Abstract Concept, or Subjectivity. All that has gone before is the *pre*history of the concept. Only with this abstract, undeveloped, simple concept, does the concept itself come into being, and go on to become a mature concept, a real part of a whole way of life. This general idea underpins Hegel's whole approach to science, so it can be illustrated in a number of very different contexts, and we can also illustrate the idea as presented by several different writers within the same genealogy which we are following here.

But what all views have in common is that this moment represents a cognitive *leap*: a complete break from what has gone before, which only prepared the groundwork for the leap. The leap is marked by the appearance of a new abstract concept, which cannot be deduced or predicted from the conditions out of which it arose. It relies only on what has gone before, but it is a creative leap, an 'Ah-ha moment'.

First let us recall the two important predecessors to Hegel in this matter: Herder and Goethe. Herder was concerned with how to grasp the nature of a people, and the nature of an individual person, as a whole. To do this he created the notion of *Schwerpunkt* – 'strong point', which he sometimes called *Mittelpunkt* – 'focal point' or 'centre of gravity'. By this Herder understood a central form of activity which was a person's, or a whole people's strong point. He did not suggest that this 'strong point' exhausted a person or a people's nature, but expressed somewhat the same as Marx intended when he wrote:

> There is in every social formation a particular branch of production which determines the position and importance of all the others, and the relations obtaining in this branch accordingly determine the relations of all other branches. It is as though light of a particular hue were cast upon everything, tingeing all other colours and modifying their specific features (Marx 1857/1971).

Such an insight about a people (or a person) can only arise out of a profound familiarity with the people concerned. A good biography, or the history of some event or social movement requires that the author find that lived experience or activity which casts its particular light on

everything, and gives unity and specificity to the narrative which is presented. This approach does not forbid a writer from seeing a number of such vantage points from which to approach a complex subject matter, but to have *no such* theme or motif would be a problem.

Goethe made this idea more specific with his idea of *Urphänomen*, the simplest, most primitive example of a member of a complex whole. As the name implies, the *Urphänomen* is something perceptible, a form that is stripped of all the contingent attributes found in any real instance, to expose the underlying original form.

As we shall see, Hegel's idea of the *abstrakt Begriff* is much more well-defined, but let us mention some examples from the history of science which illustrate what Hegel was trying to represent.

In 1667, Johann Becher explained burning and the consequent emission of heat in terms of a substance, phlogiston, which was emitted when something burnt. For the next 100 years, the Phlogiston Theory was the orthodox explanation of combustion, but as experimental science developed, this theory led into deeper and deeper contradictions. It was observed that materials actually *gained* weight when they burnt, but when burnt in a closed vessel, there was no change in the total weight. In 1778, Lavoisier proposed that there was an substance called oxygen which was present in the atmosphere and burning was simply combination with the oxygen in the air. The discovery of oxygen not only changed how heat and burning were understood, but revolutionised chemistry in its entirety. All the contradictions of the phlogiston theory evaporated.*

In 1839 (7 years after the death of Goethe), microscopy had reached a point where Schwann, Schleiden and Virchow were able to observe living cells, and proposed that all living things were composed of such cells, the 'basic unit' of living things, themselves simple living organisms, each arising from a parent cell. Goethe's hypothesis of a basic unit of life, perceptible to the senses, was confirmed, although not in the form he had imagined on the basis of the very limited tools for observation that he had had at his disposal. With this discovery, biology was put upon a modern, scientific foundation for the first time.

In 1887, the Michelson-Morley experiment, measuring the speed of light from the Sun both axially and transversely to the direction of the sun, proved that the speed of light was independent of speed relative

* Historians of science will say that this story is oversimplified; many adherents of the Phlogiston Theory saw no contradictions and held on to the idea till the day they died. But our topic is logic, not history.

to a hypothetical ether supposed to be the medium through which light waves were transmitted. This threw physics into insoluble contradictions. Possible solutions were that Maxwell's equations for electromagnetism were wrong (they had only been formulated in 1864), or that objects lengthened when they moved through the ether. Both 'solutions' created more problems than they solved. In 1905, Einstein found that it was necessary to modify Euclid's geometry, which had stood the test of time for 2,000 years, by introducing a *practical* definition of the measurement of time interval and distance. Physics was revolutionised at a stroke.

One could go on indefinitely with examples of breakthroughs like this, but these three most famous episodes in the history of science serve adequately to illustrate the kind of event which is involved with the move to the concept.

Each discovery is preceded by a period of conflict and turmoil in the theory of the phenomenon, brought to a point where knowledge in the field falls into ever sharper contradiction and even threatens to descend into disrepute. The new idea arises out of and rests upon the material of this struggle of opposites in that it suddenly makes sense of the observations which seemed previously to be senseless. No-one would have thought of such an idea except that someone is driven to do so by the new observations arising especially from the use of new techniques and new, more perfect instruments, and makes a suggestion which is quite senseless in terms of previous theories. The new idea does not gradually take shape but appears more or less all at once. Although it solves all the problems brought to light by previous theories it is not a deduction from these theories, quite the opposite. It has an entirely different foundation.

Thomas Kuhn (1962) has famously studied the sociology of these revolutions in science, describing the trauma that accompanies the emergence of what he called a 'new paradigm' and the active resistance mounted by the old theory.

Also, the new idea proposes a simple archetype: in the case of Lavoisier, a combination with oxygen; in the case of biology, a single-cell organism; in the case of Einstein, the act of measuring an interval in time or space. The entire theory will have to be reorganised with the introduction of this new idea, and the transformation of the science continues without ceasing until the whole of natural science is transformed.

In social theory we see just the same thing, except that the social sciences prove much more resistant to transformation than the natural sciences. Theories are, after all, themselves aspects of a formation of consciousness, and theory cannot be changed without changing social practices.

Hegel presented his entire theory of society, from law and morality, up to government and world history in the form of a science of Right. (The German word, *Recht*, has no English equivalent, meaning both 'right' as in what is right and 'right' as in having a right to do something, but also 'law' as in 'the rule of law'.) Hegel took 'abstract right', the archetypal form of right, to be *private property*. Everything that arises in modern society he saw as unfolding out of the institution of private property. But note that in Hegel's case, it is not just that he took private property as the 'key' to his theory of modern society. More than this. He saw the institution of private property in ancient or tribal society, or its introduction from without, as an *objective process* realised on the historical plane. Everyone knew about private property and its place in modern society, but Hegel saw that private property was the most primitive legal relation. Human communities were, for Hegel, formations of consciousness, *Gestalten des Bewußtseins*, as are branches of science, and the *Logic* was the science of the 'pure essentialities' of all such formations of consciousness. The 'breakthrough' here is not just Hegel's discovery of the place of private property in modern history. The 'breakthrough' is also the introduction of private property in communities which make the transition to modern society. Hegel was able to make sense of this as a rational, i.e., intelligible, process.

I will briefly mention some relevant examples of the discovery of an abstract concept in the resolution of problems and the refounding of a science in the light of Hegel's *Logic*.

In writing *Capital*, Marx made a more modest claim for a slightly different concept as compared to Hegel's *Philosophy of Right*. Hegel had claimed that private property was the abstract concept of modern history, including all aspects of modern society, from morality and the family up to economics, government and international relations. Marx, on the other hand, claimed that *exchange* of commodities was the abstract concept underlying *bourgeois society* (or 'civil society') – social phenomena outside of the family but independent of the state. This formulation deliberately understates the differences between Marx and Hegel, for the purpose of bringing out the not inconsiderable symmetry between them. But Marx was unambiguous

about the role played by the commodity relation in the formation of the ideas presented in *Capital*: "in bourgeois society, the commodity-form of the product of labour – or value-form of the commodity – is the economic cell-form" (Marx 1867).

One important function of the founding idea of a science is that it sets up the science and the phenomena which it studies, as a *Gestalt*. That is, the various phenomena in the given field are no longer an arbitrary collection of distinct things or things united by some attribute which is secondary to their real nature. Rather, all the different specific phenomena are seen as manifestations of the same basic relation, as species of the same genus, so to speak. The actual task of proving this, of tracing all the specific phenomena back to a common principle, is often the work of a generation, and in a sense, may never be complete. But the creation of the founding idea – the abstract concept – is usually the work of one person, or sometimes a small number who all independently make the same discovery under the same conditions.

If we ask: what is bourgeois society, or as it is more usually called today, the economy? Surely it is unsatisfactory to just list off the various things and events which are arbitrarily subsumed under the topic of 'the economy' or are influenced by the economy? But if we say that 'bourgeois society' is all those activities, ideas and things which necessarily arise from the exchange of commodities, don't we have a more satisfactory concept of 'the economy', even though we will most certainly find very diverse kinds of entity, borderline cases and other categorisation difficulties?

So the discovery of the abstract concept or *Urphänomen* not only provides the key to a collection of unsolved problems, and the foundation for a scientific approach to these phenomena, it also formulates a view of the phenomena as a *Gestalt*. Self-evidently, such a *Gestalt* may exclude things that were formerly included and include cases which were formerly excluded. Only in the case where we have formed a satisfactory concept of a person, for example, can we distinguish between instances where the person was acting out of character, showing their 'dark side', and when they are acting according to their character even though it may be under exceptional circumstances.

The solution is there before our eyes, but someone has to 'join the dots' before we see it.

Being and the Concept

Hegel says that "The Concept is the truth of Being and Essence" (1830/2009 §159), and the meaning of this very obscure statement can be explained as follows. "A is the truth of B" means for Hegel that "A is explicitly what B is implicitly." So this means that Being and Essence both essentially turn out to be the concept. So, for example, the succession of economic statistics turns out to be the end of the post-war boom. At the same time, the various opposing theories: poor economic management, failure of the banking system, militant trade unions, communist sabotage, ... turn out to be the end of the post-war boom. The notion makes sense not only of the 'raw data' but also of the various theories which failed to completely explain the data. Einstein's Special Theory of Relativity, not only explained the surprising results of the Michelson-Morley experiment, but it also explained why Newton's physics and Euclid's geometry had functioned perfectly well for centuries, even though the underlying logic had been shown to be flawed.

In fact, the concept cannot rest directly on the 'raw data'. It is essentially *mediated*. It would be impossible to demonstrate or prove theoretically Einstein's Special Relativity without in the meantime relying on the validity of Newton and Euclid's theories for the purpose of setting up the experiment. Without the Keynesian, Monetarist and Classical economic theories which were being used to regulate economic systems in the post-World War Two period, it would have been impossible to recognise the end of the post War boom and develop new policy instruments to regulate the new economic landscape.

This is the meaning of Hegel's aphorism: "There is nothing, nothing in heaven, or in nature or in mind or anywhere else which does not equally contain both immediacy and mediation" (1816/1969 §92).

In relation to perception, it means that no meaning can be found in Being as such. Perception is *always* mediated, there is no direct unmediated access to truth (the world in itself), no absolutely unprejudiced view of the world. Our view of the world is always conditioned by what we knew and believed beforehand. But it is equally true that there can be no theoretical conception which is completely free of sensuous and empirical content, which is not mediated by experience and sensuous contact with things and the objective properties of things existing independently of the subject. The immediacy of being and the abstractness of the concept are

always relative. What passes for immediate experience is different according to the concept through which Being is perceived. What passes for a purely abstract idea, is different according to the signs and artefacts by means of which it is conceived. The difference between Being and the Concept is relative not absolute. But Being, Essence and the Concept do represent three distinct processes in the development of a concrete concept.

Development of the Concept

The development of the Concept is not like that of Being, with each concept passing away to be replaced by another, nor like that of Essence where every concept has an opposite, both pushed into the background by yet new oppositions. The process of the concept is development: as Hegel says, "in the concept, 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 concept" (1830/2009 §161). That is, the abstract concept becomes more and more concrete as it matures, it takes on more nuances and domains of application, more shades of meaning and forms of expression. Although the initial abstract concept may give us that specific hue which is cast on everything – its archetypal form or strong point – the concept becomes more and more all-sided and internally differentiated in the course of its development.

There are two distinct processes involved in the development of the Concept, *internal* development and the *subject/object relation*, that is, concretisation which is involved in merging of the concept (or subject) with the object.

The internal process hinges around the Individual, Universal and Particular moments of the Concept, and this is probably the most crucial thing to understand if we are to draw on Hegel's Logic for a critical psychology of the concept. What is involved here is the real relation between the symbols, tools or other artefacts which instantiate the concept (the Universal), the social practices are organised around the concept and which constitute it as a part of social life (the Particular) and the individual thoughts and actions subsumed under the concept (the Individual). The point is that it is only in some ideal world that an instance of a concept (whether an action or thing) is exhibited in social practice exactly as determined in the universal; in general there is always some dissonance. This dissonance is on the one hand attributable to the abstractness or immaturity of the concept,

and on the other hand, because the community in which the concept exists differs from the concept and acts independently of the subject and without regard to it. In fact, these two aspects of the dissonance amount to the same thing. This brings us to the second aspect of the development of the Concept, the subject/object process.

In the subject/object relation, presented in the Logic under the heading of The Object, the object can be visualised as the larger community or 'the establishment'. We are concerned with the development of a new concept, and from this point of view, the 'Other' is the existing community, its ideology, institutions and cultural norms.

The process of the Object then is concerned with how the Object accommodates the Subject, so that the subject and object enter into relation and forms of activity together and share the use of artefacts created by the Subject, while the Subject also uses artefacts which pre-existed it, having been created by the Object.

Hegel specifies three modes of interaction between subject and object, which he calls Mechanism, Chemism and Teleology (or Organism). In Mechanism, the subject and object each retain their independence and relate to each other *externally*. In Chemism, the subject and 'its object' interact through an *affinity* with each other. Hegel sees Organism as a dialectic of Means and Ends in which subject and object begin to merge in a kind of ecosystem which is as much organism as environment.

These are the two aspects of development of the Subject (or Concept), the first entailing internal change by the subject, the second a change in the relation between subject and object. The third division Hegel calls the Idea, which represents the movement of the subject/object together, as discussed earlier in relation to the *Phenomenology*.

The Individual, Universal and Particular

One of the most challenging aspects of Hegel's Concept is the three moments of the Concept – the Individual, the Universal and the Particular, but it is just this which makes Hegel's approach so powerful. The moments of the abstract (or subjective) Concept are the structure of a concept both in its objective and subjective aspects, and is therefore well suited to represent the concept as a subject/object, that is to say, as an integral unit of a formation of consciousness. These three moments are the *minimal* representation of a concept. Let us explain this idea, using an example, presenting the idea in terms of objective relations.

In such an objective view, the Individual is some individual action or a thing, such as the Japanese Maple tree growing outside my window. It is a finite thing which will one day exist no more, but at the moment it is located at a specific latitude and longitude, as a concrete individual thing, it is more than my thought of it. The concept of Andy's Japanese Maple presupposes this Individual thing.

It is however *my* Japanese Maple, because of its location, property rights prevailing in Australia and a purchase I made a few years ago. It is a *Japanese Maple* because of the practice of domestication of trees, their culture and sale in nurseries and the taxonomic practices in botany and the use of the English language. Aside from all this, which you could say is the decisive proof of it being 'Andy's Japanese Maple', I could just point to it, or describe it to you and with these practices establish that it is indeed 'Andy's Japanese Maple'. All these that I have just described are the social practices whereby this Individual tree is made a Particular, that is, is identified as a tree in a specific location occupying a particular place in the property relations and in botanical taxonomy. They are objective to me personally, but they are normative practices which are meaningful only in a given social formation. This tree is a Particular tree, different from the Japanese Maple up the road in a particular way, even if it were identical in every respect. This particularity differs from individuality in that it belongs to on-going forms of social practice which outlive the tree and will outlive me, which bind it into a social fabric which stretches down through history. It is not so much the actual practices of pointing or writing, but the extent to which such social practices are *normative*. For example, you cannot make the tree your tree or make it a silver birch, simply by saying so. This action is true only insofar as it is normative, and is supported by the social system in which it exists.

But none of these relations are possible outside of the fact that a number of universal relations have been inherited from the past, which are moment by moment instantiated in words (or diagrams, maps, etc.) such as 'tree', 'Japanese Maple', 'property'. It is possible to particularise this individual tree only thanks to relevant concepts being fixed in words and other symbols. The Universal is instantiated again and again in the uttering of the word as individual sound bites or text in appropriate social contexts. Words have multiple meanings according to context and even within a single context the meaning or applicability of the word can be open to contest. Semantic norms are subject to the same processes of development as the practices and actions organised around them. But it is only the use of words and

gestures in contexts where they are constituted meaningfully by on-going social practices, that it is possible even to have the idea of 'Andy's Japanese Maple'. Otherwise I would look out the windows and maybe see patterns of green movement and no more. On the other hand, a future archaeologist can mentally recreate these universals provided only that they can mentally reconstruct the relevant social and material circumstances. But they cannot bring back this individual tree, and once sufficient time has passed the social practices which made this individual tree a particular tree will eventually pass away too.

So we see in the instance of this simple object concept, of the type considered as an archetypal example in the Psychology of Concepts considered above, that the concept can only exist through the coincidence of three moments: Individual, Particular and Universal. We saw that

- the Individual is each concrete individual thought, action or thing;
- the Particular is some normative social practice; and
- the Universal is a word or symbol which unifies it all under a concept.

If I have never heard of trees, if I am excluded from property rights in this country, if I have never been introduced to this type of domesticated tree, or if such property rights and botanical practices never existed, I could not form the concept of 'Andy's Japanese Maple tree'. More generally, something is what it is, so far as human activity is concerned, only by means of the identity of Individual, Universal and Particular. This differs from the formal approach chiefly in that the relation of the Individual to the Universal is *mediated* by the Particular, that is, the meaning of words is determined by social practice. But for Hegel the converse relations are equally valid.

My Japanese Maple tree is not my Japanese Maple tree because it resembles others of my trees or any such thing, or because of any contingent attributes of the vision from my window; it is what it is because of the specific identity of Particular, Universal and Individual described above.

It doesn't matter whether you have in mind a material object of which someone has a thought within some formation of consciousness, or you have in mind the thought of that object as constituted within that formation of consciousness. In either case, the same relations of

Individual, Universal and Particular apply: an *object thought of*, or the *thought of an object*.* This is not to say that the object and a thought of it are the same, but such a distinction is indicative of movement and contradiction within the formation of consciousness. Such contradictions are manifested in the *non-identity* of universal, particular and individual.

In fact, Individual, Particular and Universal never completely coincide. There is always a degree of dissonance between them. The meaning of a word is never quite the same from one context to another, what people do is never quite normative, people never quite manage to say what they mean or do what they say. So when we say that a concept is the *identity* of Particular, Individual and Universal, we recognise that such an identity *never* exists. So a concept is always to one extent or another imperfect and riven with contradictions.

Now I have said nothing of psychology here. I have just described what an abstract concept is. I have been able to do this without making any assumptions about a person's nervous system. I have just talked of *what must be thought of* for the concept of a simple object, such as Andy's Japanese Maple tree, to be thought. A simple object concept such as this entails a lot more than is suggested by placing a test object before an experimental subject in the laboratory. Any concept involves awareness of shape and colour and so on, but also the understanding of words and symbols through which a thing is meaningful and the social practices by means of which something can be known as this or that. But each of these moments is reflected in the psychic life of a person in a corresponding way. We not only know of social relations, such as the property relations which make the Japanese Maple mine, we actively participate in them. Social relations are manifested in our psyche through patterned reactions just as they exist for us via our participation in a network of individual, transitory interactions. Likewise the practical relations I have with that individual tree, and all the psychic activity that is evoked by the thought of words like "Japanese," "Maple," "tree" and "mine." None of these things can be actualised without the corresponding psychic activity of living human beings.

Hegel's understanding of the need to grasp an abstract concept in terms of these three moments marks his idea off from that of his

* Thoughts are realised in actions. In the appropriation of Hegel we will come to later, it is actions rather than thoughts which are the individual substances.

predecessors like Goethe and Herder, as well as that of recent cognitive science. Let us review why all three moments are necessary.

The Immediate Concept

At first the Concept is grasped as an Immediate Concept (relatively) without mediation: that is, as a Universal Concept, a Particular Concept or an Individual Concept, not yet mediated with one another. Hegel likens these to the moments of Identity, Difference and Ground with which Reflection begins, but in the domain of concepts. Of the Universal Concept, he says:

> [The] *pure relation* of the Concept to itself ... is the *universality* of the Concept. As *universality* is the utterly *simple* determination, it does not seem capable of any explanation; for an explanation must concern itself with definitions and distinctions and must apply predicates to its object, and to do this to what is simple, would alter rather than explain it. But the simplicity which constitutes the very nature of the universal is such that, through absolute negativity, it contains *within itself* difference and determinateness in the highest degree (1816/1969 §1326/7).

The *Universal Concept* is what is represented by a word (or in general, the sign for a concept) taken alone, outside of any determination or context of use. The meaning is entirely 'in itself', waiting to be developed, but at the same time is 'pure', in that every utterance is identical. Unreflective thought takes the Universal Concept to be the beginning and end of the concept, as if something can be said of it or it can be placed in this or that context, whilst remaining unchanged. But a word accrues meaning precisely by its use in a variety of contexts. Hegel likens the Universal Concept to Identity because it is taken to be self-identical. For example, if the Universal is 'unionism', then it is taken that every union and union member is equally subsumed under 'unionism'; if you've seen one then you've seen them all. This broad brush is precisely the weakness of the Universal Notion. Lacking any perception of difference, it is hardly likely that the concept has really been grasped. It is somewhat like knowing the definition of a concept while lacking any actual relevant experience.

Next is the *Particular Concept*, a *practice* which differentiates one kind of the Concept, one genus of the species from another through its inclusion and differentiation in a system of social practice. The Universal Concept can only come to reality through particularity, by *determining* the Universal. 'Unionism' is just a definition or general

idea, but the Building Workers Industrial Union, the Teachers' Union, etc., particular unions, each different from one another, but taken together, with their specific differences (militant unions, conservative unions, industrial unions, craft unions, etc.), all the particular exemplars exhibit everything that is implicit in the Universal. The Particular Concept therefore represents *some* whereas the Universal Concept represents *all* without qualification. Hegel says that the Particular is the determinate in the domain of Concepts, that is, the Concept as it exists in determinate beings having this or that distinguishing quality. This determination, which connects Universal Concepts to Individual Concepts, is possible only through social practices, whether that be pointing or including an individual within some social practice or by norms which qualify individual concepts for inclusion under the Universal Concept. While it is an error to represent the Concept by means of some finite collection of exemplars, the Universal can exist only in and through *some* exemplars.

Next is the *Individual Concept*, the individual in the domain of Concepts, which is the sole ground of the concept, in and through which alone the Concept can exist. The Individual Concept is the limit case of the Particular Concept, where it is not just *some* things, but *this* thing which is the Concept, the ground of all generalisation. On the other hand, the determination of a Concept as being this, and this, and this, ... individual, reduces the Concept to a common element linking the individuals. This is an extremely poor representation of a Concept, which, while determining the Concept, nevertheless fails to determine what the Concept is.

Each of these three Immediate Concepts are made absolute by certain theories of the concept. Plato for instance believed that Universals exist, although not in a spatio-temporal sense, nevertheless, independently of human activity and the symbols by means of which Universals are represented in activity. The intersubjective theory of Robert R. Williams sees concepts entirely constructed by intersubjective actions, leaving no place for symbols or artefacts of any kind, whilst Franz Brentano allowed that only individual things exist. Although none of the Immediate Concepts have stability or can stand up to scrutiny, each is involved in the process of a concept and the immediate concept will always take one or the other of these forms, according to conditions, until forms of mediation develop. We see this when one theory of concepts is abandoned in favour of another, without attempting to interconnect the different theories in a mediating process.

What Hegel does from here is to consider all the different combinations and arrangements of Individual, Particular and Universal in the form of logical judgments and syllogisms. Such logical figures represent the concept in the domain of Logic, demonstrating in the form of inference, how concepts change. But just as each of the immediate concepts described above prove to be limited, so do all the various logical arguments (he deals with 22 combinations) which incompletely or one-sidedly express all the possible mediations between the three moments of the Concept.

The next step in this development is the Judgments, where each of the three immediate concepts is connected to another. The Judgments reproduce at a higher level the categories of Being and Essence, and are the Qualitative Judgment, the Judgment of Reflection, the Judgment of Necessity and the Judgment of Notion. Each of the Judgments expresses only partially what it is that brings something under the Concept, each Judgment is a successively more concrete characterisation of the Concept as it becomes clear. This process of judgments is the registering in self-consciousness of the process unfolding in the Objective Logic and therefore recapitulates the categories of Essence in the form of more and more adequate notions, but at this stage, still concepts which are one-sided and deficient.

(a) In the *Qualitative Judgment*, the subject is ascribed a *single quality*, being said to be good or bad, or novel or whatever or some combination of qualities.

(b) In the *Judgment of Reflection*, the subject is given in connection with other things, so that it is not just seen as having some quality, but as *having a place in some system of social practice*, connected with other practices, of being useful for something, or whatever.

(c) In the *Judgment of Necessity* is the subject taken under its genus, rather than just as sharing with others a *contingent property* but belonging to some living whole.

(d) In the *Judgment of the Notion*, these three judgments are brought together.

Hegel illustrated one of these judgments, the Apodeictic Judgment, as follows: “This house, being so and so constituted, is good or bad (1830/2009 §179).” But there may be *other* aspects of the house such that it is *not* good or bad; we had missed the concept of what made a house good or bad, and mistakenly focused on just one factor. And so on, showing that only when every possible relation between Universal, Particular and Individual is taken fully into account and the relation

dealt with all-sidedly, can the Concept be captured. The various fallacious lines of reasoning are the kind of reasoning which one hears – reasoning from one example to a whole class, rejecting an exceptional case on the basis of a rule which rather should be seen as disproven by the case, reasoning from one example to another on the basis of a partial similarity, and so on. It may seem strange to put such faulty figures of logic into a book on logic. A book of logic which concerns itself only with Formal Logic as implemented in Set Theory has no need, since it is concerned with only a narrow class of formally valid lines of deduction. But in real-world reasoning objects do not fall into neatly delimited sets according to well-defined attributes. In the real world, even perfectly well educated, intelligent people *must* use fallacious logical figures like these, reasoning from a single case to a whole class, or from one attribute to a whole judgment, and so on. So long as we do not have clear concepts of everything, we may not be certain of what attribute is essential and which inessential and so on. Ideas do change and develop through processes of clarification and discovery by way of inferences which are from the standpoint of formal logic, obvious errors and turn out to be faulty in real life. But it is in the process of such faulty lines of reasoning being exposed that the true concept is established. One would have to have seen an Australian black swan to realise that whiteness is not an essential attribute of swans.

This is how Hegel uses *immanent critique* to develop the internal structure of the Concept. It models how, for example, a new law is concretised by being tested out in the courts in deciding difficult cases. Gregory Murphy (2004) showed that every law falls into contradiction with itself, exposes blurred edges, ambiguities and so on, requiring endless modification in the courts or legislature. This is how the Logic operates in a formation of consciousness, through rational argument in the course of social conflict. Every time logical fallacies are brought to light, the result is not just to negate the conclusion. Rather, attention is thrown back on the Concept itself, which must be made more precise, separating what is essential from what is inessential, and so on, so that reasoning based on the concept does not prove to be erroneous and its results may be relied upon and have force. Hegel shows that the world is not made up of pigeon holes by positing pigeon hole reasoning and demonstrating how the endless internal development of concepts arises from the limitation of each partial and imperfect concept.

Objectification

I have considered the internal development of the Concept; now I turn briefly to the *external* development of the Concept, that is, the development of the subject/object relation. The object here is always another subject, but rather than taking this as an Other (in the sense this term is generally used these days), I will assume here that the object is the existing community, 'the establishment', so to speak. So what we are looking at is how a new concept (or social movement, or cultural group, etc.) enters into an existing modern society, changing itself and changing the community it enters. I visualise this community as 'multicultural' in the sense that it has the capacity to appropriate a new concept. The interaction between a new cultural group and mainstream society is also an issue of intense concern in social and political philosophy today. We should keep this situation in mind as representing the subject/object process. For Hegel, a concept is a unit of a formation of consciousness, and ultimately the whole formation is itself the most concrete of concepts. All the terms of a science for example, represent the various concepts and relations recognised within that science, but they are subordinate concepts which arise out of the development of the science itself. The science develops as a concrete concept in which the various terms are subordinate moments. This is what is meant by a concrete concept. Concretisation takes place through the interaction, merging and mutual transformation of the subject and the object, that is to say with new concepts interacting with all the concepts already 'institutionalised' within the social formation. This is how a social formation grows and matures and becomes more all-sided and rich, whilst constantly renewing its own unity, to the extent that it successfully completes the process.

I have only skimmed the surface of Hegel's treatment of the Concept in Volume Two of the Logic. I fear it would try the patience of the reader if I were to go any further.

Hegel's Critique of the Individual/Society Dichotomy

Hegel does not take 'concept' to mean a 'thought-form', something inside the head. Rather Hegel takes 'concept' to refer to a system of collaboration organised around some ideal or artefact. This *includes* as one of its moments, the thoughts and actions of individuals involved in such forms of activity. Because actions are mindful, what is going on in people's heads is part of that collaborative activity, part of the

concept. The personal meaning of the words and actions is distinct from their meaning to anyone else, but personal meaning is not something radically inaccessible. Personal meaning exists only in its connection with the realisation of concepts in the life of an individual person.

In such an approach Hegel has resolved two troublesome dichotomies. Firstly, he has resolved the 'inside/outside' dichotomy, that is to say, the conundrum of what is inside the head and inaccessible to observation, and what is outside the head and observable. By making the unit of analysis a concept, which includes both the mental and material aspects of activity, that dichotomy is avoided from the outset. Secondly, he has resolved the 'individual/society' dichotomy, that is, the formation of two different domains of science, one devoted to the actions of individuals within their immediate environment, and the other devoted to the activity of states, social movements and so on, independently of individual psychology and behaviour. For Hegel, language and other artefacts which are societal entities and the bearers of a culture, figure in the same unit of analysis by means of which individual thinking and activity are understood. Institutions are grasped in the same terms as the actions of the individuals who participate in them. There is no individual/societal dichotomy for Hegel.

This means that the basic unit of a social formation is not an individual but a concept, whilst a concept is not taken to be some kind of ethereal abstractum, but rather a form of collaboration between individual people. A real society is therefore understood as an ensemble of *Gestalten* each to be grasped in terms of a concrete concept. Individuals are likewise to be understood in and through their participation in forms of activity and therefore lived experience grasped in terms of concrete concepts, which are fundamentally *shared* and not exclusively private.

These observations do not obviate the need for a psychology and for a scientific study of psychology with its own methods of experiment and observation. Not at all. But they do surely clarify the problems which have to be resolved by the psychology of concepts.

Chapter 10. Hegel's Psychology

The Subjective Spirit

Hegel's psychology is presented in the *Subjective Spirit*, within the *Encyclopaedia of the Philosophical Sciences.* Although an English translation of the *Subjective Spirit* was published in 1894 as part of the whole *Philosophy of Spirit* (i.e., including *Objective Spirit*, later the *Philosophy of Right*), this edition did not include the *Zusätze*, the important notes with explanation and examples, added by Hegel's students, drawing upon his lecture notes. The *Zusätze* are crucial to understanding the bare and abstract text, and had been included in the 1873 translation of the *Shorter Logic* and the 1896 translation of the *Philosophy of Right*, ensuring the wide distribution and relative popularity of these works in the English speaking world. However, it was only in 1971 that the William Wallace translation of the *Philosophy of Spirit* was republished with Ludwig Bouman's *Zusätze*, thus making Hegel's psychology accessible to an English speaking readership for the first time.

Instead, Hegel's views on psychology have been taken to be what is presented in §§178-196 of *The Phenomenology of Spirit* (1807) – the famous "master-servant" narrative. The *Phenomenology* was Hegel's first published book. Only 250 copies were printed, and despite the celebrity Hegel achieved, it was never revised or reprinted during his lifetime. He used to give away copies as gifts to his friends. The *Phenomenology* has an important place in Hegel's *oeuvres*, but it suffers from two defects. Firstly, it is an immature work, almost unreadable, written in haste to meet the publisher's deadlines, at a time when Hegel's ideas were only just coalescing. Secondly, it is not a positive presentation of Hegel's views, but rather an immanent critique of foregoing ideas still tied up with problems of ontology and epistemology. Sections §§178-196 concern the master-servant dialectic which appears in every exposition of Hegel's system, in one form or another from 1802 until 1830, though by 1830 it is much attenuated. In the *Phenomenology*, Hegel gave it the form of a foundation myth because it is a parody of state-of-nature narratives. It concerns the attainment of self-consciousness on the part of a subject, individual or collective, which lacks any form of mediation to interact with another subject. In 1937, Alexander Kojève used this section as the basis for a representation of the relations between colonial powers and the peoples they dominated. This reading became very popular in

France after World War Two. After the Algerian War and the failure of the 1968 rebellions in France, its popularity spread throughout the world. Nowadays it would seem that Hegel had written only these 19 paragraphs in his entire life.

Such is the prominence of the *Phenomenology*, that even with the publication of the *Philosophy of Mind* in 1971, only two book length treatments of the *Subjective Spirit* have been published in 40 years: Willem DeVries' *Hegel's Theory of Mental Activity: An Introduction to Theoretical Spirit*, in 1988, and Richard Dien Winfield's *Hegel and Mind. Rethinking Philosophical Psychology*, in 2010. Winfield's otherwise very useful book is written within the framework of "Philosophy of Mind," accepting that mind is inside the body, if not the brain cavity, of an individual person. DeVries' book, on the other hand, is in my opinion a brilliant presentation of Hegel's idea for the present-day reader.

We can only hope that people will tire of the master-servant narrative at some point, and the profound and complex structure of the *Subjective Spirit* will capture the attention it deserves. It may surprise readers to see that Hegel presents a view of mind which gives to thinking a plausible material basis while also making it possible for us to reconcile the *experience* of awareness with its material foundation. Hegel was writing at a time when biology was in its infancy and microscopes were still not powerful enough to reveal any of the microstructure of the body, let alone the nervous system. From the point of view of a natural scientific analysis of thinking, Hegel had nothing to go on, so his psychology is based solely on speculative reasoning, his experience as a teacher and philosopher, and the very limited scientific knowledge of the time. Nonetheless, the complex structure he suggests for the mind is plausible and challenging, and gives modern science cause to take it seriously.

One of the features of Hegel's approach is that he does not take the individual mind to be a homogeneous process, but a *three-layered process*. First there is what Hegel calls *die Seele* or Soul, but I will follow Winfield in using 'the Psyche' instead. The Psyche is something entirely natural, found in all animate creatures. The Psyche encompasses the entire organism of an animal, registering the neurophysiological totality of the organism as its own being. Its determinations are *feelings*, but the Psyche does not register these feelings as intuitions *of* an object nor take itself as a subject. Its mental life lacks both subject and object – it just *feels* such-and-such. The Psyche encompasses both the outward behaviour and the inward

feelings of the organism, mediating between the two. It is an integral function of the organism. The Psyche develops by means of *habits* and *habituation* so that the organism comes to distance itself from the immediacy of its own body and thus to the distinction between itself and objects which belong to an external world from which it has extricated itself.

This is Consciousness, *das Bewußtsein*. What distinguishes Consciousness is that it takes the objects with which it interacts to be objects with an independent unity of their own. While Consciousness directs the body in its activity in relation to given objects, the Psyche all the while continues its work of regulating the movement and functioning of the body, now responding additionally to the activity of Consciousness. Indeed, Consciousness can only sense objects thanks to the feelings of the Psyche. But Consciousness is not at first *self*-consciousness. In the earliest stages of Consciousness, even though Consciousness takes the object to have an independent unity, it is not self-aware. It comes to know its own subjectivity mediately through interactions with other, objectively existing self-consciousnesses. Once it comes to see its subjectivity as something objective and objectivity as something which can be subjective, then it has reached the threshold of *der Geist*, what Hegel actually calls Psychology. Winfield uses the term 'Intelligence' here and I will use the terms Intelligence or *the Intellect*. The crucial stage in the development of the Intellect is *language*, but there is pre-linguistic Intelligence, which knows its object to be a meaningful thought determination, but has not yet acquired universal self-consciousness. Intelligence is universal self-consciousness, an entire world vested with meaning.

Whereas the Psyche knows nothing of subject and object, and Consciousness takes its object to be objective, the Intellect understands its objects to be both subjective and objective, to be both meanings and objects which exist in the world independently of its own activity. With Intelligence we have not only self-conscious activity, but *thinking* activity. Intelligence becomes *actual* when its will becomes objective, in the rule of law and private property. Each individual mind is a concrete whole, but differentiated according to the categorically different relations to the world characterising Psyche, Consciousness and Intelligence.

Let us reflect on the relationship between these three levels of the subjective spirit.

Firstly, on its own, the Psyche constitutes the mental life of a viable and self-contained organism. Consciousness rests on the Psyche but

subsumes it as its own substance, also constituting a viable and self-contained organism in its own right. Whereas the Psyche does not ascribe its intuitions to anything, but merely feels, these same intuitions may be taken by consciousness to refer to an object outside of and independent of the subject. The Intelligence may ascribe subjective significance to the objects of its perception. While the Psyche communes with itself, Consciousness rests on the Psyche, and the Intelligence rests on Consciousness.

Secondly, these three processes are not 'modular' in the sense of acting externally to one another, executing distinct functions, and interacting causally. Rather they *include* one another, each being but a special function of the other. But each is a distinct whole, or *Gestalt*. The Psyche is entirely self-contained and in communion with itself. Consciousness takes its determinations, whether feelings or perceptions of objects in the external world, to be equally objective determinations of consciousness, and in that sense also, Consciousness always refers to itself, absorbed in an objective world. Intelligence moves within a world of universal consciousness, in which language comes to play the central role.

> Given the name lion, we need neither the actual vision of the animal, nor its image even: the name alone, if we *understand* it, is the unimaged simple representation. We *think* in names (1830/1971 §462).

Thirdly, each sphere of mental life begins from something which arises in the lower sphere, from which in turn, it takes the basic unit of its own sphere. In the Psyche, responses to stimuli are merely feelings, but thanks to the development of habituation and habit, certain feelings stand out in relief, as it were, as that to which the organism is not habituated and these intuitions are taken to be *sensations* of something *else*, and sensations become the basic units of consciousness. Intelligence takes what is in sensation as not merely objective but meaningful, and conversely makes its own activity into something objective.

Subject and Object

Hegel calls this section of the *Encyclopaedia*, "Subjective Spirit," and it is very easy to read the entire work as concerning only nervous activity going on inside the body, albeit responding to objects outside of the mental sphere, whether inside or outside of the body. Hegel was an idealist and so any of his writings can be read in this way. After all, he took a "social formation" to be a "formation of consciousness." but

to take the *Subjective Spirit* to be about mental activity whilst the *Objective Spirit* is about social practice, would be a mistake. As Hegel explains:

> We called the first form of mind we have to consider *subjective* mind, because here mind is still in its undeveloped Concept, has not yet made its Concept an object for itself. But in this its subjectivity mind is at the same time objective, has an immediate reality by overcoming which it first becomes for itself, attains a grasp of its Concept, of its subjectivity. We could just as well say that mind is, to begin with, objective and has to become subjective, as conversely that it is first subjective and has to make itself objective. Consequently, we must not regard the difference between subjective and objective as fixed. Even at the beginning, we have to grasp mind not as mere Concept, as something merely subjective, but as Idea, as a *unity of subjectivity and objectivity*, and any progress from this beginning is a movement away from and beyond the first, simple subjectivity of mind, a progress in the development of its reality or objectivity. This development brings forth *a succession of shapes* [*Gestalten*]; these, it is true, must be specified empirically, but in the philosophical treatment cannot remain externally juxtaposed, but must be known as *the corresponding expression of a necessary series of specific Concepts*, and they are of interest to philosophy only in so far as they express such a series of Concepts. However, at first, we can only assert what the different forms of subjective mind are; their necessity will emerge only from the specific development of subjective mind (1830/1971 §387n).

Thus the objective sphere implicit in the development of subjective mind described is "a succession of shapes [*Gestalten*], ... the corresponding expression of a necessary series of specific Concepts." In the Subjective Spirit, Hegel can show the necessity of these *Gestalten* by tracing the development of the subjective side of the relation. Once Mind has become actual in the form of private property and the state, the development must be traced by showing the necessity of the *Gestalten* constituting Objective Spirit in their own right.

Each of the forms of life described in the Subjective Spirit is *an individual taken together with its environment*, engaged in a symbiotic, metabolic relationship. In the beginning, where we are dealing with

only the simplest kind of organism, all that is implied is that the environment provides suitable, natural conditions for the individual organism to thrive. But once we reach the stage of intellectual life where the organism regards its determinations as both subjective and objective, then this attitude of the organism to objects is founded on the fact that its environment is on the whole a product of its *own activity* and that of others of its species. The tools and other artefacts which the Intellect uses are products of the Intellect, but at the same time, they are material things, objective in relation to the individual subject.

It is only possible to attain the level of development of Mind constituted by Intelligence in a situation in which words, tools and other artefacts are already an integral part of the life of the community. So, *Subjective Spirit* describes the necessary structure and development of forms of life entailing relations between subject and object as described in each case.

Objective Spirit, which is Hegel's theory of social life and world history, bears this name because its development is marked by forms of Mind which are actualised and made objective, not merely as artefacts, but in the form of institutions. With the right to private property, comes normative principles of right and wrong, a moral code, family property and inheritance, civil society, division of labour, government, a political constitution and the state. Mind is no longer simply something interior, but marches through the world beyond the horizon of activity of the individual, and presenting itself to the individual as "objective spirit." Prior to *Objective Spirit*, the organism can only develop within limits imposed by the nature of the organism itself. As Hegel put it:

> This world confronting the soul is not something external to it. On the contrary, the totality of relations in which the individual human soul finds itself, constitutes its actual livingness and subjectivity and accordingly has grown together with it just as firmly as ... the leaves grow with the tree (1830/1971 §402n).

The Psyche

Hegel tackles the emergence of mind from Nature as follows. In the simplest organic creature, mind is nothing other than a natural, material process, manifesting the original oneness of mind and matter. But in the development of the Psyche, mind "spontaneously raises itself from a merely implicit being to an explicit existence." Hegel's

point here being that it is Mind which distinguishes itself from Nature, as its truth, rather than that mind is *produced* by Nature. The natural process of the self-regulation of an individual organism, the first step towards self-determination, Hegel calls the "Physical Soul," and he takes this to be as the simplest formation of mind – as much a part of Nature as of Spirit.

There is nothing here of mind *acting upon* a material body. Mind and body are one and the same process at this point. Mind cannot be said to be a cause in relation to the organism and its behaviour, since the relation of cause and effect presupposes that the cause is *external* to the effect, which is not the case here. Mind exists only as the activity of an animal organism, inseparably from animal physiology. What constitutes Mind is the process of mediation between the physiology of the animal and its behaviour. Nonetheless, "the separation of the material and immaterial can be explained only on the basis of the original unity of both" (1830/1971 §389n). On the other hand, "the opposition between itself and its Other, so does its Other appear to it as a reality, as external to mind and to itself, as something material" (1830/1971 §389n). Thus the opposition between mind and matter begins at this same point of origin: that which is outside the unity of the self-regulating organism is matter.

Nonetheless, "the soul is still in immediate, undifferentiated unity with its objectivity" (1830/1971 §402n) and in fact the soul has no reference to another, no subject/object distinction in its make-up. It functions so as to regulate the finite organism, but it does so naturally, without distinguishing itself from its environment. It just *feels*. The mental life of the Psyche is the registration of the neurophysiological system as a single whole. This amounts to the mediation between sentience and behaviour, and its feeling is the totality of these processes of mediation. The Psyche is *not* confined to the central nervous system, but embraces the entire organism.

The first step towards independence of the Psyche from immediate concern with its feelings is Habit. The acquisition of Habits applies to all grades of mental action. The sense in which Hegel uses the word roughly corresponds to the meaning of 'operations' in Activity Theory –actions which by repetition become automatic, freeing the mind from having to pay attention to the execution of simple actions. Thanks to Habit, we can "chew gum and walk at the same time." Habit can be refined so as to be regarded as an aptitude or skill, being able to do something without thinking.

Habit is further developed by Habituation: One who gets inured against external sensations and who hardens the heart against misfortune or becomes indifferent to the satisfaction of its desires, acquires a strength which consists in a growing *independence* from its conditions of life, acquiring a *distance* from the immediacy of its feelings. This indifference pervades a greater and greater portion of increasingly complex activity. It is only the unusual and exceptional which attracts attention, while the normal course of life proceeds more or less automatically by Habit and Habituation. It is not clear whether Hegel understands Habit to be acquired ontogenetically or whether he is demonstrating the *logical* necessity of Habit. Hegel did not accept the theory of the evolution of species, so although the idea of Habit evoked here rings true as a theory of action, it is not coherent as a theory of the origin of species.

In this way, the organism becomes inured to feelings encountered in the normal course of life, with only those coming from 'outside' gaining attention. These feelings take on the significance of a signal of something uncontrolled, something coming from the material world outside the Psyche. This feeling becomes *Sensation* and constitutes the basic unit of consciousness.

Consciousness

Consciousness is the psychic structure whose smallest unit is a sensation. "*Everything is in sensation* (feeling): if you will, everything that emerges in conscious intelligence and in reason has its source and origin in sensation" (1830/1971 §400). But whereas the Psyche relates only to its own mental content without drawing any subject/object distinction, Consciousness takes its content as something exclusively objective, with its own independent unity. Consciousness is thus 'reflected' being, and rests upon and unfolds from this opposition to its object. Consciousness acts upon its own embodied self while engaged with the objectivity which it distinguishes from its own awareness.

But this does not as such amount to Self-consciousness, because Consciousness cannot stand outside itself and sensuously observe itself as an object. Its sensations come via the depths of the Psyche or from an outer world, but either way, it is something other. Consciousness treats the content of its sensations initially as something immediate and singular, manifested as a stream of qualities. This is the material out of which Consciousness *of*

something is made, and its development is given in detail in the section of the *Logic* dealing with Being.

From this stream of qualities arises the sensuous perception of things and in general, awareness of the existence of a variety of things which have a unity and a continuity of their own. The highest point attained by the sense perception of Consciousness is the realisation that its objects are an *Appearance* (whose development is given in detail in the first part of section of the *Logic* on Reflection). The representational theory of mind makes some sense within the domain of Consciousness. This is what the activity of Consciousness consists in: the working up of sensations into representations of independently existing objects.

It is the discovery that something looks different according to one's point of view (for example, something looks bigger when viewed from closer up) which opens the way for self-consciousness. But in the beginning, Consciousness is not Self-consciousness. Small children and animals may for example recognise objects and other creatures as having a unity, independence and dynamic of their own, without being aware of their awareness of that objectivity.

There are many grades of Self-consciousness, each corresponding to a wider perception of the subject's own position, corresponding to successively deeper understandings of the world itself. In this primitive stage of development of Self-consciousness, the subject's position is defined by the objects of their *desire*.

Desire is the crucial relation. When consciousness is not only aware of an object, independent of itself, but desires it and wants to consume it, then the decisive step of ascribing *subjective meaning* to the object has been taken, and the most elementary form of self-consciousness attained. With desire, the organism is not only aware of the object as independent of it, but acts to annul that independence, rendering it a means of satisfying its own desires. Thus the subject apprehends its own subjectivity – its needs – in the form of an object, but cancels its objectivity by consuming it.

Self-consciousness develops through three grades: Appetitive Desire, Self-consciousness Recognitive and Universal Self-consciousness. Appetitive Desire is the first and most elementary form of self-consciousness in which a subject sees an image of themselves in the objects of their desire. The problem that the subject finds with appetitive desire is that the destruction of the object of desire (or simply their acquisition) means that the subject has to begin all over

again. The desire is continuously regenerated and satisfaction eludes the subject. However, if a subject can subordinate *another subject* so as to have that other labour to satisfy their needs then its desire may be satisfied in an enduring way.

Appetitive Desire is transcended by Self-consciousness Recognitive, in which a person sees themself reflected in the eyes of another subject. Thus, the subject's self-consciousness is based on consciousness of their social status, how they are seen through the eyes of other people. So the subject sees its own needs and their satisfaction manifested in the activity of another subject subordinated to it, as something objective and belonging to perception. This produces a more enduring and secure satisfaction of needs.

But this also proves to be a defective means of the enduring satisfaction of the subject's needs, and a poor reflection of the subject's consciousness, since it reflects only the subject's desire in the form of a *subordinate* consciousness which lacks self-consciousness, since it cannot recognise itself in the objects of its labour or by recognition of the subject itself. The subordinated consciousness acts to meet the needs of the dominant subject, but at the expense of satisfying its own desire. What the dominant subject requires is recognition by their peers (or betters), something which they cannot gain by exploitation of those below them in social status.

Mutual recognition thus becomes a shared need. Reciprocated recognition is achieved through the emancipation of the subordinate consciousness. The subject's needs are then satisfied in the most secure and objective way possible, by the action of another free subject. It is this objectivity of subjectivity, or *universal self-consciousness*, which lays the basis for the next stage of development of Subjective Spirit, Intelligence.

Hegel remarks, after presenting an attenuated version of the 'master-servant' dialectic:

> To prevent any possible misunderstandings with regard to the standpoint just outlined, we must here remark that the fight for recognition pushed to the extreme here indicated can only occur in the natural state, where men exist only as single, separate individuals; but it is absent in civil society and the State because here the recognition for which the combatants fight already exists. For although the State may originate in violence, it does not rest on it (1830/1971 §432n).

Hegel was not in a position to know that at *no* point in history had human beings existed as "single, separate individuals," having evolved from the animal kingdom as social animals. It *does* apply in the extreme form to relations between cultural groups, between nations for example, or new social movements. The conditions for the emergence of a master-servant dialectic are (1) there is no means of mediation of interactions between subjects, and (2) one subject can meet the desire of the other but has no means of exacting recognition.

It should be noted however that recognitive self-consciousness is attained without any call for language or signs, in fact without any call for intelligence, that is, thinking as such. The relationships between subjects involved in recognitive self-consciousness hinge around subjectivity splitting in two with the activity of one satisfying the desire of the other, rather than the subject satisfying its needs immediately through its own actions.

Nothing up to this point entails language or conceptual thinking. The kind of knowledge which the subject has up to this point is a 'knowing how' or skill. This knowing-how underpins intelligence.

Intelligence or "Free Mind"

The final phase of the *Subjective Logic* is called alternately "Free Mind," "Psychology," or "Spirit" (*Geist*) or following Winfield, "Intelligence."

> The principle of free mind is to make the merely given element in consciousness into something mental, and conversely to make what is mental into an objectivity (1830/1971 §440n).

The first thing to grasp about Hegel's concept of Intelligence is that although this grade of mind is the grade in which language develops, there is *pre-linguistic Intelligence*. Indeed, people have to make do with an Intelligence which is able to create tools, signs and symbols which become part of a universal culture *before* they can invent the enormously complex apparatus of a spoken language. We now know that evolutionary time would have been required for hominids to acquire the vocal apparatus presupposed by language before a culture of spoken language could be created and understood. Doubtless, during that time, human intelligence developed without the benefit of language ... but Hegel knew nothing of that, relying solely on speculative reasoning to develop his theory of the mind.

Hegel sees three stages in the development of intelligence: Intelligent perception, Representation and Thought.

In *Intelligent Perception*, the object is taken as a separate entity, and in this grade, it is objectivity which predominates. But at the same time, it is also *my* perception – I give it my attention, single it out and detach it from its surroundings. Intelligent perception is distinguished from Consciousness by the fact that Intelligent perception does not take the object as so many attributes, but as a *totality*, a unified whole. It is this capacity to form intuitions into wholes, recognised as having a unity of their own, which creates the conditions for the further development of Intelligence.

In *Representation*, the second grade of the Intellect, the subject not only perceives the object, but creates a representation of the object which persists even when the object is no longer in the field of perception. The development of Representation hinges around the development of forms of what Hegel calls recollection, imagination and memory, through which the means of forming concepts are created. For Hegel, Representation includes both the mental process of memorising, and the practical creation of artefacts. In general, Hegel uses all these terms quite idiosyncratically, and at the time, the words did not exist for the concepts he was producing.

In *Recollection*, the first stage of Representation, there is an involuntary calling up of content which is already ours, the same content as is in intuition. In this way the intuition receives its confirmation in my representation and my representation is verified by intuition. Thus the content is not only intuitively perceived, but is posited as mine in the form of an image. The second stage of Representation is Imagination, in which *what is universal* in the image is brought out by *thinking* and the active creation of the object. The unity of subject and object then is not immediate, but is rather a *restored* unity, in which "the intuitively perceived external content is subjugated to the mentally represented content which has been raised to universality" (1830/1971 §451n). Thus the mentally represented content is made a *sign* of the object and thereby represented as an *ideal*. The third stage of Representation Hegel calls Memory, in which the sign is taken to be the object, not something inward but rather an ideal which exists as object, and "in this way a unity of subjectivity and objectivity is produced which forms the transition to thought as such" (1830/1971 §451n).

Since this section is so crucial to our subject matter, it is worthwhile sketching in a little more detail how Hegel analyses these two

processes of Imagination and Memory, which bring us to conceptual thought as such.

Imagination is based on the capacity to recall images *voluntarily*. Associative Imagination then recalls images in response to other images – something which happened in the same place, or the same person is involved, or something evoking a similar emotion, etc. – thus voluntarily connecting up images in a myriad of ways depending on personal experience, and constructing an elaborate network of associations around the reproduced images. The association of images is not, according to Hegel, based on similarity, but on all kinds of practical associations. In this way the image is raised to a general idea or representation of a host of associated events or circumstances. The third stage of Imagination, then, is Creative Imagination, which entails the positing of a general idea by singling out a particular aspect of an image which acts as a pictorial sign or symbol for the network of associated ideas, and lays the basis for transition to Memory.

Hegel sees this phase of Creative Imagination as the phase in the development of mind where all kinds of general ideas are formed around images which play the role of pictorial symbols. Imagination, in transition to Memory, transforms these symbols into (non-pictorial) signs of various kinds, including the creation of monuments, works of art and poetry.

The functions of Memory, then, include the creation of signs in the material life of the community, including spoken language. Words signify forms of practical activity, the genus of something, abstractions like number, and the greatest variety of ideas which creative intelligence can form.

Hegel sees memory as developing from Retentive Memory, through Reproductive Memory to Mechanical Memory. The material with which Retentive Memory has to work is the signs produced by Creative Imagination, and words in particular, making a synthesis of the word as an intuition itself together with the connotations of the sign or word, welding them into a universal.

Reproductive Memory involves the reproduction not of the images associated with the word, but the words themselves. We think in words, as the signs for concepts, and the material existence of the words is essential for our thoughts, but is not the content of our thought. The final stage of Memory Hegel calls "Mechanical Memory." Mechanical Memory involves severing the roots of the meaning of words in intuitive images, so that "the distinction between

meaning and word is abolished" (1830/1971 §463). Thus is created a universe of words which "does not need to go outside of itself for existence" (1830/1971 §464). This universe of words which refer only to other words is the world in which Thinking operates.

A number of points need to be made about thinking. Firstly, all thoughts are generalisations. The relation of thinking to lived experience and perception is mediated by the psyche and consciousness, in which forms of representation of individual entities may be said to be formed. But in thinking we think only universals; universals come to the individual through particularisation. So the ancient problem of how it is possible to think universals is misplaced. We think in universals, so the challenge is rather how we come to think of individuals.

Secondly, although it is signs which are the bearers of the universal in our thinking – "We think *in* words," he says – and whenever we think, the thought is embodied in a sign or symbol, nonetheless, the thought is not the sign or symbol, but rather it is at work *through* the sign or symbol. Thinking expresses itself in the *use* of a sign, and can only be discussed in terms of those signs. So this means that in thinking and talking we do not call upon sensuous images of the things we are thinking about. The things we represent exist for us in the names themselves. We have no need to call up the images we have of things, and indeed, it would be impossible to think or talk if we had to continuously call up the images of things. The signs themselves, the representations before the mind, are inconsequential. What really counts is what we do with the symbols. The activity actually operating on the symbols – for which the symbols are but "pieces in a game" – is thinking. An experienced chess player can play on paper or with pieces, but *some* familiar representation of the concepts is required.

Thirdly, although we think in universals and thinking has no way of directly representing an individual entity, Consciousness does make representations of the sensory field and these representations are constantly at work 'underneath' our thought, so to speak.

With Thinking, this phase of development of mind is complete. But Intelligence is the unity of Theory and Practice, so to outline the final phases of Subjective Spirit, I will indicate the development of Will and the relation of Will and Intelligence.

Practical and Theoretical Spirit

It is only with the development of thought that it is possible to speak of free will. Hegel says:

> Intelligence ... recognizes its inwardness as objectivity. Conversely, will at the start of its self-objectification is still burdened with the form of subjectivity. But here, in the sphere of subjective mind, we have only to pursue this externalization to the point where volitional intelligence becomes objective mind, that is, to the point where the product of will ceases to be merely enjoyment and starts to become deed and action (1830/1971 §469).

That is, up to this stage in the development of subjective mind, the activity of the organism is directed solely at the satisfaction of immediate needs. But with an intelligent will, people collectively create ideals in the form of institutions and means of production which alter the whole dynamic of development. But the free will is still burdened with the form of individuality.

Free will is in the first place immediate, still subject to affections which act upon the mind. In the first place, these are what the individual finds agreeable or disagreeable. In the second place, the will is subject to more complex feelings such as hope, anguish, fear, etc., derived from intuition or representation. But thirdly, these feelings are joined by those derived from notions of right, ethics, morality, religion, and so on which originate in thought. The net result of these affections is Practical Feeling.

The Will then finds itself driven in a number of possibly conflicting directions, which is resolved by making a Choice to act on this or that feeling, possibly at the expense of other feelings and the Impulse to act.

But the act must be judged according to the universal inasmuch as the choice made has to be assessed in the light of the totality of outcomes, overall. Hegel says, "it is the subjective feeling and good pleasure which must have the casting vote as to where happiness is to be placed" (1830/1971 §479). In this way people may choose to do what is not agreeable and act not in accord with any feeling they have as an individual, being determined intelligently and freely.

With the unity of Theoretical and Practical Mind, we have completed the achievement of Free Mind, or Mind which is *actual*. Further development is determined by the logic of Objective Spirit, that is, of the free will of many individuals in a community in which people have rights.

The Individual Self

In Hegel's view, the self is a Concept, a Concept of itself. The genesis of the Self culminates in the emergence of universal self-consciousness associated with the use of concepts by Intelligent individuals. The Self as a concrete concept is the same form of activity as the concrete universal concepts which, as I have already said, constitute the units of a formation of consciousness. A concept is therefore not something which we perceive but the activity which we are. Objective concepts are not so much perceived or understood, but *realised* by the Self. The Self is Pure Activity. Our internal system of signs is governed by the *same* rule system as the world around us. Our thinking is an instantiation of this system. Our ability to think true thoughts about the world is based on the fact that we instantiate the same rule system that governs the world. Concrete universal concepts are part of a system of self-realising concepts, of which each one of us is a part.

Like Freud in his day, and the cognitivists in ours, Hegel has given us a speculative structure of the individual human mind which we should have no reason to believe is replicated in neurophysiology. But Hegel's structure offers a fresh insight into the relation between the emotions and cognitive functions, and an ingenious resolution of the problem of the relation between physiological nature and conscious awareness, sensation and thinking. Of particular importance for the psychology of concepts is Hegel's claim that thought as such is independent of the sensory images in consciousness: *we think in words*. Hegel's tripartite structure of Psyche, Consciousness and Intelligence offers a rich field for investigation of concept formation.

Conclusion

By the time he died in 1831, Hegel had resolved all the methodological problems in the science of concepts. He had developed a system of concepts which spanned the objective and subjective realms and a critical logic which allowed us to think in terms of processes rather than tick-boxes. Hegel was one of the last great encyclopaedic thinkers whose system of philosophy spanned all the sciences of the time, integrating them into a single whole. But this magnificent achievement became untenable as the special sciences began to mobilise the efforts of countless researchers, generating discoveries and problems which massively overstretched efforts to integrate the sciences into a single, logically coherent system.

This created a real problem, a problem which could not be solved by philosophy alone. The further development of science necessitated departure from the holistic conceptions of the philosophers in order to pursue the special problems arising in every aspect of human life. How could positive, experimental science be pursued without abandoning the gains of encyclopaedic philosophy? This problem took almost a century after the death of Hegel to resolve, and in fact, remains today the major barrier to the development of human culture. Before we can return to the problem of the nature of concepts, we must follow the real struggle to resolve the mutual alienation between analytical science and holistic philosophy. Only at the end of this process can we return to the problem of concepts on a sound basis.

Part III. From Philosophy to the Human Sciences

Chapter 11. The Critical Appropriation of Hegel.

Cognitive psychologists "use 'concept' to refer to a mental representation and 'category' to refer to the set of entities picked out by the concept" (Medin et al, 2007). So, however concepts are constituted as mental representations, it is taken that the world is composed of 'entities' with given and uncontroversial features, by means of which they may be grouped into categories. Thus, we have dual worlds of concepts on one side mirroring entities grouped according to their features, on the other. Philosophically, this is a step *backwards* from Descartes' scepticism about how thought mirrored the world outside of thought 400 years ago.

On the other hand the critical discourse theorist, Jay Lemke, remarked in a private communication, in part:

> Just because there is a phenomenon that one might call 'conceptual thinking' or 'meaning-making mediated by linguistic thematic networks' doesn't mean that there are concepts as such. ...
> A sufficiently sophisticated model of situated, distributed, interactive, embodied sign-mediated cognition can 'rescue' the notion of 'a concept' for some rhetorical purposes, but I really think it's too risky and unwise to do so, given how much wrong-headedness (and -handedness) seems to come attached to it historically and culturally-ideologically. ... I'd leave it as an everyday locution, and drop it from efforts at a scientific discourse of these matters.

Perhaps Lemke is right and the uncritical, dualist prejudices entailed in the usual understanding of 'concept' are just too deeply ingrained for the concept to be rescued, but on the other hand, we can't even pose the question without calling on the concept of 'concept'. In his *Philosophical Notebooks*, Lenin quoted approvingly Hegel's remark in the *Science of Logic*:

> Here and there in this mesh there are firm knots which give stability and direction to the life and consciousness of spirit; these knots or nodes owe their fixity and power to the simple fact that having been brought before consciousness, they are independent, self-existent Concepts of its essential nature (Hegel 1816/1969 §24).

If a concept is just a node or a knot, or a thread for that matter, in the web of meaning, it is indispensable none the less. Without knots or threads, a web of meaning can capture nothing. Let alone, if we are to understand concepts as units of a formation of consciousness. I also contend that it is only by means of the logic and structure given to us by Hegel that the challenges pointed to by Lemke can be overcome, and it for this reason that I have devoted so much space to an exposition of what Hegel has to offer to a scientific study of concepts.

Hegel wrote in the absence of any of the insights that have been provided by laboratory methods in psychology and modern biology, any real knowledge of cultures outside of Europe or the insights of social science, anthropology and linguistics which has been built up in the 200 years since. His work was entirely speculative, based on study of the available history of human culture, political life, science and so on, and his experience as a teacher. But there is a sense in which, writing at the dawn of the modern era, Hegel had a clearer perspective on the development of the concepts themselves than is possible today.

Hegel and Activity

The presentation of Hegel's Logic given in Part II is already an interpretation, but an interpretation aimed at giving the modern reader access to an understanding of Hegel's ideas which is relevant to contemporary problems. As it stands, the *Logic* moves entirely within the circle of logical propositions. However, it is abundantly clear that the subject matter engaged by this exposition goes to the entirety of modern social life, and I have simply drawn on the few passages where Hegel explains this, and especially his early works, to make explicit the content of Hegel's *Logic*. That is, I have followed Hans-Georg Gadamer's advice:

> ... When we try to understand a text, we do not try to transpose ourselves into the author's mind but, if one wants to use this terminology, we try to transpose ourselves into the perspective within which he has formed his views. But this simply means that we try to understand how what he is saying could be right.

> If we want to understand, we will try to make his arguments even stronger. ...
>
> The anticipation of meaning that governs our understanding of a text is not an act of subjectivity but proceeds from the commonality that binds it to the tradition. But this commonality is constantly being formed in our relation to tradition. Tradition is not simply a permanent precondition; rather, we produce it ourselves inasmuch as we understand, participate in the evolution of tradition, and hence further determine it (Gadamer 2005: 291-3).

Accordingly, I have taken it that the Spirit whose nature Hegel investigated is *activity* in the sense in which Marxists have understood this term, which I deal with in more detail below. The origins of the philosophical concept of Activity lie with Herder and Fichte, themselves precursors of Hegel. I contend that no loss to Hegel's philosophy is entailed in this activity-reading. If we take activity to be the fundamental category of our understanding of the world, then we must read Hegel in this way if we are to "understand how what he is saying could be right." This is not to say that such a reading immediately resolves all the problems and defects in Hegel's philosophy. On the contrary. But it does make Hegel coherent and relevant to us as people confronted with the problems of modern social life, rather than as readers of dusty old books of philosophy. Moreover, it makes it possible to *criticise* Hegel and to "make his arguments even stronger."

Consider this passage from the Introduction to Hegel's *Philosophy of Right*:

> The theoretical is essentially contained in the practical. Against the idea that the two are separate runs the fact that man has no will without intelligence. The will holds within itself the theoretical, the will determines itself, and this determination is in the first instance internal. That which I will I place before my mind, and it is an object for me. ... man cannot use his theoretic faculty or think without will, for in thinking we are active. The content of what is thought receives, indeed, the form of something existing, but this existence is occasioned by our activity and by it, established. These distinctions of theoretical and practical are inseparable; they are one and the same; and in every activity, whether of thought or will, both these elements are found (1821/1952 §4 addition).

So this activity reading of Hegel, in which activity is a unity of theory and practice, can be justified in Hegel's own words, but it is necessary to take it further, making activity the fundamental concept of our approach, in terms of which all other concepts must be derived.

The great contribution that Hegel made was that, while not eliminating the subjective-objective distinction from his philosophy, he made this distinction secondary and *derivative* from the more fundamental *unity* between human beings and the world created by human activity in the world, which was his starting point. This meant that it was possible for Hegel to give us the definition of a concept which did not define concepts as inward subjective thought-forms, nor as objective worldly entities, nor a duality comprised by pairing up something subjective with something objective. The concept of 'formations of consciousness' gave him a primary concept from which objective and subjective aspects could be distinguished. Contrariwise, any approach which *begins* from entities as either objective or subjective cannot eliminate such a dichotomy because it is built into its foundations. Whether we call it Spirit or Activity is an entirely secondary question, in fact, provided we begin from a foundation which is prior to the rupture between the subject and object of activity.

There are only a limited number of concepts in our culture whose objects are not implicitly either subjective or objective. We may say that "beauty is in the eye of the beholder," but "beauty" still designates an attribute of the object. To develop a critical approach to concepts, we will have need for concepts like 'formation of consciousness' which are equally subjective and objective, and it is Hegel above all who has given us this kind of concept.

Hegel's Idealism

Much is made of Hegel's philosophical idealism and Marx's philosophical materialism, and the contrast between Spirit and Activity, on the face of it, would seem to justify this contrast. But the difference is not as dramatic as it appears at first sight, and it is not an ontological difference. What the two thinkers share – a conception of a social formation prior to any dichotomy between thinking and acting – is far more significant. Nonetheless, Hegel's idealism shows itself in seriously methodological errors which need to be noted.

We can agree that nature and history (for example) are intelligible and that the task of the natural scientist or historian is to disclose that rationality, but it is very easy to slide from this conviction, as Hegel often did, to fitting your data into a preconceived rational scheme.

Hegel's move from a dichotomy between human consciousness and the natural world to a philosophy based on the unity of human consciousness and the culture created by human activity was a crucial breakthrough. But along with this came a dichotomy between culture and Nature which led Hegel into serious errors. For example, he ascribed gender differences to Nature, where he should have recognised that these differences are cultural constructs.

From about 1805, Hegel moved away from a conception of Spirit as a *product* of human activity to a conception of Spirit pre-existing human history, and *manifesting* itself in history and culture. This opened the way to the rationalisation of all sorts of prejudices. It also led to errors in that Hegel expected history to recapitulate forms of association in *logical* order, whereas in fact the sequence of relations in history is often *opposite* to their sequence in the logic.

Finally, the progress of ideas depends on and reflects the progress in forms of real activity, but Hegel overestimated the creative and determinative role of the thinking activity of professional ideologists. He tended to see ideas progressing through the problem-solving and creative work of thinkers, reflecting upon problems manifesting themselves in activity, and the products of these professional thinkers then being taken up in activity. This is somewhat upside down. To his credit though, Hegel always emphasised the unitary character of a formation of consciousness.

These issues were dealt with by Marx.

Concepts are Processes not Entities

One of the problems which arose in the cognitivists' study of concepts was that radically different conceptions of concepts have succeeded one another in the history of their science, without any suggestion as to how successive theories could be reconciled with one another. Each new theory seemed to simply dismiss what had gone before as a mistake, or sit side-by-side with it as alternative theories.

First we had the so-called 'classical theory' which rested on the idea of the mind containing a dictionary which was consulted moment-by-moment for the definition of a concept. Then this was dismissed and replaced with the idea of prototypes, catalogues of the features of a prototypical example consulted for similarity, which was in turn replaced by a whole set of exemplars. These were then joined with ideas which introduced a 'top down' approach locating concepts within a theory or semantic network of related concepts.

But each of these ideas has a grain of truth. It cannot be denied that the concept of 'puppy', for example, has images of lovable, furry pets entailed in it, but equally the concept of 'puppy' has the idea that it is born of a dog, and must also make sense of a term like 'puppy love' and 'puppy fat' and has much in common with 'kitten'. So our concept of concept has to make sense of the fact that one and the same concept takes very different forms in connection with different activities.

This is after all much the same kind of problem which physics came up against with the observation of quantum phenomena: an elementary particle looked like a particle in one experimental set up and looked like an electromagnetic wave in another experimental set up. This did not mean abandoning the concept of particle or wave but rather forming a concept of elementary particle in which 'particle' and 'wave' specify the properties of one and the same entity manifested in different kinds of interaction; and there are a range of measures which correlate the wave and particle interactions of the same type of elementary particle. That is, a photon manifested as a wave is not something different from a photon manifested as a particle. Rather, wave and particle are different manifestations of a photon, whose properties are manifested only in interaction. And yet there is no way of describing a photon that is not either a particle or a wave.

Concepts are like this, and we need a concept of concept which is commensurate, a concept which makes sense of the different manifestations of what is essentially the same concept, in the large variety of activities in which concepts are manifested. That is, we need to see concepts as processes, rather than entities, at the most fundamental level.

There are three 'dimensions' to such a study. Firstly, we need to understand the different processes, both social and psychological, which underlie the various kinds of interaction, and understand these various modes of interaction in terms of processes of manifestation, common to concepts in general. That is to say reproducing lexical definitions of concepts is one psychological process, understanding a word in the context of reading a book another, speaking and understanding speech still other processes; recognising visual stimuli and acting appropriately is one process, categorising things on the basis of their appearance still another. This is true of any concept.

Secondly, we need to know how to understand the dynamics inherent in any given concept, which is specific to that concept. The concept of 'mother' is acquired by a child at a very young age, but undergoes a

series of changes as the child becomes an adult. The concept of 'mother' which forms part of the public political debate is a very different one. The life course of a concept like 'force' is very different according to whether you study physics at school. The trajectories here are not the same for every concept.

Every concept has a distinct path through cultural history, which constitutes the third 'dimension' of the development of concepts, in which entire social formations undergo change, reflected in all the concepts making up a social formation.

These three dimensions are by no means clearly distinguished and delineated by Hegel, although his Logic remains an indispensable resource for the concepts needed for each of these studies. We need to take from Hegel that a concept is a unit of what he called a 'formation of consciousness'. But I will refer to a 'formation of consciousness' as a *project*. A concept can therefore only be understood in terms of the project of which it is a part, and in connection with other projects which may have interacted with it.

As such, over and above the evolution of our neurophysiology, a concept has three distinct development processes:

- the *microgenetic* process through which it is manifested in the course of interactions;
- the *ontogenetic* or learning process in which an existing concept is acquired by an individual and subsequently enters into their life activity; and
- the *cultural-historical* process through which a concept is first formulated, developed within some project and then concretised and ultimately merges into the entire way of life.

Each of these processes requires specialist investigation, but in each case, the concepts of Hegel's Logic will prove to be an invaluable resource. Our task here is simply to give an adequate definition of what a concept is. Investigation of the processes of concept formation is another matter.

Surely it is a truism that something cannot be understood without understanding its life-process, how it comes into being and the conditions of its existence. That is to say, the *concept of something* entails its whole life process. Even more then is the *concept itself* to be understood as a life-process. It is also surely true that something can only be understood in its connection with other things, and so the concept of something must reflect those relations. Even more then

must the concept itself be understood in connection with the life activity, the cultural context and the people who use it. Hegel demonstrates how such considerations may be taken up in a philosophical consideration of the concept of concept, but it is no longer tenable to carry out such a task on a purely logical basis, in isolation from concrete psychological and sociological investigations. It is now both possible and necessary to develop a critical approach to concepts which incorporates the gains of the sciences and is intended for further development in scientific investigation.

The Structure of the Concept

The feature of Hegel's concept of concept which is most challenging and novel is its structure. Hegel claims that the concept has three moments, which he calls the individual, universal and particular. He does not privilege any one of these moments, nor does he see them, like Charles Sanders Peirce, as three 'types' of concept. Rather, the concept is this structured, internally dissonant whole.

For example, the concept of "tree" is a word, a series of social practices and an infinite number of acts in which something is named by the word in the course of different social practices. You can't take away one of those three and have remaining anything resembling the concept of "tree." But all the contradictions and fuzzy edges, disagreements and typicality phenomena which makes a simple concept like "tree" so problematic, arise from the non-coincidence and dissonance between the three moments of the concept. This dissonance cannot be eradicated, and nor is there any reason to. If we want to study concepts, then we have to recognise their nature as expressed so clearly by Hegel in terms of individual, particular and universal moments.

From a sociological point of view, the social practices which, for example, establish a certain kind of plant as "tree" belong to a definite form of life alongside the sciences of botany and agriculture, market economics and the different uses to which trees are put. From the point of view of the linguist, "tree" is an English word, and has its etymology and its connection with other words in the language, and the various metaphorical uses of "tree." At the same time, there are the great variety of plants and other things which may be subsumed from time to time under the concept of tree. To understand the concept of "tree" entails understanding all this.

Each of these different moments of the concept implicate different aspects of the nervous system. We know that apprehending individual

trees entails the stimulation of the various senses and the cognition of these stimuli. We know that understanding the word "tree," whether written or spoken, engages other aspects of the nervous system. And finally, participation in social practices of buying and selling, pruning, climbing, painting, pointing, shading under trees and so on, engage sensorimotor functions of the brain (c.f. Barsalou 2008: 92), and all these aspects of our inner life and implicated in the concrete conception that Hegel suggests to us.

Medical and psychological science has progressed so far in the past 200 years it is not surprising that Hegel's psychology seems somewhat antique to us today. But after all, neither Freud nor the cognitivists claimed to represent actual neuronal structures, but only conceptual models of the structure of the individual mind. So in this sense, Hegel stands on an equal footing with the cognitivists and psychoanalysts. I will make no specific claims for Hegel's psychology, but it may provide a source of inspiration.

Marx

It was Karl Marx who translated the arcane idealistic language of Hegel and his young followers into the language of practical life and it is Marx who is the link from Hegel to Lev Vygotsky, the subject of the latter part of this work. Marx published little on philosophy and nothing at all on psychology, so we have to rely on unpublished manuscripts and notes to bring his insights to light. The founding document of Activity Theory, *Theses on Feuerbach*, was written by Marx in April 1845, though not discovered until after his death.

In February 1842, Marx met the Young Hegelian, Moses Hess at the offices of the *Rheinische Zeitung* in Köln. Hess had been a follower of Johann Gottlob Fichte, and was now a communist. The two made a great impression on each other, and they collaborated until their falling out in August 1847, when Marx published a section of *The German Ideology* denouncing Hess's "true socialism." But in 1843, Hess had written "The Philosophy of the Act" in which he appropriated Fichte's concept of Activity as the foundational concept for a communist philosophy: "Not being, but the act, is the first and last." Marx in turn appropriated Hess's concept of activity and made it the foundation of his own philosophy, which he sketched in 11 short theses. This document is so crucial to resolving the problems of understanding what is a concept, I will now present these 11 theses with annotations.

> 1. The main defect of all hitherto-existing materialism – that of Feuerbach included – is that the Object, actuality, sensuousness, are conceived only in the form of the object, or of contemplation, but not as human sensuous activity, practice, not subjectively. Hence it happened that the active side, in opposition to materialism, was developed by idealism – but only abstractly, since, of course, idealism does not know real, sensuous activity as such. Feuerbach wants sensuous objects, differentiated from thought-objects, but he does not conceive human activity itself as objective activity. In *The Essence of Christianity*, he therefore regards the theoretical attitude as the only genuinely human attitude, while practice is conceived and defined only in its dirty-Jewish form of appearance. Hence he does not grasp the significance of 'revolutionary', of 'practical-critical', activity.

Here, in the very first recorded words of "Marxism," Marx is criticising philosophical *materialism* and giving credit to *idealism*, i.e., Hegel. And this criticism goes to all the human sciences today. Concepts cannot be treated as representing objects, irrespective of the activity through which concepts are manifested. The Jewish reference alludes to a contemporary debate in which the Jewish God of the Old Testament, had to 'get his hands dirty' making the world, representing a symbolic contrast between the Christian God of the Word, and the Jewish God of the Deed, i.e., practical life. Marx is criticising materialism for taking the standpoint of natural science: that of an observer, contemplating an independently existing object. Objects exist, distinct from thought, but it is thanks to activity, 'practical-critical' activity, that the object is perceived. The words activity, practice and *praxis* may be used interchangeably, with or without the various adjectives.

> 2. 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 which is isolated from practice is a purely scholastic question.

This is not just a claim that "the proof of the pudding is in the eating." The truth is itself *internal to activity*. The truth of an action is to be found within the activity of which it is a part, and the truth of an activity to be substantiated by its viability within an entire way of life. That is not the same as saying that activity *proves* the truth of a

proposition, meaning simply that you can have a theory, and then test it out, and be proved wrong or right. For example, Marx left a number of questions open when he wrote the *Communist Manifesto* in 1848. He had to wait till the Paris Commune of 1871 before he clarified these questions. Marx did not try to reason them out in his head. He did not make a proposal and then watch to see if it worked. Rather, he followed the movement of the working class and tried to give voice to it. Practice is the foundational category, the substance of human life, from which all other categories must be derived.

> 3. The materialist doctrine that men are products of circumstances and upbringing, and that, therefore, changed men are products of changed circumstances and changed upbringing, forgets that it is men who change circumstances and that the educator must himself be educated. Hence this doctrine is bound to 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-change can be conceived and rationally understood only as *revolutionary practice*.

This caution speaks to the whole class of professional ideologists and social scientists who take their human 'subjects' as objects, capable only of responding to stimuli, while exempting themselves from participation in the same conditions as their subjects. This "God's eye view" from which a theoretician imagines themself to observe the world from outside and above culture and history is an illusion. What happens in the world, says Marx, must be understood not as individuals acting in response to circumstances, but rather as *self-change*, since the circumstances are also created by people.

> 4. Feuerbach starts off from the fact of religious self-estrangement, of the duplication of the world into a religious, imaginary world, and a secular one. His work consists in resolving the religious world into its secular basis. He overlooks the fact that after completing this work, the chief thing still remains to be done. For the fact that the secular basis lifts off from itself and establishes itself in the clouds as an independent realm can only be explained by the inner strife and intrinsic contradictoriness of this secular basis. The latter must itself be understood in its contradiction and then, by the removal of the contradiction, revolutionized. Thus, for instance, once the earthly family is discovered to be the secret

> of the holy family, the former must itself be annihilated theoretically and practically.

This refers to Feuerbach's book, *The Essence of Christianity*, published in 1841, in which Feuerbach went through all the concepts of Christianity and showed that each apologetically reflected a corresponding earthly relation. His claim was that by saying in effect "This is how things are in Heaven," the Church sought to *justify* the earthly institution which was reflected in the myth. (Nowadays, people say instead: "This is how things are in Nature.") Religion, for Feuerbach, was an ideological rationalisation for the suffering and injustice the masses experienced on Earth. The idea behind this was that once the real meaning and function of religion had been *exposed* as a pernicious fiction, then the mystique would be broken and people would throw off their religious superstitions and see things for what they really were. This ignores the fact that ideology not only reflects earthly relations and serves to maintain and regulate them, but reflects *real needs* arising from those relations. It is not exposing religious illusions which will eliminate oppression and suffering but rather the elimination of oppression and suffering which will do away with religious illusions. The exposure of religion contributes nothing to that, save to make the critic feel superior to the deluded masses. Religion is the general theory of those oppressive relations.

So yes, religious ideology reflects social practices, but changing those practices is a practical question and has to be resolved practically. A changed ideological reflection of those new relations necessarily accompanies changed social practices.

> 5. Feuerbach, not satisfied with *abstract thinking*, wants *sensuous contemplation*; but he does not conceive sensuousness as *practical*, human-sensuous activity.

Here Marx emphasises the *active*, practical character of cognition. Sense perception is itself an *active* process, rather than a process of passively reflecting objects.

> 6. Feuerbach resolves the essence of religion into the essence of man. But the essence of man is no abstraction inherent in each single individual. In reality, it is the ensemble of the social relations. Feuerbach, who does not enter upon a criticism of this real essence is hence obliged: 1. To abstract from the historical process and to define the religious sentiment regarded by itself, and to presuppose an abstract – isolated – human individual. 2. The essence therefore can by

> him only be regarded as 'species', as an inner 'dumb' generality which unites many individuals only in a *natural* way.

Feuerbach saw human beings as essentially natural creatures, whose nature could be understood solely in terms of their biological, animal nature. Consequently, he believed that everything essential to being human is to be found in each single individual, so he believed that the propensity to religious belief must be lodged in the biology of every human being. This is a mistake, for the essence of a human being, according to Marx, is the entire ensemble of social relations. So Feuerbach takes the human species as simply an aggregate of individuals of like kind, as an 'abstract general' concept, whereas in fact, human communities are actively constituted by the activity of their members. In this way, human beings create their own nature.

> 7. Feuerbach consequently does not see that the 'religious sentiment' is itself a *social product*, and that the abstract individual that he analyses belongs in reality to a particular social form.

Thus, religiosity is a product of a given social formation, and Feuerbach wrongly ascribes this religiosity to an abstract, ahistorical 'human nature'.

> 8. 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.

'Practical' here means purposive actions, mental and physical, directed towards solving the problems which people are confronted with in their lives, i.e., activity. Marx draws an important conclusion: all problems of theory have to be resolved by (1) practical intervention and (2) having a mind to understanding the activity of those involved. Activity is the fundamental category, or substance of all social theory and philosophy, and not even logical deduction is reliable other than in close connection with activity. This is a radical activity-theoretical claim.

> 9. The highest point reached by contemplative materialism, that is, materialism which does not comprehend sensuousness as practical activity, is the contemplation of single individuals and of civil society.

This characterisation remains relevant to all mainstream modern social theory which can only understand human beings interacting with one another as independent agents. Economics for example, in its theory,

takes human beings to be individual, self-seeking agents, and in its practical activity contributes to making people like this. On the contrary, human beings can be truly understood only in terms of their collaborative activity and struggle within definite forms of society.

> 10. The standpoint of the old materialism is civil society; the standpoint of the new is human society or social humanity.

Marx takes human beings not as so many individuals but as a social organism which produces its own form of life through collaborative activity and a shared culture, and it is this collaborative activity and culture which constitutes the essential nature of every individual.

> 11. Philosophers have hitherto only interpreted the world in various ways; the point is to change it.

This famous thesis is often misunderstood. Marx meant that the point of philosophy is to change the world, *not* that we have to change the world and philosophy is pointless.

I will pursue Marx's notion of activity as the substance of his philosophy, and the implications of this for his approach with just one further excerpt, from the *Grundrisse* of 1857.

In the passage on "The method of Political Economy," Marx looks at the development of abstractions like "exchange-value" and how such abstractions are deployed by political economists to reconstruct real economic activity in theoretical terms. He considers the question as to why, for more than 2,000 years since Aristotle first puzzled over the question of exchange-value, it was only in his own day that the secret of the formation of exchange-value and its ramifications were being disclosed. According to Hegel, the growing understanding of economic categories such as exchange-value, was a result of the theoretical work of political economists who disclosed the content of the concepts of political economy. Most people would understand the progress of natural science in much the same way: as a long train of problem-solving each building on the solutions of those before them. But this doesn't stand up does it?

> But as a category exchange value leads an antediluvian existence. Hence, [to Hegel] the movement of the categories appears as the real act of production ... this is true in so far as the concrete totality regarded as a conceptual totality, as a mental concretum, is in fact a product of thinking, of comprehension; yet it is by no means a product of the self-evolving concept whose thinking proceeds outside and above perception and conception, but of assimilation and

> transformation of the perceptions and images into concepts. The totality as a conceptual totality seen by the mind is a product of the thinking mind, which assimilates the world in the only way open to it, a way which differs from the artistic-, religious- and practical-intellectual assimilation of this world. The real subject remains outside the mind and independent of it – that it to say, so long as the mind adopts a purely speculative, purely theoretical attitude. Hence the subject, society, must always be envisaged as the premises of conception even when the theoretical method is employed. ... The simplest abstraction which plays the key role in modern [political] economy, and which expresses an ancient relation existing in all forms of society, appears to be true in practice in this abstract form only as a category of the most modern society (MECW v.28: 38).

The point is that human activity develops in its own way. Gradually, over millennia, all the aspects of the concept of exchange-value were actualised as real relations, ultimately in the form of money, a symbol representing exchange-value, now a central part of the organisation of social life. In modern bourgeois society, the concept of exchange-value has reached its ultimate development, and the theorist has only to reflect what has already been brought to light by the development of activity itself.

Marx took this insight very seriously. The *Communist Manifesto*, first published in 1848, is full of contradictions and ambiguous formulations, such as "all production has been concentrated in the hands of a vast association of the whole nation." Today's Stalinists, Democratic socialists, Trotskyists, anarcho-syndicalists and social democrats can all alike embrace the *Manifesto* as their own. This is because in 1848, all these tendencies were still implicit within the workers' movement, whereas over the century following each of these currents differentiated themselves out within the workers' movement. Marx's only amendment to views expressed in the *Manifesto* were made in the wake of the Paris Commune of 1871, when he responded to the experiences of the Commune in their attempts to overcome the counter-revolution and secure their own power, and made a small amendment to the *Manifesto*.

In other words, Marx understood that concepts are forms of activity, prior to their being brought to conscious awareness in theory. The job of the theorist is to assimilate activity in thought. Problems arise in the course of the development of human activity, particularly the

perfection of instruments and machinery. These problems are tackled as practical problems and resolved in practice. The new forms of activity and artefacts which are produced in turn are incorporated into new theories embodying new concepts. Because human beings are born realists, each new development in human practice is ascribed to new objects and newly-discovered properties of an independently existing natural world.

With this activity-theoretical interpretation, Hegel's highly developed speculative theory of concepts can be utilised on a scientific basis. Hegel's science of Concepts was based on an encyclopaedic knowledge of the history, culture and natural science of his times, but neither Marx nor Hegel had ever conducted the kind of experiment and observation necessary for a genuinely scientific theory of concepts. For this an entire tradition and practice of science had to be created.

Chapter 12. Sources of Cultural Psychology

Marx's appropriation of Hegel's idealism on the basis of activity (or praxis) rather than Spirit, had created the basis for an interdisciplinary science of concepts. But Marx was a communist, not a philosopher or psychologist. His concern was scientific socialism, and his laboratory was the Revolution of 1848, the International Workingmen's Association and the Paris Commune.

In the decade after Hegel's death, the first proletarian uprisings had broken out in France and the Chartist movement in Britain marked the opening of a new historical phase. The bourgeoisie was now no longer a revolutionary force as it had been, but found itself in opposition to further extension of the emancipatory developments it had released. This aggravated the problem of transcending the limitations of idealist philosophy and analytical science. Science itself became politicised. The appropriation of Hegel's philosophy could not proceed in a straight line.

I will characterise the theoretical framework in which a science of concepts could be pursued as "Cultural Psychology." By "Cultural Psychology" is meant the study of human consciousness using laboratory techniques, which incorporates into its methods the cultural sources of concepts – the language, institutions, forms of commerce and production, family life and so on – in the wider society. The creation of a Cultural Psychology was a serious scientific and technical challenge. The process of its creation in a world in which science had become politicised, split into human sciences and natural sciences, and dominated by analytical philosophy, was a complicated process. This process found success only after the Russian Revolution, in the work of the Soviet psychologist, Lev Vygotsky (1896-1934). At the time Vygotsky intervened in Soviet Psychology in the 1920s, varieties of physiological and social behaviourism dominated both Soviet and American psychology, although Freud also exerted great influence on psychology across the world. In the United States, John Dewey anticipated much of Vygotsky's ideas, but both Vygotsky and Dewey remained relatively marginalised by mainstream, analytical approaches in both countries. In this chapter I will trace this process of the creation of Cultural Psychology, from the middle of the 19th century up to the aftermath of the Russian Revolution.

There are three sources and component parts of Cultural Psychology: German Natural Science, French Sociology and American Pragmatism.

I shall use a series of brief biographical sketches to indicate these currents of thought and their interconnections, so that we can better understand the sources from which Vygotsky's idea of concepts arose in the wake of the Russian Revolution. This process – the real, historical resolution of the contradiction between philosophy and experimental science – remains a live issue today and it is hardly likely that an adequate science of concepts will be created without a restoration of the unity of science and philosophy.

The disconnection between experimental psychology and philosophy was there from the beginning of psychology as a branch of positive science. By following the real process by means of which this mutual disregard was overcome, perhaps we can better appreciate the outcome.

German Natural Science

Herman von Helmholtz (1821-1894)

Helmholtz was one of the greatest scientists of the 19th century, particularly due to his successful application of the methods of mathematics and physics to the study of living organisms. He made fundamental contributions to physiology, optics, electrodynamics, mathematics, and meteorology, but is best known for his statement of the law of the conservation of energy and his successful struggle against vitalism.

A sickly child, his father, who was a teacher of philosophy and literature at the Potsdam Gymnasium, taught him Greek, Latin, French, English, and Italian, and the philosophy of Kant and Fichte at a young age. Much of Helmholtz's later work was devoted to refuting Johannes Müller's "Nature Philosophy" which he had been taught by his father.

He attended the Friedrich Wilhelm Medical Institute in Berlin under the great physiologist and nature philosopher, Johannes Müller, receiving a free medical education on the condition that he serve eight years as an army doctor. He also attended the lectures in physics, worked his way through higher mathematics from textbooks, and taught himself the piano.

Shortly after graduating, he was relieved from military duties and became assistant professor and director of the Physiological Institute in Königsberg and in 1855 was appointed professor of anatomy and physiology at the University of Bonn. More and more his interests moved towards physics. In 1882 he was elevated to the nobility and in

1888, appointed director of the Physico-Technical Institute at Berlin, where he spent the remainder of his life.

One of the central scientific interests of the latter part of the nineteenth century was investigation of the relationship between human beings and Nature through the study of the physiology of perception. The majority of biologists of his day, including Müller, believed in the existence of a *life force* of some kind, inhabiting the bodies of living beings and responsible for their vitality. From an early age, Helmholtz set himself to dispense with vitalism. But further, although much influenced by Kant, he was critical of Kant's idea of *innate faculties* of Reason and the pure intuition of space and time. Helmholtz insisted that *all* knowledge came through experience. He also rejected Hegel's deduction of natural law from philosophical considerations. Although criticising natural science for paying no regard "to the rightful claims of philosophy, that is, the criticism of the sources of cognition, and the definition of the functions of the intellect," he held, on the other hand, that Hegel had overstretched the claims of philosophy in natural science. He believed that the natural and human sciences should maintain contact with each other, but their methods and foundations had to be kept separate.

At the beginning of his career, in Johannes Müller's laboratory, Helmholtz determined himself to tackle the problem of uncovering the physical and chemical processes at work in living organisms. His doctoral thesis on the connection between nerve fibres and nerve cells soon led him to the problem of explaining the generation of body heat on the basis of physics and chemistry. He aimed in this way to refute the doctrines of vitalism, which held that body heat was derived from the action of the "life force." His general considerations in preparing this work led to his formulation of the Law of Conservation of Energy ('Force' as he called it). His 1847 paper marked an epoch in the history of natural science. In 1850, Helmholtz succeeded in measuring the speed of transmission of nerve impulses at 27 metres per second, an observation, the sheer mundanity of which, contributed to undermining vitalism.

In attempting to develop a consistent empiricism, he formulated an epistemology based on a conception of sensations as 'symbols' of external reality: "as the quality of our sensations informs us of the properties of external action by which this sensation is produced, the latter can be regarded as its *sign*, but not as its *image*." While Müller explained the correspondence between sensation and object by means of an innate configuration of sense nerves, Helmholtz argued that we

construct that correspondence by means of a series of learned, "unconscious inferences." For Helmholtz, the degree of resemblance between perception and object may be as remote as the degree of resemblance between a written name and the physical person to whom the name refers.

With painstakingly detailed investigation of the mechanisms of sight, and later studies of the sensations of audible tones, Helmholtz undermined Kant's conception of the innate comprehension of space and time, and published a number of exemplary works on the physiology of sight and hearing. Helmholtz showed how the sense of vision created the sense of space, which was learned, rather than innate. Moreover, Helmholtz also attacked Kant's insistence that space was necessarily three-dimensional because that was how the mind had to conceive it. Using his considerable mathematical talent, he investigated the properties of *n*-dimensional space and showed that it could be conceived and worked with as easily as Euclidean space. *Contra* Kant, he concluded that Euclidean space is *not* an inescapable form of our faculty of intuition, but a product of experience.

Helmholtz's mathematical talent was exceptional. He solved equations that had long frustrated physicists and mathematicians. In 1858, he published the paper "On the Integrals of Hydrodynamic Equations to which Vortex Motions Conform." This was not only a mathematical triumph, but also seemed to provide a key to the fundamental structure of matter. One of the consequences that flowed from Helmholtz's mathematical analysis was that vortices of an ideal fluid were amazingly stable; they could collide elastically with one another, intertwine to form complex knot-like structures, and undergo tensions and compressions, all without losing their identities. In 1866, Kelvin proposed that these vortices, if composed of the ether that was presumed to be the basis for optical, electrical, and magnetic phenomena, could act exactly like primeval atoms of solid matter. Thus the ether would become the only substance in the cosmos, and all physical phenomena could be accounted for in terms of its properties.

Helmholtz also did significant work on the mathematics of electrodynamics and spent his last years unsuccessfully trying to reduce all of electrodynamics to a minimum set of mathematical principles, an attempt in which he had to rely increasingly on the supposed mechanical properties of the ether.

In an 1881 lecture delivered in London, Helmholtz argued for the particulate nature of electricity, leading to the coining of the word

"electron." Helmholtz completed the whole development of classical natural science. When Helmholtz died in Berlin in 1894, physics was poised on the brink of revolution. The discovery of X rays, radioactivity, and relativity led to a new kind of physics. The same person who proved that life and consciousness rested solely on natural processes, also proved that sensations had to be understood as signs, rather than images of any sort. Thus were the preconditions for a scientific cultural psychology laid in the nineteenth century.

Wilhelm Dilthey (1833-1911)

Dilthey was the founder of Descriptive Psychology and an opponent of British empiricism and the positivism of people like Comte and Spencer. Dilthey argued for methods in the human sciences distinctly different from that of the natural sciences, and that Psychology should be the foundational science for all the human sciences.

Dilthey objected to the pervasive influence of the natural sciences and developed a Philosophy of Life emphasising historical contingency. His 'Philosophy of Life' drew on Hegel's *Geist* and pivoted on the notion of a living spirit which develops in historical forms. Dilthey was little known during his own lifetime, being rediscovered in post-World War One Germany, and is now widely recognised as a founding figure of cultural studies.

Dilthey was the son of a Reformed Church theologian, but after studying theology at Heidelberg and Berlin, he transferred to philosophy. After completing his Doctorate at Berlin and a short time as a school teacher, he dedicated himself full-time to writing. After appointments at Basel and Breslau, he took up the position as Chair of Philosophy at the University of Berlin, where he spent the remainder of his life.

Dilthey's aim was to find the philosophical foundations for what he called the "sciences of man, of society, and the state", which he named *Geisteswissenschaften*, usually translated as "human sciences" – a term that eventually gained general recognition to collectively denote the fields of history, philosophy, religion, psychology, art, literature, law, politics and economics.

In 1883, the first volume of his "Introduction to Human Sciences" appeared but the second volume never appeared, only a series of essays including "Ideas Concerning a Descriptive and Analytical Psychology" in 1894.

Against the dominant conception of his time, Dilthey opposed the idea that the human sciences should emulate the methodology of the natural sciences, and tried to establish the humanities as sciences in their own right. Dilthey developed important insights in his study of interpersonal experience, its realisation in creative expression, the reflective understanding of this experience, and the "logical development" that may be attributed to the development of knowledge and culture in social and historical processes. He developed his "descriptive psychology," mainly through the study of literature, and said of the psychology of his times: "Contemporary psychology is an expanded doctrine of sensation and association. The fundamental power of mental life falls outside the scope of psychology. Psychology has become only a doctrine of the forms of psychic processes, thus it grasps only a part of that which we actually experience as mental life." Psychology needed to be based on an analysis of mental processes in *real-life situations*, rather than in a laboratory. Dilthey emphasised that the essence of human beings *cannot* be grasped by *introspection* but only from a knowledge of history and the history of the arts in particular. Knowledge could never be final, because history is never final. Dilthey thus suggested, for the first time, a Cultural Psychology, though Dilthey preferred the term *Geisteswissenschaft*, in which *Geist* is to be understood in the Hegelian sense in which spirit is manifested in both history and the psyche.

Dilthey held that the *historical* relativity of all ideas and institutions is the most characteristic and challenging fact in the intellectual life of the modern world. He was hostile to the construction of closed, rational systems and preferred to leave questions unsettled. This preference for leaving questions open, was perhaps the main contributing factor to his failure to be recognised in his own time. Only after the War, did the significance of the methodology of his historical philosophy of life come to be appreciated.

Wilhelm Wundt (1832-1920)

The German physiologist and psychologist, Wilhelm Wundt proposed that two different sciences were required for the study of the human mind: Experimental Psychology and *Völkerpsychologie*. Experimental or "subjective" psychology aimed to trace elementary psychic experiences and reactions to physiological processes using the introspection of trained subjects. *Völkerpsychologie* covered the territory that Dilthey had opened up in his Descriptive Psychology.

Graduating in medicine from the University of Heidelberg in 1856, Wundt studied briefly with Johannes Müller, before joining the University of Heidelberg, where he became an assistant to Helmholtz in 1858. There he wrote "Contributions to the Theory of Sense Perception" (1858-62). It was during this period that Wundt offered the first course ever taught in scientific psychology. Until then, psychology had been regarded as a branch of philosophy to be conducted primarily by rational analysis. Wundt instead stressed the use of experimental methods drawn from the natural sciences. His lectures on psychology were published as "Lectures on the Mind of Humans and Animals" (1863).

Bypassed in 1871 for the appointment to succeed Helmholtz, Wundt then applied himself to writing a work that came to be one of the most important in the history of psychology, "Principles of Physiological Psychology" (1874). The "Principles" advanced a system of psychology to use introspection to investigate the immediate experiences of consciousness, including sensations, feelings, volitions, apperception and ideas.

Wundt recognised the two different objective processes involved in Psychology: culture and physiology. The physiological basis of psychology could be studied with the aid of introspection. *Völkerpsychologie* (usually translated as "Cultural Psychology"), however, could not be studied by laboratory methods because the higher psychological functions extend beyond individual human consciousness, for example, in the construction of languages and social institutions. *Völkerpsychologie* requires the use of a developmental-historical methodology, and must therefore incorporate ethnology, the "science of the origins of peoples."

> Its problem relates to those mental products which are created by a community of human life and are, therefore, inexplicable in terms merely of individual consciousness, since they presuppose the reciprocal action of many ... Individual consciousness is wholly incapable of giving us a history of the development of human thought, for it is conditioned by an earlier history concerning which it cannot give us any knowledge (quoted in Cole 1997: 29).

In 1871, Wundt began publication of a scientific journal of psychology, "Philosophical Studies." In 1875 he took up a position at the University of Leipzig and in 1879, established the first psychological laboratory in the world, where the founders of both

American and Russian Behavourism, Edward Titchener and Vladimir Bekhterev, studied.

Carl Stumpf (1848-1936)

An early student of Franz Brentano, the founder of *Act Psychology*, Stumpf became head of the Berlin School of Experimental Psychology, from where he exercised great influence. Edmund Husserl, the founder of Phenomenology, Max Wertheimer, Wolfgang Köhler, and Kurt Koffka co-founders of Gestalt Psychology were all influenced by Stumpf. Stumpf was critical of the use of pure introspection and regarded Wundt's work as 'mechanistic'. He was a good friend of William James, and supervised Kurt Lewin's PhD studies.

Sigmund Freud (1856-1939)

In 1873, Freud entered the University of Vienna to study medicine, where he worked with Ernst von Brücke, an exponent of Helmholtz's anti-vitalism. In 1882, he went to the General Hospital in Vienna to train in psychiatry, and was appointed lecturer in neuropathology. He also admired the work of Franz Brentano and Friedrich Nietzsche. In 1885, Freud went to Paris to work under Jean-Martin Charcot who was using hypnosis to cure patients suffering from paralysis and 'hysteria'. Freud returned to Vienna after a very short stay in Paris and never succeeded in mastering the art of hypnosis. The physician Josef Breuer, who had cured an hysterical patient by simply encouraging her to talk about her problem, provided Freud with an alternative approach. 10 years later he published a joint paper with Breuer on the use of free association as a technique for uncovering the roots of psychosis. Thus arose the talking cure which characterises psychoanalysis.

The key insight to which the work with free association led Freud was that there was something called the "Unconscious." Freud did not invent this concept, but he was the first to systematically investigate it and develop a definite conception of the structure of the psyche. Freud's idea was that the content of the "Unconscious" were events which had been repressed and hidden from awareness for some reason. However, from time to time people would make a "slip of the tongue" or in one way or another do something from which the contents of the Unconscious could be inferred. The point then was to develop ways of bringing these unconscious thoughts to light so that the patient themself could deal with them.

In the course of this study – to which he gave the name 'Psychoanalysis' in 1896 – Freud formed the view that the principal content of this Unconscious was sexual, even if the patients did not directly articulate it. Freud's early work concentrated on female 'hysteria', but in order to formulate a general theory of the mind, Freud had to broaden his work to study the psyche of the normal male. Freud began by studying the one psyche to which he believed he had direct access – his own. However, the psychoanalytic movement he began reserved the privilege of self-analysis for its founder alone; every psychoanalyst is inducted into the profession by being psychoanalysed by a psychoanalyst, thus joining a genealogy linking back to Sigmund Freud's original self-analysis.

In "The Interpretation of Dreams," he interspersed evidence from his own dreams with evidence from those recounted in his clinical practice. Freud saw dreams as essentially a form of wish fulfilment, in which the real meaning of the unconscious is "coded" in the form of images taken from everyday experience, and regarded dreams as the "royal road to the unconscious."

Centred on the concept of repression of sexual desire, Freud developed explanations for hysteria, obsessive compulsions, paranoia, and narcissism. However, Freud's achievement is easily separable from his conviction that sexual frustration lay at the root of all these disorders. Although Freud's theories scandalised the sexually repressed Vienna of his day, they attracted wide interest across Europe. In 1902, Freud's Psychological Wednesday Circle began to grow, including Alfred Adler and Carl Jung among participants. In 1908, the group was renamed the Vienna Psychoanalytic Society and became an international organisation, and for much of the twentieth century, a vast social movement of popular psychoanalysis.

Freud constructed a very elaborate "topology" for the Mind, including the division of the psyche into the Unconscious, Preconscious, and Conscious and structural components called the Id, the Ego, and the Superego.

Franz Boas (1858-1942)

Boas, the father of American Anthropology, studied at the University of Berlin and was influenced by the ideas of Herder and the v. Humboldt brothers and Helmholtz. Boas introduced a systematic and scientific approach in anthropology, freed of all biologistic explanations.

Boas received his doctorate in physics from Kiel university in 1881, on the optical properties of water, but had become intrigued by the problems of perception that arose in his research and the psychological and epistemological problems in physics. In his study of threshold perception of colour, he concluded that, contrary to the scientific wisdom of the time, perception is always situational, and there is no universal threshold of perception. He considered moving to Berlin to study psychophysics with Helmholtz, but having no training in psychology, he chose anthropology instead. He spent a year with the Inuit people on Baffin Island, work which made him famous. Fed up with the anti-Semitism in Germany, Boas settled in the United States and made his career in anthropology, convinced that all cultures were based on the same basic mental principles, developed differently in different cultures. Boas introduced "culture" as an explanatory concept into the human sciences for the first time, holding that ideas and concepts are valid only within the scope of the culture of which they are a part, and was the first person to use the plural: "cultures." Variations in custom and belief, he argued, were the products of historical accidents and he dismissed as worthless all the nineteenth century science of "race" along with the presumed superiority of the Anglo-Saxon "race." Based on physical measurements comparing immigrants with their family remaining in Europe, he demonstrated that not only habits, but *body shape* and bone structure were determined by culture as well as inheritance. This discovery was ground-breaking. Boas participated in all the social and cultural disputes in America alongside the Pragmatists such as John Dewey. His work influenced the development of Cultural Psychology not only in America but across the world.

Christian von Erhrenfels (1859-1932)

Austrian philosopher and student of Franz Brentano, Ehrenfels was inspired by Ernst Mach's "Analysis of Sensations," and Goethe's idea of Gestalt. With his book "On the Qualities of Form" (1890), he initiated a search for the psychological mechanisms of the perception of Gestalt forms through the senses. Erhrenfels is regarded as a precursor of Gestalt Psychology.

Kurt Koffka (1886-1941)

A founder of Gestalt Psychology, Koffka studied perception and sensorimotor learning. A student of Wertheimer and Stumpf, Koffka trained as a psychologist in Berlin under Stumpf, and in 1910 with

Wolfgang Köhler. He joined Max Wertheimer's research into the optical illusion known as the phi phenomenon* at Frankfurt University. He developed an interest in learning and in 1921 published "Growth of the Mind: An Introduction to Child Psychology," and in 1935 "Principles of Gestalt Psychology." A fluent English speaker, Koffka is mainly responsible for popularising Gestalt Psychology in the English-speaking world.

Wolfgang Köhler (1887-1967)

Köhler was one of the founders of Gestalt Psychology, trained under Wertheimer and Carl Stumpf, and attended the lectures of von Ehrenfels in Prague. Wolfgang Köhler was born in 1887 in Estonia. He researched the physics of hearing under Carl Stumpf at the University of Berlin. He then became an assistant at the Psychological Institute in Frankfurt, where he met and worked with Max Wertheimer. In 1913, Köhler took advantage of an assignment to work at the Anthropoid Research Centre at Tenerife, studying the problem-solving abilities of chimpanzees, where he remained until 1920, during which time he wrote "The Mentality of Apes." Kohler's aim was to study the nature of intelligence by giving the chimps tasks which stretched their abilities to the limit.

In 1922, he became the chair and director of the psychology laboratory at the University of Berlin, where he stayed until 1935. During that time, in 1929, he wrote "Gestalt Psychology" which included strong opposition to introspection as well as the analytical approach to psychology. In 1935, he moved to the U.S., where he taught at Swarthmore, Pennsylvania. He was a particularly vocal opponent of Social Behaviourism, which he claimed failed to make use of physiological measurements which provided information about a person's internal state.

Gestalt Psychology contributed to Cultural Psychology by countering the various positivistic trends of psychology, which used simple, mechanistic notions of perception, obliging research to move towards more holistic explanations. These were demands that could be met by Cultural Psychology.

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* The phi phenomenon is the illusion on which the cinema is based: the appearance of movement created by a sequence of still images.

Kurt Lewin (1890-1947)

Lewin, a German-American social psychologist, was one of the founders of group dynamics, group-learning, organisational development theory and action research.

Kurt Lewin was born in 1890 in Mogilno in Poland, but moved to Berlin at age 15. He entered the University of Freiberg in 1909 to study medicine, but transferred to the University of Munich to study biology. Around this time he became involved in the socialist movement. His particular concerns were the combating of anti-Semitism, the democratisation of German institutions and improvement of the position of women. Along with other students he organised and taught an adult education program for working class women and men.

While working for his doctorate at the University of Berlin under Stumpf, he developed an interest in Gestalt psychology. In 1921, he joined the Psychological Institute of the University of Berlin, where he lectured in philosophy and psychology. His work became known in America and he was invited to spend six months as a visiting professor at Stanford (1930). Lewin worked briefly with the Frankfurt Institute for Social Research, but the political position worsened in Germany, and in 1933 he emigrated to the US.

At the University of Iowa he undertook research linked to the war effort including a study of troop morale, psychological warfare and reorienting food consumption away from foods which were in short supply. At the same time he spoke frequently on minority and inter-group relations and worked with the American Jewish Congress in New York and was involved in studies of religious and racial prejudice. In 1944, he was a founder of the Research Center for Group Dynamics at MIT. In 1946, working with community leaders and group facilitators, he developed the idea of 'T' groups or 'basic skill training groups'. This theory was concerned with the process of group learning, change management and collective decision-making. Lewin's ideas drew from Gestalt psychology and parallels many of Dewey's ideas about group learning.

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It can be seen that the beginnings of Cultural Psychology emerged from German science on the foundations laid by Classical German philosophy. Just as the sciences differentiated themselves from philosophy and the human sciences differentiated themselves from the natural sciences, the best of natural science and philosophy was

applied to the solution of problems of the development of thinking. As early as the 1850s, Helmholtz had established that sense perception entailed the interpretation of signs, as different from the object represented as a person's name is different from the person. Dilthey had demonstrated that the breadth of human psychology had to be studied in real life, and not just in the laboratory. Wundt meanwhile advocated two psychologies, one experimental and the other cultural.

So after Hegel's death, science in Germany turned to practical investigation, observation and experiment to solve problems of the development of the mind. This step was associated with considerable difficulties in disciplinary specialisation and a struggle to simultaneously develop a coherent view of the human condition, whilst pursuing detailed study of particular problems. Cultural Psychology has its roots in this unbroken effort.

French sociology

Jean-Jacques Rousseau (1712-1778)

Rousseau was on the Left Wing of the French Enlightenment, Deist (God did not interfere in the world after the act of Creation), Dualist (in relation to thought and matter), Sensationalist (sensations the only source of knowledge), most renowned for his social theories, including the "social contract" and private property as the source of inequality.

Along with Diderot, Voltaire and others, Rousseau laid the theoretical foundation for the French Revolution. Rousseau's contribution to philosophy as such was modest, but he was the foremost social thinker of his time.

Rousseau's ruthless and thoroughgoing social criticism made an important contribution to paving the way for philosophical materialism to break out of the mechanical view of the relation between consciousness and Nature which predominated up to that time. Descartes, Bacon, Hobbes and Locke all saw only an individual human animal perceiving Nature via their senses. Under these conditions, the origin of concepts is mystified. While he emphasised the need to live and develop in conformity with Nature, Rousseau broadened the vision to see human beings as social products.

In 1754, Rousseau published "Discourse on the Origin of Inequality Among Men," showing how social conditions, in particular private property, lead to inequality and the consequent social ills, creating a tradition of looking for the source of illness in social relations, rather

than in biology. "Emile" (and the later "Sophie") are unstructured works in which Rousseau uses narrative and dialogue with a fictitious son (and daughter) to expound his theory of child development, pedagogy and sociology. He shows how upbringing and social environment shape a person's personality and views.

Emile Durkheim (1858-1917)

Durkheim was the founder of the school of French sociology. His studies of suicide, religiosity, etc., opened a window on social roots of psychological problems. Durkheim laid the basis for the structuralist school in sociology. Initially, Durkheim was a follower of Auguste Comte's positivism, emphasising the need to study society as a particular kind of collective consciousness whose laws differed from those of the individual psyche, which develops within a social environment. He highlighted population density, means of communication and collective consciousness as the chief factors in social development.

Born into a poor Jewish family in Paris, Durkheim excelled at school and gained entry to the prestigious École Normale Supérieure. Meeting Jean Jaurès while boarding in Paris he soon abandoned his religious upbringing and developed reformist beliefs. At the École Normale he earned a reputation as an extremely able and iconoclastic student. Graduating in 1882, he took a year's leave from teaching to pursue research in Germany in 1885, where he met Wilhelm Wundt. In 1887, he was appointed to the University of Bordeaux, and taught social philosophy there until 1902, before returning to take up a position as a full professor at the University of Paris.

Although Durkheim was familiar with several languages, he travelled little and never undertook any fieldwork, his theoretical studies being entirely based on the reports of anthropologists, travellers and missionaries.

Durkheim's mission was to overcome the broad and deterministic generalisations which were characteristic of the founders of sociology, such as Auguste Comte and Herbert Spencer. But further, he found that the unhistorical, analytical approach of the 'second positivism' of his time, represented by people like Ernst Mach, quite unsuited to the solution of the problems of sociology. Durkheim held that reality is understood only by means of *concepts* which are *social* constructs. In his criticism of James' and Dewey's Pragmatism, Durkheim dealt with how myths, which may have no practical or scientific validity in themselves, may nevertheless provide a conceptual approach to

grasping reality, and he rejected what he saw as the Pragmatists' dismissal of truth as simply individual utility.

The Second Empire, which collapsed after the French defeat at the hands of Germany in 1871, seemed to Durkheim a period of levity and dissipation. On the other hand, he viewed the Paris Commune as senseless destruction and evidence only of the alienation of the working classes from bourgeois society. The bloody repression that followed the Commune he took as further evidence of the ruthlessness of capitalism and of the selfishness of the bourgeoisie. The subsequent resurgence of nationalism and anti-Semitism convinced Durkheim that progress was not the necessary consequence of the development of science and technology, as most Positivists of the time had assumed, but on the contrary, the growth of technology and mechanisation undermined society's ethical structures.

Durkheim made a study of suicide, and observed that an individual who was closely integrated with his culture, was less likely to commit suicide, and consequently, what appeared to be the most individual of actions, could only be explained through social forces. Increasingly through his career, Durkheim focussed on education and religion as the two most important institutions required for stability while society underwent such deep transformations. His 1915 work on the totemic system in Australia also brought him wide recognition.

Just a few names will be mentioned from the broad sociological movement which continued the work begun by Jean-Jacques Rousseau and put onto a modern scientific foundation by Durkheim.

Pierre Janet (1859-1947)

French psychologist who studied under Jean-Martin Charcot at his Psychological Laboratory in Paris and anticipated many of Freud's ideas. He was one of the first to draw a connection between events in the subject's past life and his or her present day disturbance, and coined the words 'dissociation' and 'subconscious'.

Marcel Mauss (1872-1950)

French sociologist, Mauss a nephew of Emile Durkheim, and a founder of modern anthropology. He was a socialist who worked with Jean Jaurès and Georges Sorel. His most famous work was "The Gift" (1923), an inspiration for the work of Claude Lévi-Strauss.

Henri Wallon (1879-1962)

Wallon was a French Marxist and child psychologist. He applied Freudian and Hegelian ideas to the study of development, in contrast to Piaget's Kantian approach.

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The principal contribution of French science to Cultural Psychology was to trace how social conditions are manifested in the most inward and private experiences of human beings. They taught that to understand the human mind means first and above all to understand society. German science had indicated in general terms that culture and social relations had to be included in Psychology, but Marx and Weber notwithstanding, Germany did not provide the conditions for the social sciences to flourish. Until the last decades of the 19th century, Germans were spectators of history, not its makers.

It was the French who had tackled their problems by changing society. As a result, they made real headway in investigating the role played by social relations in the formation of the human personality. Durkheim traced scientific thinking back to its roots in religion, myths and mysticism, and provided important insights into the origin and nature of concepts. The French were the supreme social thinkers of time. They created all the ideals of modern democratic Europe and following the Great Revolution of 1789, made and remade their society by revolutionary means almost continuously for the next 100 years. These experiences bred a disposition to seek the solution to problems by social transformation, rather than in the reform of the individual human being.

American Pragmatism

The third important source of Cultural Psychology comes from America. More than 9,000 Americans attended university in Germany during the nineteenth century, providing most of America's academic leadership. Although the roots lay in Europe, it was the Americans who first gave a definite shape to Cultural Psychology, and did so as part of a distinctively American philosophy, Pragmatism. Pragmatism was carried along by a broad social movement – the Progressive Movement of the late nineteenth and early twentieth century.

A number of conditions conspired to form American Pragmatism (Menand 2001). At least well up to into the nineteenth century, America drew its ideas from Europe – Britain and Germany in particular – but every idea imported into the New World was subject

to the test: "does it work?" The Americans showed a readiness to subject what was appropriated from Europe to pragmatic revision to suit their own conditions. It was the American Civil War of 1861-1865 which catapulted the United States into modern finance capitalism. The modern conditions unleashed by the Civil War, and the *reaction* to these conditions as well as the national bloodletting itself, on the part of a group of the intellectual elite in the Boston area grew into what would become American Pragmatism, as a philosophical, psychological and social movement.

As Louis Menand (2001) tells it, although there was no slavery in the North, it was by no means the case that there was universal and strong sentiment for a Crusade against slavery. The great majority would have been happy to let the South go its own way. In the end it was a provocative act by the Confederacy which triggered hostilities. But not only the slave-owning system in the South, but the whole of the beliefs and assumptions of the pre-War Northern elite was discredited in the minds of many by the Civil War. It was moralistic ideologues, the Abolitionists, who had drawn the country into an protracted and unspeakably bloody orgy of fratricide. This opinion may seem odd from this historical distance, but it was justified by the fact that no kind of emancipation resulted for the Negroes, who shared in none of the benefits and rights of American social and political life until a century later. So to these people, ideas were dangerous things, if pursued with too little regard for the opinion of others or awareness of the possibility of error. This disenchantment with idealism and the violence they associated with it, was a major element of what emerged as Pragmatism at the end of the nineteenth century.

Whether as a reaction to the Civil War, the legacy of religious refugees from Europe, or due to the outlook of a New World settler nation, Pragmatism was born with an innate distrust of overall theories of reality. The founders of American Pragmatism held that there are no deterministic laws whether divine, natural or social, and that natural and social life is a series of accidents and adjustments. The truth is not some hidden law or principle acting from behind experience, but rather truth resides in experience itself. This conclusion equally followed as a reaction against the kind of social Darwinism of people like Herbert Spencer, who had transformed Darwinian statistical mechanics into a fatalistic law.

The Pragmatists believed in tolerance, both in the sense of allowing for a margin of error in their own actions, and in the sense of tolerance for the views of others. While this is clearly a liberal philosophy, it did

not mean laissez faire economics, and nor was it individualist. On the contrary. They saw thinking as a collective activity, and that was a prime reason for tolerance of a diversity of opinion, for it was only through freedom of enquiry that truth could be determined. So individualism was not counterposed to community, but rather community flourished through the free expression of individuality and individuality flourished through community.

Among this group there were four figures whose impact on the development of Cultural Psychology are particularly noteworthy.

William James (1842-1910)

James' father was not only hostile to the established church, he hated all kinds of institution and so he never kept his sons in any one school for more than a short time before moving them to another school or another country (Menand 2001). William James would visit Europe 14 times during his life. This, combined with the fact that William was pathologically unable to make up his mind and settle on a belief or a choice of career, meant that his education was disorganised and spread across a range of disciplines. Although James did ultimately complete a degree in Medicine, as a young person, he switched from painting, to science to chemistry to anatomy to natural history to medicine to experimental psychology to philosophy. He thus acquired a unique education for a time when specialism had become the norm. He was appointed instructor in anatomy and physiology at Harvard in 1873, assistant professor of psychology in 1876, assistant professor of philosophy in 1881, full professor in 1885, chair in psychology in 1889, returned to philosophy in 1897, and emeritus professor of philosophy in 1907. James chose his philosophical position pragmatically. He discovered early on that in order to live, it was necessary to settle on some belief, even if you cannot fully justify that belief. Despite his dedication to science, James remained a believer in life after death and took an interest in all kinds of spiritualism and mysticism to the end of his days.

While in Germany in 1867-68, he failed to secure a position with Helmholtz or Wundt, so spent his time at a spa in Bohemia, reading Goethe. Nonetheless, James was able to establish the first psychology laboratory in America, at Harvard in 1875, at a time when he was involved with the physiology of perception. But James gave short shrift to the practices dominating the New Psychology, which he dismissed as "brass instrument psychology." For example, in relation to the measurement of reaction times, he found that "behaviour is a

matter of the relation of the whole organism and the whole situation," it cannot be broken down into parts, as Wundt and Titchener had wanted, and depended on the context. James established himself as the leader and representative of the New Psychology in America, while remaining set against the positivist, analytical approach which predominated in experimental psychology. James also followed the work of Pierre Janet, and maintained friendship with most of the leading figures in European science and culture, including Carl Stumpf, Henri Bergson, and many, many others.

In 1890, James wrote "Principles of Psychology" and in 1898, gave a series of lectures at Berkeley based on this book, in which he introduced "Pragmatism" to the world. James credited Charles Sanders Peirce with coining the term Pragmatism. Peirce had defined Pragmatism in 1872 as follows: "Consider what effects, which might conceivably have practical bearings, we conceive the object of our belief to have. Then, our conception of these effects is the whole of our conception of the object." Peirce gave the name of "Pragmatism" to this position, taken from Kant, who says in "The Critique of Pure Reason": "Such contingent belief, which yet forms the ground for the actual employment of means to certain actions, I entitle *pragmatic belief*." Or as Peirce had put it, a belief is what you are prepared to act on. This is pragmatism, and it was a view Peirce shared with a whole group of associates. Peirce was not anxious to claim credit for this idea as James had popularised it, and called his view instead: "pragmaticism."

James presented Pragmatism in the formulation of the legal theorist, Wendell Holmes Jr., that judges do not decide most cases by reference to principles, but on the contrary, the principles are formulated *post facto* to rationalise a decision which had been worked out on the basis of "experience." There is no noncircular set of criteria for knowing whether a particular belief is true, no appeal to some standard outside the process of coming to the belief itself (Menand 2001). Concepts therefore could not be seen as any kind of representation of something existing independently in the material world, but rather existed only in and through human activity, in the most general sense. At the same time, this approach demonstrated *why* people must take it that objects exist independently in the external world and are subject to causation and knowable forces. These lectures turned Pragmatism into what became virtually a social movement, embraced by the Progressive Movement, and forming the guiding philosophy for a uniquely American style of communitarian liberalism. It was William James'

psychology which provided the key inspiration for Vygotsky's critique of the physiological behaviourism favoured in the early Soviet Union.

Charles Sanders Peirce (1839-1914).

Peirce was a contemporary of James and played an important role in the early discussions which gave rise to Pragmatism. Peirce's father had been a talented mathematician, and the son inherited his talent for logic along with an insufferable arrogance. Peirce was a misanthrope in fact. Leaving aside romantic infidelity, he was a spendthrift incapable of living on any income, incapable of holding down a job or completing any task he set himself and systematically alienated all his friends. He came close to dying in destitution before William James was able to rescue him, assisting his wife to manage his affairs for him. He never managed to present his ideas in any publishable literary form due to an inveterate tendency to take tangents and tangents off tangents. Fortunately, copious manuscripts of his work have survived, and much of his thinking has been preserved.

Over and above the impetus he gave to Pragmatism as such, he developed a brilliant and original theory of semiotics, which overcomes a number of fundamental problems of philosophy. According to Peirce, both Nature and mind are constituted by 'semiosis', or sign-activity. His semiotics uses a triadic structure: a *sign* which indicates an *object* to an *interpretant*; the interpretant is not to be understood as a subject, but rather is itself just another sign. This system allows an ontology, an epistemology and a logic to be developed on the same monistic foundation, doing away with the Cartesian dichotomy which affects, for example, the semiology of Saussure and the physiological psychology of the time. Peirce's semiotics also provided an approach to understanding how a coherent universe can emerge out of chaos, providing a response to the determinism referred to above. Peirce's semiotics also creates open-ended lines of enquiry due to its mediational structure. Perhaps Peirce's inability to follow any line of thinking to the end was a perverse reflection of this semiotic structure?

George Herbert Mead (1863-1931)

Mead had studied with Wundt and Dilthey and at Harvard where he met William James, and was tutor to James' children. He joined his close friend, John Dewey at Chicago in 1894, presenting lectures on 'social psychology', based on the idea of the gesture as the

prototypical action, equally social and physiological. He also developed a critique of individualism in psychology. Mead explicitly set out to create a dialogical approach to personality development based on the master-servant dialectic in Hegel's "Phenomenology." To do this he took the person as a subject/object which he cleverly called 'I/Me'. The I, or subject, observes itself, i.e., Me, in the mirror of the reactions of other people with which I is interacting. This mediated formation of self-consciousness had been developed earlier by W. E. B. DuBois, an African-American philosopher who studied the development of self-consciousness among 'blacks' in response to how they were treated by the people around them. Mead spawned the school of Symbolic Interactionism.

John Dewey (1859-1952).

Dewey was a generation younger than James, Peirce and Holmes, the generation who founded pragmatism, but he would become America's foremost public intellectual and advocate of Pragmatism up to the Second World War. Dewey was a leader of the Progressive Movement and an active participant in all the public affairs of the country.

The young John Dewey received his training in philosophy at the University of Vermont under Henry Torrey who was a proponent of a peculiar local variety of Hegelianism which used Hegel to 'reconcile' faith and reason. The holistic worldview that he acquired from Hegel remained with Dewey throughout his life. When Dewey arrived at John Hopkins, he chose to study under the Hegelian George Morris. Every one of the 53 professors at John Hopkins had studied in Germany, putting this university at the cutting edge of American philosophy. Dewey also studied under G. Stanley Hall, a physiological psychologist who had studied under Wundt and Helmholtz and had also studied Hegel and Goethe and had worked with James. At age 35, Dewey became chair of philosophy at the University of Chicago, and it was here that he developed the views for which he became known in the midst of the tumultuous birth of modern industrial America in Chicago of the 1890s with its poverty, rapid industrialisation, social conflict and labour struggles.

At Chicago, Dewey taught a course in psychology to teachers, and this inspired him to establish an elementary school which he saw as a *philosophy laboratory*. His school was known as the Laboratory School, for the purpose of exploring the 'unity of knowledge', which Dewey conceived of as knowledge inseparably connected with doing. Thus school learning was inextricably bound up with participation in

day-to-day tasks, chemistry was learnt as an extension of problems which arose in cooking. The whole academic curriculum was continuous with practical, goal-directed life activity outside school. Arising from this experiment, he published his most famous book, "School and Society." The whole experience of the school was an experiment for the development of his philosophical ideas. Philosophy must be an experimental science like any other, responding to the problems of social life. On the basis of these insights, Dewey took the vision he learnt from Hegel to a vision in which practical human activity took the place of Spirit. From this flowed important insights into social problems, conflict resolution, group problem-solving, group dynamics, education, democracy. Dewey provided a social and philosophical foundation for the ideas that James had developed in his critique of the New Psychology and his development of the pragmatist theory of knowledge.

In 1891, following the publication of James' "Principles of Psychology," James wrote to Dewey, sending him a copy of an essay he had written on Leibniz, to which Dewey responded with admiration. Over the following decade the philosopher and the psychologist became closer, in realisation that they were both playing a leading role in what had become a veritable social movement, and thereafter remained in constant communication.

Dewey's Critique of the 'Reflex Arc'

Following James, Dewey made a critique of psychology in which he took up the concept of *attention*. Like James, Dewey said that the *act* (of attention) was a *unit of analysis* and could not be further broken up into parts without losing the unity which had to be understood. To this end, in 1896, he published a critique of the fundamental principle of Wundt's psychology, the 'reflex arc', in which a sensory stimulus causes an idea, from which flows an action oriented to the sensation. But Dewey pointed out that the analysis of the whole act into a series of stimulus-idea-response links is possible only in retrospect, after the completion of the act. In reality it is an *unbroken circuit*. Further, Dewey said that the action towards the stimulus is really *prior* to the sensation. In other words, that perception is an *active* process of appropriating from the environment through activity.

> the sound is not a mere stimulus, or mere sensation; it is an act, that of hearing ... The conscious stimulus or sensation, and the conscious response of motion, have a special genesis or motivation, and a special end or function. The reflex arc theory,

> by neglecting, by abstracting from, this genesis and this function gives us one disjointed part of a process as if it were the whole. It gives us literally an arc, instead of the circuit; and not giving us the circuit of which it is an arc, does not enable us to place, to center, the arc. This arc, again, falls apart into two separate existences having to be either mechanically or externally adjusted to each other. ... It is the circuit within which fall distinctions of stimulus and response as functional phases of its own mediation or completion (1896 PJD: 140/147).

A person is always already doing something. In the course of their activity an act generates a sensation, that is to say, an *unexpected* reaction from the environment. This sensation, which is the consequence of and forms part of the act, is reflected on, and the person modifies their action. The circuit thus begins and ends with the action, which is primary, while the sensation is secondary, in a continuous circuit which makes up the activity of a person inquiring into their environment, simultaneously doing and suffering, developing their consciousness by learning to foresee the consequences of their actions.

Dewey's Concept of Experience

Beginning from this concept of the fundamental unit of human action, Dewey created a concept of 'Experience' which is the irreducible foundational concept of his philosophy. Dewey's philosophical background included not only German Idealism, but also British Empiricism, and his concept of Experience reflects these sources. For Dewey, Experience is both: "*simultaneous* doings and sufferings" (1917 PJD: 63).

> 'Experience' is what James called a double-barreled word. Like its congeners, life and history, it includes *what* men do and suffer, *what* they strive for, love, believe and endure, and *how* men act and are acted upon, the ways in which they do and suffer, desire and enjoy, see, believe, imagine – in short, processes of *experiencing*. ... It is 'double-barreled' in that it recognizes in its primary integrity no division between act and material, subject and object, but contains them both in an unanalyzed totality. 'Thing' and 'thought', as James says in the same connection, are single-barreled; they refer to products discriminated by reflection out of primary experience (1929 PJD: 256-7).

This is the same concept as that of 'activity' introduced to Marx by Moses Hess, except that in the English language 'Experience' carries connotations which emphasise subjectivity, whilst 'activity' carries connotations which emphasise objectivity, but as used by these writers the whole point is that experience (or activity) is both subjective and objective, a unity of subject and object.

An Experience

In an essay on aesthetics written in 1934, entitled "Having An Experience," Dewey made this concept even more precise. Whereas experience is always somewhat inchoate, there are certain episodes of which we would say "That *was* an experience!" Experience "is a thing of histories [NB plural], each with its own plot, its own inception and movement toward its close, each having its own particular rhythmic movement" (1934 PJD: 555). Such an experience [NB the indefinite article] has a unity, and rather than simply terminating, it is consummated. These experiences are transformative.

> The existence of this unity is constituted by a single *quality* that pervades the entire experience in spite of the variation of its constituent parts. This unity is neither emotional, practical, nor intellectual, for these terms name distinctions that reflection can make within it. In discourse *about* an experience, we must make use of these adjectives of interpretation (1934 PJD: 556).

Such an experience joins the action and its consequences, and is a transformative learning experience. Dewey deals with 'an experience' under the heading of aesthetics, understanding that artistic production and aesthetic consumption are inseparable. The artist can only represent an experience by means of another experience, consequently it is only in the arts that the nature of experience is fully revealed.

But once consummated, such experiences must be rendered symbolically if they are to become a concept, with an intellectual content that is distinguished from the practical and emotional origins, and in that sense 'provisional':

> Without some kind of symbol, no idea; a meaning that is completely disembodied can not be entertained or used. Since an existence (which *is* an existence) is the support and vehicle of a meaning and is a symbol instead of a merely physical existence only in this respect, embodied meanings or ideas are capable of objective survey and development. To 'look at an idea' is not a mere literary figure of speech ... if [facts] are not

> carried and treated by means of symbols, they lose their provisional character (1938 PJD: 231-2).

Consciousness, as the capacity to be aware of the consequences of one's actions, is developed through 'inquiry' into problematic situations:

> The unsettled or indeterminate situation might have been called a *problematic* situation. ... the necessary condition of cognitive operations or inquiry. In themselves they are precognitive. The first result of evocation of inquiry is that the situation is taken, adjudged, to be problematic. To see that a situation requires inquiry is the initial step in inquiry. ... Without a problem, there is blind groping in the dark (1938 PJD: 229).

Dewey differentiates scientific concepts from everyday concepts by the kind of problems they are dealing with, rather than by a difference in the kind of logic employed:

> Because common sense problems and inquiries have to do with the interactions into which living creatures enter in connection with environing conditions in order to establish objects of use and enjoyment, the symbols employed are those which have been determined in the habitual culture of a group. They form a system but the system is practical rather than intellectual. ... the meanings involved in this common language system determine what individuals of the group may and may not do in relation to physical objects and in relation to one another. ... In scientific inquiry, then, meanings are related to one another on the ground of their character *as* meanings, freed from direct reference to the concerns of a limited group (1938 PJD: 235-6).

'Concept' is not one of Dewey's words. But the outlines of a theory of concepts is clearly visible in his work, as when he says:

> [The point of view of] pragmatism [is] that general ideas have a very different role to play than that of reporting and registering past experiences. They are the bases for organizing and registering future experiences (1917 PJD: 50).

In the Summer of 1928, Dewey visited the Soviet Union including an inspection of its education system, but there is no conclusive evidence that he met Lev Vygotsky, who is the subject of the next part of this work.

* * *

Pragmatism was a product of its times, a sceptical reaction against dogmatism, determinism and idealism. Pragmatism could explain ideas as means of adaptation to the world, but not why people were prepared to die for them. Pragmatism could explain how people develop interests and pursued pre-existing goals, but was less effective in understanding why people pursued goals that transcended the conditions of everyday life (Menand 2001). This insight seemed to be the privilege of French social theory.

The Pragmatists were also unable to develop an adequate methodology for the development of a cultural psychology. Nonetheless, they laid the philosophical groundwork for such a psychology. It is noteworthy that it was not just the practicality of American thinking that brought this current of thinking to the creation of a Cultural Psychology. Pragmatism was founded by people trained in both German Philosophy and German Science, but in a situation which could hardly be more different from the conditions in 18th and 19th century Germany. These conditions facilitated a root-and-branch renovation of both idealist philosophy and analytical science, bringing philosophy to bear on problems previously confined to the laboratory.

All these currents of thinking came together in the aftermath of the Russian Revolution – classical and romantic German philosophy, Marxism, German natural science, French social theory and American pragmatism, joined up with Russian aesthetics, linguistics and phenomenology, in the creation of a school of Cultural Psychology led by Lev Vygotsky. It will be Vygotsky's development of the study of concepts which forms the remainder of this work.

Part IV. Vygotsky

Chapter 13. Concepts in Childhood

The Soviet psychologist Lev Vygotsky (1896-1934) was convinced from his observations of infants and children that perception begins its development in the new-born or infant from an initial awareness of an undifferentiated whole, the child then gradually becoming aware of a more and more differentiated whole, eventually learning to pick out individual objects. But the psychologists of his time, just like the cognitive psychologists of today and the entire tradition of analytical philosophy since Kant, had a 'bottom-up' notion of perception. They held that perception must begin from a disorganised confusion of individual stimuli, gradually joining the 'pixels' together to build up images of individual objects and thus, the relation between them, with the child able to perceive an entire situation only at the end of the development.

A well-known experiment was used to validate this conception which is widely held in analytical science. W. Stern proposed a four-stage schema (object, quality, relation, action) for the development of perception based on the experiment. A child is shown a painting and asked to tell the researcher what they see. The child is at first able to name separate objects and only much later able to describe what is happening and thus finally the situation depicted in the painting. Vygotsky cited the experiments of H. Volkelt and W. Eliasberg (LSVCW v. 5:86) which demonstrated the opposite. When asked to describe the painting in words, children who could only name separate objects, if asked to *act out* what the painting depicted were able to perform a representation of the entire situation accurately. So what psychologists were testing was not the child's perception, but their ability to bring their perception into conscious awareness and then translate it into words and articulate the words in answer to a question from a stranger – quite a different matter. And most of the works of cognitive psychology on concepts fall down on precisely this ground. Asking people to answer a questionnaire tests their written-language skills perhaps, but tells us only about one possible *realisation* of a concept in the laboratory, not the concept itself.

Nonetheless, the prejudice that perception can only occur by the joining together of arbitrarily small chunks or pixels remains deeply embedded in analytical philosophy. The great German poet and

naturalist Johann Wolfgang von Goethe was the first to challenge this prejudice, and his ideas were the inspiration for Gestalt Psychology as well as for Hegel's philosophy and lie at the root of much of the discoveries of the American Pragmatists. It seems that the analytical prejudice is not just a mistaken theory of perception, but a deeply-ingrained conviction about the nature of reality itself, as if a musical note was perceived by mentally tracking air pressure up and down 1,000 times a second and computing the dominant frequency! The decisive break of psychology from this analytical tunnel vision essentially came from outside psychology. Vygotsky was a young student of aesthetics who had been won to Marxism by the Russian Revolution and, moved by the plight of children orphaned by the Wars of Intervention, became a teacher and psychologist. He made his first public intervention in 1924.

Lev Semenovich Vygotsky was raised in Gomel, within the Jewish Pale in Tsarist Russia. He was a brilliant student, reading avidly in history and philosophy, and running a reading group amongst his school friends around issues of Jewish history (Levitin 2011). His reading evidently also included the writings of the founder of Russian Marxism, Georgi Plekhanov. Being a Jew, even as a 'gold medal' student, he was lucky to be admitted to university in Moscow to study law in 1913.

During his time in Moscow, Vygotsky was involved in ideological struggles within the domain of aesthetics, theatre and literary criticism, in which Symbolists and Formalists did battle with Futurists and Constructivists. Deeply engaged with problems of hermeneutics and semiotics as they were being fought out on the European stage, this was a formative period in his intellectual life, and culminated in the writing of "The Psychology of Art."

Graduating in 1917, and after taking a course in psychology and philosophy at the People's University of Shanyavsky, he returned to Gomel to teach literature and psychology at the school there. He also conducted classes at a drama studio and delivered lectures on literature and science. In the wake of the Revolution, he organised a psychology laboratory at the Gomel Teacher's College where he participated in the preparation of a new generation of teachers. He also wrote a manual for teachers called "Educational Psychology," a somewhat eclectic overview of the main issues and approaches to the subject at the time.

Coming from the highly politicised pre-Revolutionary struggles over aesthetics, and the real problems of education in a country shattered

by war and revolution, and inspired by the prospect of creating 'Socialist Man' in the Soviet Union, Vygotsky wanted a psychology which was up to its subject matter: the actual life of human beings, not just laboratory reactions. With early training in hermeneutics, phenomenology, linguistics, drama theory and literary criticism, rather than physiology and dog training, he approached the various currents of psychology he found around him in Russia critically. Vygotsky took an active interest in the whole sweep of science and culture, and appropriated what he needed to build a cultural psychology from wherever he found it. This approach was not well understood in that period in the Soviet Union, in which all the sciences and professions were highly politicised, Marxist orthodoxy was valued, and every theory associated with the bourgeois world was anathema. This made it difficult for people to understand Vygotsky; he could not be pigeon-holed.

The Soviet Union in the early 1920s was a cauldron of creativity, but the physical and intellectual conditions were desperately inadequate. The entire resources of the country which had not been destroyed were mobilised in a highly charged ideological atmosphere. Nothing was impossible or out of bounds. History was being made everywhere.

Early in 1925, Vygotsky set up an Institute for Defectology, i.e., for the treatment and education of children with all kinds of disability, in his home town of Gomel, and along with Alexander Luria became a student of medicine, side-by-side with teaching and research. This was soon interrupted however by a serious bout of tuberculosis, the illness which dogged Vygotsky's life and would ultimately take it from him.

On his return to activity, he began to work his way through all the current theories: Freud, Piaget, Adler, Koffka, James, ... critiquing them and appropriating the insights each had to offer. But political conditions were deteriorating. In 1931, the regime restored the pre-revolutionary curriculum in schools and new ideas were not welcome. Vygotsky worked prodigiously, as if in a hurry, and in the early 1930s gave lectures (transcribed by his students) and wrote the manuscripts in which his scientific legacy, the foundations of cultural psychology, were set down. The main works are "Thinking and Speech," "The Historical Meaning of the Crisis in Psychology," "Lectures on Psychology," "History of the Development of the Higher Mental Functions," "Problems of Child Psychology," "Tool and Sign in the Development of the Child," and "The Teaching about Emotions." The Institute for Defectology in Gomel provided a refuge for Vygotsky's

students to continue their work as the political pressure continued to mount.

Vygotsky was overtaken by a final bout of tuberculosis and died in 1934. During the following 12 months, some of Vygotsky's works were published, but political conditions rapidly darkened as the Moscow Trials got under way. Stalin had almost the entire leadership of the Soviet state, the Army and the Party denounced as saboteurs and shot. Terror penetrated every profession, every workplace, every family. Vygotsky's works were suppressed and could not even be discussed within professional circles until after Stalin's death in 1953, and remained unknown in the West until 1962.

The dominant current of psychology at the time in both Russia and the U.S. was not the study of the psyche at all, but rather behaviourism. As J. B. Watson put it:

> Psychology as the behaviorist views it is a purely objective experimental branch of natural science. Its theoretical goal is the prediction and control of behavior. Introspection forms no essential part of its methods, nor is the scientific value of its data dependent upon the readiness with which they lend themselves to interpretation in terms of consciousness. The behaviorist, in his efforts to get a unitary scheme of animal response, recognizes no dividing line between man and brute (1913).

Throughout the twentieth century several varieties of Behaviourism operated in Russia, with founding figures of the status of Pavlov, Bekhterev and Sechenov. At the time Vygotsky entered psychology, the dominant current was Reflexology which took the stimulus-response link, whether conditional or unconditional, as the basic unit of the nervous system: everything was a reflex. Vygotsky demonstrated that Reflexology was able to make only the most banal findings from its research while the actual life of human beings lay beyond its horizons.

On the other side, opposed to Behaviourism, was 'subjective psychology', that is, reliance on a subject's introspection to observe their own consciousness, an insight available only to the subject themself and made available to the researcher through questioning. Subjective psychology, chiefly represented by Wilhelm Wundt's Experimental Psychology, was rich in content, but scant in scientific credentials. In the atmosphere of post-revolutionary Russia, it was more or less dismissed as idealist and bourgeois. Vygotsky had

studied under Gustav Shpet, the Russian proponent of Husserl's Phenomenology, which took consciousness as apprehended by introspection as its subject matter, with the aim of creating an exact science of the forms of introspective consciousness. The problem is that, as Fichte had demonstrated more than a century earlier in philosophical terms, and Freud had demonstrated clinically, people are not generally aware of their own consciousness, and certainly not reliably so. The Freudian slip is evidence of what Freud called the Unconscious, which is inaccessible to introspection. Anyone who has practised music, acting, driving or other performance skills knows that as soon as we attempt to make our own thinking the object of attention, we lose the very object we wished to study. The fact is, *we cannot know our own mind*. Vygotsky concluded that what is studied in Phenomenology is *appearance*, not reality (LSVCW v. 3: 325), and therefore he had to agree with the behaviourists to the extent that introspection could not be the basis of a science (though this did not prevent Vygotsky from utilising the methods of Phenomenology from time to time).

On the other hand, it was perfectly obvious that consciousness formed an *essential* component of human life and no science of human behaviour was possible without including a concept of consciousness as the proximate cause of behaviour. Vygotsky defined consciousness as that which mediates between physiology and behaviour. "It *does not exist in reality*, but results from two non-coincidences of two really existing processes ... The subjective is appearance and therefore it does *not exist*" (*ibid.*). Science can only base itself on what exists: behaviour and physiology. Vygotsky therefore agreed with the American Pragmatists, that ideas could be imputed from the human actions in which they were implicit. On the other hand, the physiology underlying consciousness could shed further light on the means by which consciousness was realised, but in his lifetime little progress had been made along these lines. Neither physiology nor the study of behaviour could give us unmediated access to consciousness *as such*, but this was after all no different to the task of the historian, the physicist, the geologist, who must *reconstruct the object* of their science from the empirical traces given to the senses and their instruments.

In fact, the behaviourists were already using consciousness in their experiments: "Did you feel that? Tell me when you see two images," etc., etc. Not only were the behaviourists relying on the subjects' speech in reporting their reactions, and also their own speech in

directing the subjects' behaviour: "Would you please sit down", but they were *excluding* subjects' speech (as a mode of behaviour) and their own speech (as a mode of social interaction) from being taken as part of the experimental data. The normal human condition, in which all the phenomena of consciousness are manifested, is social. But the behaviourists set out, in the name of science, to exclude social interaction from their experiments, and not only did they generally fail to isolate their subjects from their source of motivation in everyday life, but they excluded the subjects' social interaction with the researcher from the experimental data.

So Vygotsky concluded that it was both necessary and possible to create a science of consciousness, and that the method of studying consciousness would be the observation of behaviour, including interactions with the researcher and with artefacts belonging to the wider culture. Only in this way could the normal interactions with other people and using language and so forth, the normal conditions under which consciousness is manifested, be reproduced in a controlled situation. From these observations, the processes of consciousness could be reconstructed.

Vygotsky concentrated on the development of children on the basis that it was only possible to understand a phenomenon to the extent that you understood it as a process of coming-into-being, rather than being limited to observation of the finished product of development. The evolutionary and historical processes of the formation of human behaviour, were simply not available for observation, but child development and rehabilitation of people suffering from various processes of disintegration of the psyche, provided the opportunity to study the mind as a process of formation. Further, in order to be able to observe the development of psychological processes in children, it was never sufficient to passively observe them. It was necessary to actively intervene in a child's development and assist them in completing tasks that they were as yet unable to accomplish. On the other hand, the study of people suffering from psychological or neurological illness or trauma, and the rehabilitation of such subjects, gave psychologists the opportunity to study psychological processes, not only in their process of formation, but also in their process of disintegration.

With this introduction to Vygotsky and his method of work, let us move now directly to his investigation of concepts.

Concepts

Vygotsky does tell us what a concept is, but he hardly puts it in bold type. In fact, most people who have read "Thinking and Speech" attentively will still be none the wiser on that score at the end of the book. Since Vygotsky's answer is also somewhat challenging, we should postpone looking at what he says a concept is, and for the moment just follow his thinking, having in mind for 'concept' just what we usually have in mind when we say 'concept'. But with one qualification.

Vygotsky distinguishes between concepts (in general) and 'true' concepts. He also talks about 'everyday concepts' or 'spontaneous concepts' in contrast to 'scientific concepts'. He is adamant that true concepts do not enter a person's thinking at least until adolescence. Before this time, the child uses thought processes which provide the basis for thinking in concepts, but which are *not yet* concepts. "At any stage of its development, the concept is *an act of generalisation*" (LSVCW v.1: 70) but it takes a decade or two for a young person to attain the kind of generalisation which adults use. Most of Vygotsky's writing actually concerns concepts which are not yet true concepts. 'Concept' may cover anything from the earliest form of generalisation that a child uses as they interact with their environment up to a true concept; all are referred to as 'concepts'. Thus, as Goethe had remarked, the same word is used for both the process and the final product.

A 'true' concept is a socially fixed and transmitted solution to some problem which has arisen in social practice in the past, not a bundle of attributes or features associated with some object. Such a bundle of attributes Vygotsky calls a 'pseudoconcept' and it is the kind of generalisation children acquire until they begin to go out into the world and become involved in the problems of social life and a profession. Children can use a word as the sign for a pseudoconcept to indicate the same object as an adult indicates using the same word as the sign for a true concept. This means that adults and children can effectively communicate with one another, except that from time to time it comes out that a child does not fully understand some concept or other, but both adult and child know what each other are talking about.

Concepts which are not yet concepts Vygotsky calls 'complexes', and the type of thinking facilitated by use of complexes he calls 'complexive' thinking. There are a number of distinct stages and lines

of development of complexive thinking which children must go through before they are able to use true concepts. I will outline these at length below, tracing Vygotsky's analysis of the development of complexive thinking.

The 'Double Stimulation' Experiment

There are two sources of information which Vygotsky draws on in this work. On the one hand, he draws on his own observation of infants and children and the reports of others, and on the other hand, a famous experiment he adapted to this purpose, known as the 'functional method of double stimulation for the study of concept formation'. The 'double stimulation' experiment allowed him to reproduce in a controlled laboratory setting, the kind of thinking and problem-solving which can be observed in the real life behaviour of children. This allowed Vygotsky to verify in a controlled, repeatable experimental setting the observations he made about the development of the real thinking of human beings in their normal, social environment. This experiment has been reproduced both in 1942 by E. Hanfmann and J. Kasanin and by P. Towsey and C. Macdonald (2009). In both cases, Vygotsky's observations were verified in very different circumstances and times.

Today's Psychology of Concepts has produced a confusing array of contradictory claims and counterclaims as to what a concept is. Is a concept a dictionary definition, a visual image, an ideal type, a link on a network of associations, a list of features, a metaphor or what? By contrast, Vygotsky traced the *development* of a child's ability to grasp the situations she finds in her environment, and as this ability develops, make generalisations which pass through a series of different modes of action from infancy to adulthood. In this way, there is some prospect of making sense of the seemingly contradictory results of the investigations and claims of contemporary psychology.

Vygotsky collaborated in 1927 with a young colleague, Leonid Sakharov, in adapting the double stimulation' experiment from one devised in 1921 by Narziß Kaspar Ach of the Würzburg School. Now Ach, and it seems Sakharov as well, took a 'concept' to be synonymous with a bundle of features, just as today's cognitive psychologists and analytical philosophers do. This has led to some confusion because Sakharov's very well-known description of the experiment and indeed the very nature of Ach's experiment itself, seems to take this for granted. The basic idea of Ach's experiment is that the subject is asked to use a word to pick out a group of blocks

sharing common features with each other but not other blocks, and thereby demonstrate that they have formed a concept of a certain type of block, e.g. the large-green blocks or the round-red blocks. The experiment allowed for no other action by the subjects and apart from the mistakes they made, and the verbalisations they uttered in response to their results, no other kind of action connected to concept formation was observable in this set up. As will be seen, Sakharov's modification of the experiment required the child to *freely create* groupings of the blocks to solve a puzzle, rather than, as Ach had required, simply *observing* and memorising a grouping made by the researcher, and this provided a much richer experimental process. But nonetheless, the experiment to some extent has built into it the kind of result which could be expected, namely grouping blocks according to their contingent attributes. In the light of broader experience with children's concept formation, this limitation of the experimental design turns out to have some justification for use with children, but we will have to return to this problem later. For the moment, we will take all such 'concepts' formed in the course of the experiment to be 'artificial concepts' since they are to be found only within the laboratory under artificial conditions and are not to be found in real life situations.

Ach used 48 blocks, each block with a unique combination of geometric shape, size, weight and colour: 4 colours, 3 shapes, 2 sizes and 2 weights. Each of the blocks was labelled with one of 4 nonsense words. The words corresponded to a unique combination of just two of the four possible type of feature.

Ach's aim had been to observe the formation of concepts from scratch under laboratory conditions, using mainly adults, but also some children. The subjects were given a period of training in which they had an opportunity to learn the nonsense word attached to each block (corresponding in fact to a specific combination of the block's features). Then a grouping of blocks was shown to the subject and the subject asked to recall the nonsense word shared by all the blocks in the given grouping. The subject's mistakes and their explanation were recorded, along with the number of periods of training and searching required to correctly solve the puzzle.

Ach's methodology had been based firstly on recognition that concepts could not be understood by simply observing the finished product, but on the contrary, it was necessary to observe the *formation* of a concept. Consequently, it was necessary to create an experimental set-up in which a concept could be formulated by a subject for the first

time, and therefore the concept had to be entirely artificial. Secondly, he wanted to study how a word took on the significance of indicating a specific combination of features or 'concept', so it would be necessary to use nonsense words given an *artificial* meaning, but which would initially have no meaning for the subject. Thirdly, the subject must be motivated to solve some kind of task, rather than relying on the false assumption that a concept could be formed and a word could acquire significance simply by repeated passive exposure and association. Thus the experimental set-up was designed so that it would be possible for the subject, by paying attention to which blocks had which name, to work out the meaning of the nonsense word, and use the newly-acquired word meaning to solve the puzzle and correctly name a group of unlabelled blocks.

Sakharov and Vygotsky found that this methodology did not fully demonstrate the processes that they were interested in, and modified Ach's procedure in favour of the following procedure. (A full description of Ach's experiment and a number of its predecessors, and Sakharov's criticisms are given in Sakharov (1928). Here I am bringing out only the points which are essential for our theme.)

The blocks are laid out in a higgledy-piggledy fashion, and the child told that these are the toys of children of a foreign land. One of the blocks is shown to the child, and the name underneath read out (say *gur*) telling the child that this is the name given to this toy in the foreign land, and would the child like to see if they can pick out which of the other blocks are *gur*. The child then picks out a group of blocks that they think are also *gur*; after each such attempt, the experimenter turns over either one of the selected blocks which is not *gur* or one of the discarded blocks which is *gur*, thus revealing the child's mistake. Thus the words used to name the various categories of block are revealed to the child only gradually. The child's first guess is made without any help from the names whatsoever, and the experimenter is able to see how the child spontaneously groups the blocks in an 'uneducated guess'. As the experiment progresses, the experimenter is able to see how the child makes use of the names given to the blocks to improve her guesses. For use with very small children arbitrary coloured shapes were used instead of words.

This allows the researchers to see how the child's spontaneous grouping of the objects of the adult world is modified by the use of symbols provided from the adult world. The child is confronted with a problem which is actually impossible for them to solve, though they make guesses according to however they make sense of what is

presented to them. The word is offered as a means of solving the puzzle with which the child is already engaged. The way the child organises the blocks into categories using the word realises the process of concept formation by means of the word. The method is called 'double stimulation' because it follows a model Vygotsky used to investigate a number of psychological functions. The subject is confronted with a task which they cannot solve (the object stimulus); they are then offered a cue, such as an *aide mémoire* (the sign stimulus), which they can use to help them in solving the task. In learning to use the sign stimulus, the child forms a 'higher psychological function' in order to solve problems which their existing psychological functions cannot solve. An example would be remembering with an *aide mémoire*, rather than having to rely simply on biological memory. This is a general model of the cultural formation of the mind. A sign from the surrounding culture is incorporated into a child's problem-solving, utilising existing psychological functions in a new combination which is both more powerful and more under the control of the subject themself as well as being adapted to the culture into which they are growing up.

So the 'double stimulation' experiment allows us to observe how a child groups blocks according to the blocks' attributes, and then modifies their categorisation by the use of the new word. I will review the results of this experiment by following the development of concepts in two parallel lines. On the one hand, I will follow observations of the behaviour of children as they grow up in their normal cultural environment, tracing the normal development of concepts in real life. On the other hand, I will follow the successive grades of concept recreated in the double stimulation experiment.

Infancy

At first, the child, an infant, is quite unable to abstract from the visual image of the blocks any of the attributes or features, and nor would they be able to make any use of the signs which have been offered to them as a means of solving the problem.

During the first year of life, a child will be quite unable to use the sign-stimulus, will not understand the directions from the experimenter and can relate to the objects only haphazardly. It is really senseless to talk of concepts at all at this stage of development. The child is in the process of developing their strength and energy and control of their own body, establishing social connections with those around them, and relates to objects in the world only via the mediating

action of other people. They do not clearly differentiate the limits of their own body or between engaging an adult for help and direct action on an object itself. But during the crisis of development which the child experiences around one year of age, when the child first begins to try to talk, then we have the first beginnings of the development of concepts. This crisis happens generally around the same time as the child makes its first clumsy efforts to walk, but the significant point is that embryonic concepts appear only at the same time as embryonic words make their appearance. (See LSVCW, v. 5: 207-241)

Nonetheless, there will be those people who insist that an infant *does* have concepts, such as a concept of their mother, as evidenced by the infant's response to its mother's presence, reaching for her breast and so on. For that matter, there are some who will insist that the fox has a concept of chicken and the chicken a concept of fox. This raises again the question of what is meant by 'concept'. Is it just a question of having a word for something? Clearly not, for I will show presently that, for Vygotsky, being able to name an object is *not* evidence of having a concept of it, at least not of a true concept. But nor is concept-use just a question of behaving appropriately in response to an object or situation, something machines and lower animals do well. A concept is a specific form of mediated activity in which the person *distances* themself from the situation, as opposed to an immediate relation of an individual to their environment: a concept stands *between* the subject and the object.

A concept is a *mediated* relationship of a person to their environment in which a word, acting as a sign for a problem or solution encountered by the community in the past, is used to organise the individual's actions, but which necessarily also includes immediate sensorimotor interactions with the environment. It is this relationship to one's own activity which is both culturally mediated *and* immediate, which is essential to concepts. But a simpler form of action which *lies on a line of development leading to true concepts*, may be described as a concept, in that most *general sense*. Infants and animals do not in general use signs to organise their activity, and insofar as animals do use signs, this behaviour cannot be further developed into conceptual thought properly so called.

But the activity of an infant only develops into conceptual thinking in this most general sense after the child has passed through a crisis which puts the child's activity on to an entirely different basis. In not fully differentiating themself from the objective world, in not fully

differentiating the objects in the world from the adults who help them with those objects, their psychological relationship to the world and their activity in the world is immediate and not mediated. In so far as their relationship to the world is mediated (for example through sensorimotor activity itself) the mediating element is their own body – grasping, crying, sucking and so on. In such a condition a child is not able to develop concepts at all. Indeed, in their first efforts at using words, they completely fail, but, as the saying goes, in order to swim one must get into the water, and once the child throws themself into speech, they begin to learn and the most embryonic phenomena of conceptual thinking can be said to have come into being.

Syncretic Concepts

When the child begins to vocalise and tries to make words, they are not at first able to form the words of the adult language and instead utter words like *poo-poo* and *ba-ba* and so on. At this very first stage it is not possible for adult carers to make any sense of what the child is trying to say. This is the beginning of what is called 'autonomous speech' (LSVCW v. 5:249). When a very young child attempts to respond to the researcher's urging to find all the *gur*, the result is that the child simply collects blocks at random, just whatever next strikes the child's eye. The following excerpt appears in the context of a presentation of the 'double stimulation' experiment with very young children.

> The first stage in the formation of concepts is most frequently manifested in the behavior of young children. Faced with a task that an adult would generally solve through the formation of a new concept, the child forms an unordered and unformed collection. He isolates an unordered *heap* of objects. The child's isolation of these objects, objects that are unified without sufficient internal foundation and without sufficient internal kinship or relationships, presupposes a diffuse, undirected extension of word meaning (or of the sign that substitutes for the meaning of the word) to a series of elements that are externally connected in the impression they have had on the child but not unified internally among themselves.
>
> At this stage of development, word meaning is an incompletely defined, unformed, syncretic coupling of separate objects, objects that are in one way or another combined in a single fused image in the child's representation and perception. A decisive role is played in the formation of

> this image by the syncretism of the child's perception and action. This image is, therefore, extremely unstable (LSVCW v 1: 134).

These are the kinds of concepts which I referred to in the introduction as syncretic concepts, that is, concepts which are not so much formed by the subject themselves, but which simply happen by, one after another, as if watching the countryside from the window of a moving train. This form of concept is also called a 'heap'.

In the second phase of development of syncretic concepts, the spatial relationship between the blocks gathered into a heap comes forward as the determining feature.

> Once again, the purely syncretic laws that govern the perception of the visual field and the organization of the child's perception are critical. The syncretic image or heap of objects may be formed on the basis of the spatial or temporal encounter of isolated elements, the direct contact among these elements, or some more complex relationship arising among them in the direct process of perception. The factor that continues to be basic to this period is the fact that the child is guided not by the objective connections present in the things themselves, but by the subjective connections that are given in his own perception. Objects are brought together in a single series and subordinated to a common meaning not on the basis of general features that are inherent to them and that have been isolated by the child but on the basis of a kind of kinship that has been established between them by the child's impressions (LSVCW v 1:135).

In the third phase of this earliest stage of concept formation, the child's entirely unstable and unconscious behaviour is unified and given some stability by the child bringing all the blocks together in a heap and giving them their name. The category of "these ones here" is at least a step towards some kind of stability, albeit entirely subjective. These syncretic concepts are the first major stage of concept formation, in Vygotsky's classification scheme. The last major stage is true concepts. The majority of Vygotsky's writing on concept development concerns the main stage in between syncretic concepts and true concepts, which Vygotsky calls 'complexes'.

It might be noted as an aside that the concepts formed in the first major stage (Syncretism) correspond well to Hegel's concept of Being, whilst 'true concepts' correspond to the third Book of the Logic, The

Concept. The intervening stage, complexes, belongs to what Hegel calls Essence, the genesis of the Concept. Vygotsky makes no reference anywhere in those of his writings which have been translated into English to the structure of the Logic, though he had closely studied Lenin's Annotations on Hegel's Logic. If he was aware of this relationship, he never said so.

Complexes

According to Vygotsky, the first phase of complexive thinking also emerges in this crisis period of the child's development. Complexes go through a process of development, in which Vygotsky identifies five different types, which do not neatly fall into phases because two parallel processes of development are at work: analysis and synthesis, and two unifying factors: function and similarity. The child must both abstract attributes of the blocks from the concrete perceptual field (analysis), and at the same time, the child must group different blocks together in collections (synthesis); and the child may do so on the basis of either functional connections between objects or sensory likeness. Also, at the beginning of the process of development, the complexes are entirely *concrete* groupings. The concept is fixed as a concrete image of just these blocks or something resembling them. By the end of the process, the child has acquired a thought form which is fully abstracted from the perceptual field and is in that sense a preconcept. But I shall outline the phases of development of complexive thinking, with the caveat, that the sequence is not stable because of the possibility of uneven development of analysis and synthesis, function and similarity.

One type of complex is called the Chain complex, and according to Vygotsky, the first to describe this behaviour was Charles Darwin, who observes his own grandson using 'words' for the first time.

> [Charles Darwin] noticed that before going on to the speaking period, the child spoke an original language. The originality consisted of the fact that, *first*, the sound composition of the words used by the child differed sharply from the sound composition of our words. In its motor aspects, that is, from articulation and phonetic aspects, that speech did not coincide with our speech. ... The *second* difference, more essential and more important, to which Darwin called attention, is that the words of autonomous speech *differ from our words in meaning also*. ... Once, on seeing a duck swimming in a pond, his grandson, whether imitating its sounds or what the adults

> called it, began to call it 'ooah'. These sounds were pronounced by the child when he was at a pond and saw a duck swimming in the water. Then the boy began to use the same sounds for milk spilled on the table, for any liquid, wine in a glass, even milk in a bottle, obviously transferring the name because there was water or a liquid. Once the child was playing with old coins with pictures of birds. He began to call them 'ooah' also. Finally, all small, round, shiny objects that resembled coins (buttons, medals) began to be called 'ooah' (LSVCW v. 5:249).

Altogether, using the 'double stimulation' experiment, Vygotsky identifies four different types before the final type of complex which he calls a pseudoconcept, which crowns the development of this stage of concept development and which we will consider last. "The foundation of the complex lies in empirical connections that emerge in the individual's immediate experience. A complex is first and foremost a concrete unification of a group of objects based on the empirical similarity of separate objects to one another" (LSVCW v. 1:137). These may be sensuous attributes of objects, functional or other contingent associations discovered in immediate experience.

The first of the types of complex is built around the perception of one object which forms the nucleus of the complex, and is referred to as an '*associative complex*':

> because it is based on an associative connection between an object that is included in the complex and any of the features that the child notices in the object that acts as the complex's nucleus. Around this nucleus, the child can build an entire complex composed of the most varied objects. Some objects may be included in the complex because they are the same color as the nucleus. Others may be included on the basis of similarity in form, dimension, or any other distinguishing feature that the child notices (LSVCW v. 1: 137).

The second type of complex is based on supplementary grouping of objects, and this is called a '*collection-complex*':

> Here, the various concrete objects are united in accordance with a single feature, namely, on the basis of reciprocal supplementation. These objects form a unified whole consisting of heterogeneous, though supplementary, parts. ...
>
> The most frequent form of generalization of concrete impressions that the child's concrete experience teaches him is

> a set of mutually supplementary objects that are functionally or practically important and unified. Sets such as the cup, saucer and spoon, or the fork, knife, spoon and plate, or sets of clothing are good examples of the kinds of complex-collections that the child encounters in his daily life (LSVCW v. 1: 138-9).

and Vygotsky was able to reproduce this kind of complex in the 'double stimulation' experiment:

> Under experimental conditions, the child selects objects to match the model that *differ* from it in color, form, size of some other feature. However, the child's selection of these objects is neither chaotic nor accidental. Objects are selected in accordance with features that differentiate them from the model (LSVCW v. 1: 138).

So the child endeavours to collect together a complete set of all the colours or all the shapes, and so on, like 'mummy bear, daddy bear and little baby bear'.

These two types of complex exhibit in the most basic form, the two fundamental psychological processes entailed in the formation of complexes and presupposed by conceptual thought. These two processes are the ability to abstract a single feature from a complex whole (analysis), and the ability to gather things together into sets of some kind (synthesis). The second type, the collection-complex, does not necessarily entail abstraction of a common feature from the individual components. What unites the individual objects subsumed in the group may be their making up a 'complete set' or their belonging to things used in the same practical task, such as eating a meal or getting dressed. What is important is the *synthesis* of this collective and its isolation. Which is the odd one out?: (hammer, nail, board, drill)? One might answer drill, because hammer and nail are used to drive a nail into the board, and you can't use a drill for that. Or one might answer board, as hammer, nail and drill all have metal in them and the board doesn't. We see two basic ways in which individual objects can be unified into a category: functional and likeness.

The following two types of complex represent the further development and stability of these processes of analysis (or abstraction) and synthesis, in which the original nucleus is left behind in the formation of the representation of a concrete complex of objects.

Firstly, the *chain complex*, described above in Darwin's observation of his grandson, in experimental conditions:

> The child selects an object, or several objects, to match the model on the basis of some type of associative connection they have with it. The child then continues to select concrete objects to form a unified complex. However, his selection is guided by the features of objects selected in previous stages of this action, features that may not be found in the model itself. For example, the child may select several objects having corners or angles when a yellow triangle is presented as model. Then, at some point, a blue object is selected and we find that the child subsequently begins to select other blue objects that may be circles or semicircles. The child then moves on to a new feature and begins to select more circular objects (LSVCW v. 1:139).

Then we have the *diffuse complex*. Here the child unites objects according to empirical connections between objects, but *extended* into domains in which the child has no practical experience. The attempt by the child to unite objects according to a common feature, therefore becomes more and more diffuse, somewhat like the family resemblance between people sharing more or less remote family connections. In the 'double stimulation' experiment:

> Given a yellow triangle as a model, for example, the child selects not only a triangle, but a trapezoid. With its sharp angles, the latter reminds the child of the triangle. Subsequently, a square is affiliated with the trapezoid, a hexagon with the square, a polygon with the hexagon and finally a circle with the hexagon (LSVCW v.1:141).

In everyday life, "What is unique to the diffuse complex is that it unifies things that are outside the child's practical knowledge. The result is that the connections which provide its unity depend on false, vague, and undefined features" (LSVCW v. 1:141).

We see here how the child's as yet imperfect ability to abstract common features from perceived objects, hold those features stable and recognise them in other objects, and synthesise collections accordingly, leads to the child forming complexes which are not yet sufficiently stable and precise to form a reliable basis for action and communication. The crowning achievement of this line of development is the pseudoconcept, the distinguishing feature of which is that the abstraction and synthesis of objects or situations is *directed*

by a word in the adult language. Here the abstraction of common features, whether from the field of practical action or from the field of sense perception, reaches a sufficient degree of precision and stability that the child is able to form groups of objects or situations which, within the bounds of their own experience, match those that adults indicate with the same word.

> The pseudoconcept is the most common form of complex in the preschooler's real life thinking. It is a form of complexive thinking that prevails over all others. It is sometimes the exclusive form of complexive thinking. Its wide distribution has a profound functional basis and significance. This form of complexive thinking gains its prevalence and dominance from the fact that the child's complexes (which correspond to word meanings) do not develop freely or spontaneously along lines demarcated by the child himself. Rather, they develop along lines that are preordained by the word meanings that have been established in adult speech.
>
> It is only in the experiment that we free the child from the directing influence of the words of the adult language with their developed and stable meanings (LSVCW v. 1:142-3).

The crucial point here is that because the child and an adult indicate the same things with the same word, not only is communication between adult and child now maximally effective, but the adult may be unaware that the child actually means something quite different:

> The child formed a complex with all the typical structural, functional, and genetic characteristics of complexive thinking. For all practical purposes, however, the product of this complexive thinking corresponded with the generalization that would have been constructed on the basis of thinking in concepts.
>
> This correspondence in the result or product of thinking makes it extremely difficult for the researcher to differentiate between cases where he is dealing with thinking in complexes and those where he is dealing with thinking in concepts (LSVCW v.1:143-4).

So difficult in fact that no cognitive psychologist or analytical philosopher before Robert Brandom has ever even noticed the difference. This point cannot be fully clarified however, until we have dealt with true concepts. For the moment, we just need to note some distinguishing features of this mode of thinking, which reaches its high point in pseudoconcepts, in which a complex has been associated

with a word from the adult language, accurately reflecting the concrete features of the objects and situations indicated by the word, within the bounds of the child's limited experience.

Firstly, the complex is composed exclusively from the empirical features abstracted from concrete practical or sensuous experience with the objects. In this sense it is like the 'concept' defined by cognitive psychology as a mirror image of a category of objects, representing the concept's 'extension', united by a bundle of contingent attributes.

Secondly, perhaps *unlike* the concept of cognitive psychology or analytical philosophy, the complex is a *concrete* mode of thinking. That is, the child who has formed a group of objects according to some common feature (for example their trapezoidal shape) does not thereby necessarily have a concept corresponding to that common feature (for example, the concept of a trapezoid). All we know is that the child is capable of picking out shapes according to their trapezoidal shape whenever new objects are present to her. That is, the abstraction process involved in singling out this feature is still merely *implicit* in the performance of grouping objects according to a complex. But an adult observer can see that the selection process is based on this or that feature. We must all have had the experience of meeting a person for the first time, and recognising them immediately as the sister of someone we already know, but without being able to say exactly what it is about the person which makes them so recognisable. Being able to make an association does not necessarily mean being consciously aware of the basis of that association.

In this precise sense, complexes up to and including pseudoconcepts are *concrete* thought-forms. Such thought-forms exist as forms only by implication, thanks to someone else observing a child's behaviour perhaps, and not as a look-up table of features or as a series of ideals or exemplars, as supposed by cognitive psychology. Nonetheless, it can be seen that in the context of an experimental set-up, a subject who is thinking in terms of complexes, may exhibit behaviour *as if* they held such look-up tables or exemplars in their mind. In this sense, for children at this stage of cognitive development, the most rigorous cognitive psychology, which does not claim the actual existence of such formations in the mind, but merely that people act *as if* they existed, is validated by Vygotsky's analysis up to this point.

Even less does use of a pseudoconcept suggest the existence of a dictionary definition, specifying in words, the necessary features of an object. This was demonstrated in the example concerning

interpretation of a painting, given at the beginning of this chapter. Being able to define a concept is a high level cognitive and linguistic task.

One final note before moving on from consideration of complexes and pseudoconcepts in particular. Although we have presented this idea chiefly in the context of child development, it is by no means the case that pseudoconcepts are solely a feature of ontogeny, that is to say, of the development of an individual person's psychological functioning during childhood. Vygotsky makes it clear that as adults, many of the words we use in everyday life are signs for pseudoconcepts, and often we do not have true concepts of the entity or situation indicated by the word in its most fully developed form. Further, in day-to-day life adults frequently make a transition *back* from true concepts to concrete concepts, in dealing with concrete instances of a concept (LSVCW v. 1:155), when the concept under which an object or situation was first understood, recedes into the background.

Also, Vygotsky points out that the development of word meaning in history, its etymology, also exhibits the processes discussed under the heading of complexes. For example, the word for raven [*voron*] is at the root of the word for black [*voronoi*], so the word for black carries traces in its etymology of a complex in which things resembling the raven by just one of its features, its black colour, took on a meaning at the centre of which was the raven. In English we are familiar with this phenomenon. Parliament, for example, is a place for talking, as suggested by the French root *parler* to talk, while the Legislature refers to the same body, but this time by the feature of being a proposer of laws, as indicated in the Latin root, *legis*. Thus the development of concepts, as indicated by the traces left in the etymology of the words acting as signs for the concept, exhibit the same features of complexive thinking. This by no means implies that the individuals who first formulated the concept thought in complexes. Not at all! The invention of concepts which enter the language and are sustained as words in the language for centuries, is the paradigm of true conceptual activity. But the traces fixed in etymology demonstrate homologous activity in the process of embedding the word in the language.

This brings to a close all that will be said here about complexes and pseudoconcepts, other than to point out that there is no road forward from the perfectly formed pseudoconcept directly to the true concept. A true concept is simply nothing to do with combinations of features abstracted form the perceptual field, even though, to recognise

something, we rely on the perception of certain combinations of features and the association of the concept with those features. As Dewey put it: "Recognition is perception arrested before it has a chance to develop freely ..." (Dewey 1934 : 570). Or we may be obliged to resort to criteria to determine a concept for the purpose of making bureaucratic decisions of various kinds. At such points we relapse from a true concept to the masquerade of pseudoconcepts and the minefield of misrecognition entailed in the use of pseudoconcepts. No amount of tweaking of contingent attributes can lead us to a definitive definition of a true concept. The move to the concept is a *leap*.

Potential Concepts and Preconcepts

Vygotsky identified two more phases in the development of thinking towards concepts which facilitate the transition to thinking in concepts. These were *potential concepts* and *pre-concepts*. These forms of action fall short of true concepts because, unlike true concepts, they are not utilised with conscious awareness. However, in other respects these forms may exhibit a sharp break from pseudoconcepts, and mark a transition from thinking in complexes to thinking in concepts. It seems that Vygotsky takes preconcepts as representing a distinct stage in the genesis of concepts, while potential concepts he sees as 'pre-intellectual'.

Potential concepts are, according to Vygotsky, pre-intellectual forms of activity which people share in common with most animals. It is like a pseudoconcept (though in animals it may not be formed under the direction of the adult human language) but it is not formed as a combination of features abstracted from the field of perception. On the contrary, the potential concept is the significance of the object, situation or event for practical action, as a sign or signal for some action which has become a *habitual* response to the *whole given situation*. That is, it has a *functional* meaning (LSVCW v. 1:158).

> If we consider the child's first words, it becomes apparent that they are similar in meaning to these potential concepts. They are potential, first, because of their *practical relatedness to a certain circle of objects*, and, second, because of the *isolating abstractions* that underlie them. They have the potential for being concepts, but this potential has not been realized. ... Earlier, we introduced examples indicating that a new word arises through the isolation of some single feature that strikes the observer and serves as the basis for the construction of a

> generalization of a series of objects that are named or designated by a single word. Potential concepts often remain at this stage of development, not making the transition to true concepts. Nonetheless, they play an extremely important role in the development of a child's concepts. It is in the potential concept, in the associated abstraction of distinct features, that the child first destroys the concrete situation and the concrete connections among the object's features. In this process, he creates the prerequisites for the unification of these features on a new foundation. Only the mastery of the processes of abstracting, combined with the development of complexive thinking, can lead the child to the formation of true concepts, that is, to the fourth and final phase in the development of the child's thinking (LSVCW v.1:158-9).

So we can see here that Vygotsky intends the potential concept as a mode of action which arises from the child's practical activity (which is how these forms may be shared with animals, who are capable of developing habitual responses to regular stimuli). In that sense, the potential concept has its partner in the collection-complex, where objects are grouped according to complementary functional significance. Because of the practical and functional significance which the child attaches to an object or situation, the potential concept can form the starting point for the formation of a true concept. The child can use the ability to abstract, fostered in the development of complexes, and the ability to be guided by the words of adults, utilised in the pseudoconcept, to fix what is to all intents and purposes a true concept. It falls short of a true concept because it is limited in its formation and use to practical interactions within the child's environment. Consequently, the child is not aware of the potential concept as a concept. It just functions as the stimulus for a conditioned reflex. Nonetheless, the potential concept bears many of the features of a true concept and may form the foundation for true concepts if freed from the immediacy of the concrete situation.

Pre-concepts form only in older children, typically those who are already attending school and being confronted with school-like tasks, or engaged in social activities including processes such as measuring, buying and selling, calculating time, and so on. Such activities oblige the child to use culturally transmitted symbols of some kind (not necessarily numbers, for example coins or measuring sticks) to carry out processes requiring the abstraction of features from a concrete situation. These will be quantities in the Hegelian sense, i.e., qualities

that which may change without changing what the thing itself is. These are the type of processes Vygotsky mentions, but I think it is likely that preconcepts are involved in learning the rules of games. This kind of activity requires the child to abstract features from a situation and treat them as an object within the bounds of a finite circle of activities or setting. In the 'double stimulation' experiment, it has been suggested that the artificial concepts created in the laboratory setting may make the transition to pre-concepts when they are used in a different context. For example, the nonsense word for round-short may be applied to candles or glasses of that shape. Towsey and Macdonald found that the success in transferring the artificial pseudoconcepts to candles or glasses increased sharply among subjects of 11- to 13-years-old. Note that by "pre-concepts" Vygotsky does not mean all those thought forms used prior to the formation of true concepts. Rather he meant just certain types of the immediate predecessors of true concepts.

Preconcepts differ from true concepts in as much as those using them are not aware of them as concepts. Initially a child learns to handle numbers without having a concept of number. But out of their earliest concept of number, as a preconcept, a true concept may be constructed, by the child becoming aware of their own mental operations using the pre-concept. And there is nothing of the shared attribute or functional relation in preconcepts like number. Children may arrive at the use of preconcepts via the use of pseudoconcepts and potential concepts, but a preconcept is already a leap from complexive thinking.

Nonetheless, it is worth pointing out that machines, as well as very young children who lack any life experience outside the family home, are capable of *logical operations* by means of preconcepts. It may be very tough, when you are playing chess with a child master, for example, a precocious 10-year-old, to say that the child has not yet mastered true conceptual thought. Or watching youngsters solving Sudoku puzzles, evidently using advanced reasoning skills, or stepping in to solve their parents' computer problems. The fact is that preconceptual thought may reach a very high level of logical sophistication without ever forming a true concept.

Logical thinking necessarily takes place within a framework of judgments which are constituted by a concept, but a preconcept is ideally suited for the display of logical thinking. By 'logical thinking' I do not mean dialectical thought, but the kind of formal logical reasoning normally intended by this term. This kind of reasoning only works within a finite world of yes/no relations, the kind of universe

taken for granted by cognitive psychology and analytical philosophy, and ridiculed by Stephen Toulmin in his "Philosophy of Science" (1953). Once the domain of reasoning is the infinite domain of human culture and history, this kind of finite, formal logical reasoning is inadequate. For that one needs true concepts.

Conclusion

What we have seen is that Vygotsky traces the development of a number of distinct psychological functions which are presupposed in achieving the ability to use true concepts.

(1) Manifested in the child's syncretic actions, is the simple ability to isolate objects from their background, name them and use this name in future interactions with their environment.

(2) The ability to isolate (or abstract) from a concrete object or situation one perceptual feature which can be used to recognise the object or situation and/or relate it to others.

(3) The ability to synthesise diverse objects and situations into collections or diffuse groupings sharing something in common, and operate with such concrete groupings by recognising members and adding new members in subsequent experience.

(4) The ability represent functional sets of objects, and isolate individual objects according to their functional significance, rather than their appearance, in some system of practical activity within the child's experience. This was reflected in the 'double stimulation' set-up by the formation of 'complete sets' of objects.

(5) The ability to use words used by adults to guide the isolation of objects or situations and their composition into pseudoconcepts – collectivities with the same reference as adult concepts.

(6) The ability to develop an habitual response to objects or situations connected to their practical significance for the child, which, should the child become consciously aware of this potential concept, may develop into a true concept.

(7) The ability to carry out reasoning operations within a finite system of relations, in which preconcepts, implicit in operations such as counting and calculating, are formed. However, the preconcept is an abstract thought-form and differs from all the earlier acts of thinking which are concrete.

As each of these psychological functions mature, we are able to engage in the various types of action to which Vygotsky has given names, as types, stages and phases in the genesis of concept formation,

and reproduced in the laboratory using the functional method of double stimulation. Each ability evidently entails distinct neural substrates and modes of activity, and all are presupposed in the formation of concepts. Probably the first six of these abilities are accessible to animals other than humans. Many research projects are suggested by these observations of the genesis of concepts in children by Vygotsky.

But up to this point, I have not been able to explain what a true concept is, so the reader might justifiably feel that a degree of unclarity remains with what I have said about complexes, pseudo-, potential and pre-concepts. All that can be said at this point is that Vygotsky was quite insistent that true concepts are inaccessible to the child prior to adolescence. I must now turn to the question of true concepts.

Chapter 14. Vygotsky on 'True Concepts'

While Chapter 5 of "Thinking and Speech," Vygotsky's most famous work, focuses on research into the genesis of concepts in children prior to the formation of true concepts, Chapter 6 centres on the research of one of his students, Josephina Shif, into the formation of true concepts in school-age children. This chapter is a rich and complex study of concepts which covers almost the entire range of problems of concepts and their acquisition.

In line with his approach to other problems, Vygotsky did not set out to study all kinds of concept, with all the interminable problems which would arise in differentiating types of concept across such a vast and diverse domain. Rather, Vygotsky focussed on one type of concept, confident that clear results from the study of just one, well-chosen category of concept would resolve the main problems affecting the study of concepts in general.

Scientific Concepts

Cognitive Psychology took the concept of the "common object" (Murphy 2004) as its prototypical concept, but isn't it obvious that the concept of "cat" or "pencil" fails to manifest the whole range of problems of concept formation as indicated for example in the Introduction: concepts such as "mammal," "atom," "the Virgin Mary," "ambush," "differential" and so on.

By taking concepts of common objects as their prototype, cognitive psychology inevitably arrived at the pseudoconcept (described in the previous chapter) as the typical concept, and was incapable of even formulating the problem of the formation of a true concept.

Vygotsky took as his prototype of the true concept the *scientific concept*, such as acquired by an adolescent at school – the "*purest* type of nonspontaneous concept" (LSVCW v.1: 177). The scientific concept is a pure example of a true concept because, in the first place, it cannot be formed by the subject through immediate personal experience of the object. Vygotsky frequently quotes the passage from Marx's *Capital*: "If the form in which a thing is manifested and its essence were in direct correspondence, science would be unnecessary" (MECW, v.37: 804). Scientific concepts can only be acquired by instruction in science, or in the case of those already aficionados of science, from acquaintance with the scientific literature (postponing

for the moment, consideration of those rare moments when a new scientific concept is created).

But this is true also of the concepts of the Christian Church or professional magicians, or other institutions. Why are scientific concepts regarded by Vygotsky as the *purest* type of nonspontaneous concept? The scientific concept has developed over history so as to distance itself more and more from all traces of appearance and immediate perception, and integrated all its concepts more and more into a single system. Science has increasingly purged itself of cultural prejudice and sectional interests, imperfectly perhaps, but in its essence, in its tendency, science is universal. A certain *style* of science may be characteristic of a certain culture, but in essence science is universal. A scientific concept is the pure product of an institution, namely the scientific establishment. But science is unlike any other institution. Science is based on no faith, admits of no axioms, no revelations, no "clear ideas" or given datum, other than the ontological principle of the independent existence of a material world and the epistemological principle of the knowability of that material world.

This is not to say that scientific concepts are in some universal sense objectively true. Of course not. Rather, they are the product of a real institution at some particular historical juncture and are always subject to revision. But even though science remains subject to cultural prejudice and conditions, science is not conditional upon adherence to any particular faith or disposition. The point is that *more than any other type of concept* they are not only products of an institution and *independent of immediate personal experience* of a relevant object, but exist only within an entire system of interconnected concepts, outside of which they are meaningless, and presuppose no appeal to moral values or any other kind of intuition or authority. So the scientific concept, more than any other, is a "nonspontaneous" concept. For the novice it is simply book learning. For these reasons, Vygotsky regarded the scientific concept as the paradigm of the true or nonspontaneous concept.

The Concepts of Social Science

Further to this, Vygotsky selected social science concepts alone for research, rather than natural scientific concepts, which, if you were looking for "pure" scientific concepts, would have appeared to be the obvious choice. Vygotsky chose social science concepts because these were most easily made the subject of psychological investigation and

facilitated comparison and interaction with spontaneous (or everyday) concepts. But these are not the only reasons.

Piaget had chosen the concepts of elementary physics and the spontaneous or "naïve" concepts which are supplanted by a knowledge of scientific physics. But there is no hard line between naïve physics and scientific physics, as was discussed earlier when we considered the work of conceptual change research. Simple concepts of momentum, conservation of matter and so on, can be confirmed in immediate experience, without reliance on book learning. But it is "book learning" which is *essential* to the scientific concept and which is most distinct from everyday knowledge. Likewise with mathematics. The elementary concepts of counting and measurement can be acquired by instruction in practical tasks, through the development of the child's spontaneous preconcepts.

The social sciences are not like this. They are connected with everyday experience only with the greatest difficulty and after considerable learning, as part of a whole system of concepts, which is exactly what characterises scientific concepts. In the Soviet Union of the 1920s/1930s, the concepts of social science were "class struggle, exploitation, the Paris Commune, bourgeois, capitalist, landowner, or kulak" (LSVCW v.1: 215 & 228). Living today, in times when the concepts of orthodox Marxism are no longer self-evidently concepts of social science, it is abundantly clear that such concepts can only be acquired by means of instruction, that they presuppose a certain level of psychological development and that they are meaningful only within an entire system of concepts. No suspicion can linger that absolute objective truth is being claimed for scientific concepts. In addition to this, children have everyday concepts of all the topics covered in the social sciences, even though the basis for a 'true' concept is outside the range of their personal experience, and a child's naïve understanding of "capitalist" may be observed even while they have learnt the scientific definition of "capitalist" perfectly well at school. So, such concepts lend themselves particularly well to psychological research.

By scientific concept I mean a concept which can only be acquired by instruction, beginning with a verbal definition, and that such concepts are essentially not given in individual experience. So it must be clear that such concepts cannot be acquired along the path blazed by the child's complexes, pseudoconcepts and potential concepts, all of which are concrete concepts which arise from the child's everyday personal experience without any conscious effort or awareness.

The Method for Investigating Concepts

The method used by Shif for the study of the development of both scientific concepts and everyday concepts in school-age children was to present the child with sentences to complete using causal (... because ...) and adversative (... although ...) clauses. In each case, the sentences were chosen from the child's own speech in everyday life or from classroom lessons. In this way, researchers could be sure that the child was both familiar with the concepts and with the relevant causal or adversative relations. Even at a time when a child is perfectly well able to use causal and adversative clauses in their own spontaneous speech and understand such sentences when used by others, they may be stumped when asked to complete a sentence like: "Kolya fell off his bicycle because ... ." They cannot consciously identify the need to find a prior cause of the event in question. Instead the child will tend to continue the narrative flow of speech with "... he hurt himself" or "... he was taken to hospital." According to Vygotsky, it is about two years after a child learns to freely use causal clauses in action that fluency with spontaneous use of adversative clauses is achieved. But completing a sentence like "Katya ate her dinner although ..." will still prove impossible for another couple of years.

By observing whether a child was able to correctly use a concept in a causal or adversative statement, provided that the child was already using the relevant relation in conversation, Shif was able to determine whether a child had *mastered the concept* and was able to use it voluntarily, with conscious awareness, in their speech. Such a determination is meaningful only to the extent that the child was already able to understand and use causal or adversative relation in spontaneous conversation.

I will return to this research presently, but for the moment it is worth noting how this contrasts with the methods used by Cognitive Psychology which invariably focused on instant responses. The sentence completion tasks oblige the child to reflect on the concept and bring out the extent to which they are consciously aware of and understand the meaning of the concept in question, rather than seeking a superficial response. Further, this research begins where categorisation tasks leave off, by investigating concepts as loci of material inference.

True Concepts and Spontaneous Concepts

In their fullest development, there is no significant difference between the concepts of everyday life and true concepts. The distinction lies

only in the origin and course of development of a concept. The kinds of concept we are dealing with here are concepts at one or another point in their development towards the mature concepts of an educated and worldly adult. The complex character of mature concepts is best revealed by understanding the various forms of concept which arise in the course of their development. At the same time, it should be emphasised that any of these forms of concept will figure in the activity of an adult citizen; our thinking is never completely purged of potential concepts, preconcepts and pseudoconcepts.

As mentioned above, the scientific concept offers the purest example of a true concept. But all other concepts which are consciously acquired through deliberate instruction in some institution where the concept is part of a whole system of concepts, reflecting the social practices of the institution in question, must be regarded as true concepts. Nonetheless, I will continue Vygotsky's practice of taking the concepts of Marxist social science as the paradigm of a true concept, and refer to them as 'scientific concepts'. This has the added advantage of relieving us of having to deal with logical positivist or analytical definitions of concepts which are to be found in natural science. Vygotsky was a Marxist, and he brought the same understanding of the concepts of social science as he brought to psychology. In a strong sense, the pseudoconcept belongs to formal logic, analytical philosophy and Set Theory, whilst the true concept and its development belongs to dialectical logic.

Vygotsky made very clear his commitment to dialectical logic both by his frequent citing of philosophical works by Engels and Lenin, in particular Lenin's Annotations on Hegel's *Logic*, and explicitly, for example when he says:

> When applied in the domain of life experience, even the concepts of the adult and adolescent frequently fail to rise higher than the level of the pseudoconcept. They may possess all the features of the concept from the perspective of formal logic, but from the perspective of dialectical logic they are nothing more than general representations, nothing more than complexes (LSVCW, v. 1: 160**)**.

Part II of this book, dealing with Hegel, may function as an introduction to dialectical logic. Dialectical logic is in fact nothing more than the art of dealing with concepts, that is, *true* concepts, rather than simplified, impoverished pseudoconcepts. This author conducted a 3-day workshop in May 2011 with research staff, in which Socratic dialogue was used to explore concepts such as Poverty,

Justice, Absolute and Relative, Cause and Effect, Dependence and Independence and so on. With an educated, philosophically sophisticated group like this it was possible to bring out the complex structure of mature concepts without any appeal to "laws of dialectics" or references to Hegel, but simply by immanent critique of the concepts taken one at a time. From the study of concrete concepts like these, one could abstract the principles known as dialectical logic. By contrast, as a school teacher, I have had occasion to teach elementary Set Theory, a surrogate for formal logic. This is an altogether different matter, with concepts such as round-black or large-square, like those used in the 'double stimulation' experiment described in the previous chapter, functioning as subject matter. Dialectical logic is the art of handling *real* concepts, as opposed to formal logic, which is the rules governing the categorisation of common objects according to yes/no attributes. Because dialectical logic was a well-known idea in the Soviet Union of 1920s and 30s, Vygotsky was able to illustrate the contrast between pseudoconcepts and true concepts.

The Concept and its Definition

One of the most difficult questions in the study of concepts is that of the relation of a concept to its definition, and it is this relation which marks perhaps the clearest distinction between spontaneous concepts and scientific concepts. In the case of everyday concepts, the definition lies only at the end of a protracted process of development. In the case of scientific concepts, development begins with learning the verbal definition. For example,

> The child formulates Archimedes' law better than he formulates his definition of what a brother is. This obviously reflects the different developmental paths that have led to the formation of these concepts. The child has learned the concept of 'Archimedes law' differently than he has learned the concept of 'brother'. The child knew what a brother was, and passed through many stages in the development of this knowledge, before he learned to define the word 'brother' (if he ever had the occasion to learn this). The development of the concept, 'brother', did not begin with a teacher's explanation or with a scientific formulation. This concept is saturated with the child's own rich personal experience. It had already passed through a significant part of its developmental course and had exhausted much of the purely empirical content it contains before the child encountered it in definition. Of course, this

> was not the case with the concept that underlies Archimedes' law (LSVCW, v. 1: 178).

It is a well-established fact that people are generally unable to define words which they use with ease in everyday conversation. This is characteristic of spontaneous concepts. On the one hand, to produce a verbal definition of a concept that a child is quite fluent in using requires a capacity for intellectual introspection not normally attained until adolescence. On the other hand, a child's first acquaintance with a scientific concept will be learning a verbal definition of the concept in school. After learning the definition and successfully committing it to memory, and being able to reproduce it on demand, the child will generally still be quite unable to apply the concept in any concrete situation.* Vygotsky illustrates the naïve nature of the child's understanding of scientific concepts in the following observation:

> Student: "Serfs were peasants who were the property of the landowners."
>
> Adult: "What was the life of the landowners like under serfdom?"
>
> Student: "Very good. They were all rich. They had ten story houses, many rooms, and were all well-dressed. They had electricity" (LSVCW v. 1: 218).

It will take a long time for the student to develop a realistic and concrete understanding of the relation between the classes in pre-Revolutionary Russia, if they ever do so, but they learn the definition of serfdom in a single afternoon at school. And indeed, an understanding of life in pre-Revolutionary Russia would be impossible without such concepts, and given that personal experience of that world is ruled out, it is only through concepts that such an understanding may be attained.

From this it should be clear that a concept differs from its definition, the definition constituting just *one possible realisation* of the concept. In the case of the scientific concept, the definition lies at the beginning of development; in the case of the spontaneous concept, the definition arises only towards the end. In both cases, the concept does not stay as it was when it is first learnt, but develops.

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* Doubtless a teacher would make use of any opportunity to build on any relevant experience that the child already has, but in the case of the pure scientific concept this is no such experience. What is described here is an ideal type of development.

Concepts and word meaning

It is not possible to *know* a concept without the use of words, so it is important to clarify the relation between concepts and that most famous of Vygotsky's ideas, word meaning – the unit of analysis for the study of verbal thinking. A word is a sign for a concept (LSVCW v.1: 26, v.4: 172, v. 5: 48, 132). (In saying this, Vygotsky also makes it clear enough precisely what he meant by 'word'). Meaning is an act of both speech and thinking. Word meaning is an act of indicating a concept to another person or oneself. The sense in which a concept is evoked is accomplished through all the expressive capabilities of language, gesture and context.

Vygotsky said that the concept is represented psychologically as word meaning (LSVCW v. 1: 169-170). But the important thing is that just as word meanings develop, concepts develop, both ontogenetically in the development of a child and historically in the etymology of a word. Note that Vygotsky is *not* saying that a child's understanding of the meaning of a word develops, or that the word has a meaning which the child gradually comes to know. Rather, he is saying that word meaning is a "*complex and true act of thinking*" (LSVCW, v.1: 169) *which develops*, and the psychological form of the concept which is indicated by the word meaning is itself also developing. A word does not itself have any meaning. People make meaning and use the word for the action of meaning-making. So that is why Vygotsky says that the concept is represented *psychologically* by word meaning. The concept is in the first place something that exists objectively, albeit implicitly. It exists in the activities of human beings and the social properties of the artefacts they use. These artefacts include of course words, and words are more or less suitable for expressing one or another meaning, according to the practice of a given language community. But word meaning is not simply objective, but as an action, word meaning is both subjective *and* objective. It is through word meaning that concepts are manifested for the person psychologically. A child's concepts, which differ from the concepts of the adult community, are more idiosyncratic and still imperfectly socialised. The concepts of the adult community, which are true concepts, are truly functions of the entire language community. The child's concepts on the other hand are more personal and underdeveloped. The child's concepts appear coincidentally with the child's first use of words, as described in the previous chapter. Adult concepts begin to emerge to the degree that the adolescent begins to participate in the affairs of the world at large.

This is how Vygotsky resolved the problem of whether concepts should be regarded as mental images, or some other kind of internal representation, on the one hand, or on the other hand, should be regarded as something "out there" in the world, something objective. A concept is evoked by an individual action, which is a more or less developed form of generalisation, manifested in word meaning, which more or less corresponds to the word meanings of adult speech, which through the actions of many individuals, sustain all the various institutions of the community.

Concepts and Problem-Situations

Concepts arise within some specific social practice in the form of a problem, and a solution (Vygotsky *CW*, v.1 123-4, 127; 1994: 257-8). In some social situations it would be more true to say that the discovery of a *solution* gives rise to the identification of the *problem*. But a concept always, in one way or another, names a problem-solution relation, a situation, and only arises in the course of an effort to solve a problem. Such problems can only arise within some definite *system* of social practices. In the case of true concepts, a new word (or new usage of an old word) enters into the discourse of the relevant social practice or institution and may subsequently make its way into the language and participate in restructuring the social practices of the larger community and everyday life.

A child's concepts also arise only in the context of the child's efforts to solve some problem, and it was this understanding which was behind the design of the 'double stimulation' experiment. Ach had also designed his version of the experiment on the understanding that the formation of a concept depends on the child's effort to solve some problem, rather than by passive association. Sakharov and Vygotsky modified the experiment so that the child could express their efforts at solving the problem practically, in the selection and arrangement of blocks and could *use* the word as part of the problem-solving exercise.

> There is no experimental support here for the old idea that the concept arises through associative processes, through the reinforcement of the associative connections that correspond to the features common to several objects and through the weakening of the connections that correspond to the features with respect to which these objects differ.
>
> Ach's experiments show that concept formation always has a productive rather than reproductive character. They show that the concept arises and is formed in a complex operation that is

> directed toward the resolution of some task (LSVCW v. 1:123-124).

In the case of the child's concept, the problem is always one arising within the social situation in which the child's needs are being met in immediate collaboration with their parents or carers, that is, more or less within the self-enclosed circle of the child's system of protection and support. If such a system of care is lacking then this is a pathological situation and concept formation will be distorted.

The true concept, however, has arisen in some situation quite remote from the individual in time and space and is brought into the present situation by cultural means, through the social fabric of the larger society. Only to the extent that the individual is engaged in the problems of the community and the various projects making up that community, does the opportunity to acquire a true concept arise. This includes practices functionally created for the induction of people into an institution or institutionalised social practice, such as formal schooling or apprenticeship in some profession.

> The tasks that are posed for the maturing adolescent by the social environment – tasks that are associated with his entry into the cultural, professional, and social life of the adult world – are an essential functional factor in the formation of concepts. Repeatedly, this factor points to the mutually conditioned nature, the organic integration, and the internal unity of content and form in the development of thinking (LSVCW v. 1: 132).

The difference is that the solution to the problem which has been posed for the adolescent is not to be discovered by the adolescent himself, but has to be transmitted to him from those who have confronted the situation previously and created the concept which encapsulates the problem and its solution. I will deal with the question of the cultural creation of true concepts in the next chapter, but a fine illustration of the origin of concepts in problems confronted earlier within a definite social practice was given in Chapter 3 when I reviewed the various distinctions in the understanding of word meaning known to linguistics. Each of the seven distinctions listed originated in a dispute within the linguistics community. In each case the dispute was settled at the conclusion of a protracted academic debate amongst linguists by the formation of two opposite, mutually constituting concepts. The conditions for the creation of these concepts simply do not exist for the person who comes across the relevant problem at some point in their professional life. They have to

be introduced to the concepts by means of instruction of some kind in which the word acts as an indispensable carrier of the wisdom of the past, around which an understanding of the concept can be organised, connecting up the concept with the whole array of concepts entailed in the relevant discipline or activity.

A child forms a pseudoconcept in order to solve some problem, solved by identifying a category of objects being referred to by adults. An adolescent who is being inducted into some profession, learns to identify a certain class of problem and the appropriate approach to resolving the problem. In both cases, it is the stimulus to solve the problem which opens the way to the formation of the concept. It should be noted however that while the problem situation constitutes a pre-condition for concept formation, it should not be seen as the *basic mechanism* of concept formation (LSVCW v. 1: 132) which is to be found in instruction. True concepts cannot arise spontaneously in response to some class of problem-situation. At the same time, *direct instruction* in a concept is impossible, and can only lead to the memorisation of a form of words.

> The teacher who attempts to use [direct instruction] achieves nothing but a mindless learning of words, an empty verbalism that simulates or imitates the presence of concepts in the child. Under these conditions, the child learns not the concept but the word, and this word is taken over by the child through memory rather than thought (LSVCW v. 1: 170).

Scientific concepts have a different relation to their object than do complexes.

> the birth of the scientific concept begins not with an immediate encounter with things but with a mediated relationship to the object. With the spontaneous concept, the child moves from the thing to the concept. With the scientific concept, he is forced to follow the opposite path – from the concept to the thing (LSVCW v. 1: 219).

The person who knows a scientific concept must make an effort to discover the object represented by the concept, which is not given immediately. Despite being familiar with the definition of the concept and its relation to other concepts, we may still be quite at sea in understanding the object being referred to, like a young medical graduate entering their first internship at a hospital. The child's complex, on the other hand, is abstracted immediately from their perception of the object, with the aid of the word.

Every stage in the development of concepts corresponds to different kinds of generalisation. We have seen this in the development of the child's concepts in the previous chapter. The true concept introduces entirely different kinds of generalisation which in general do not depend on the perceptual or other attributes of objects or events whatsoever. Concepts indicate objects according to their significance in various human projects, which may not be connected with any attribute of objects indicated by the concept. Lakoff's discussion of the meaning of the word "fake" discussed in the first chapter is a good illustration of this fact. True concepts are first and foremost units of social life manifested in the actions of individuals. They reflect objects only in a mediated way, through how the object figures in social life. Understanding of the object in accordance with a true concept is mediated by the person's participation in society.

The Development of Concepts

A concept begins with a word, but "when a child first learns a new word, the development of its meaning is not completed but has only begun" (LSVCW v. 1: 170). This applies both to the spontaneous concepts of the child and to the scientific concept of the adolescent. But the development of the spontaneous concept and the development of the scientific concept take place in opposite directions:

> The development of scientific concepts *begins with the verbal definition.* As part of an organized system, this verbal definition descends to the concrete; it descends to the phenomena which the concept represents. In contrast, the everyday concept tends to develop outside any definite system; it tends to move upwards toward abstraction and generalization (LSVCW, v.1: 168).

The experiments of Josephina Shif demonstrated that even though a child may be perfectly familiar with the concept of 'brother', they are unable to provide a satisfactory verbal definition of the word, complete causal or adversative sentences, solve problems like the 'brother's brother', and, in general, are unable to use the concept in an abstract context, for a long time. By the time a child is able to solve the 'brother's brother' the concept they have of brother is no longer a spontaneous concept, but has been modified under the influence of structural changes in their thinking, such as schooling.

Conversely, an adolescent who has learnt perfectly well the concept of dative case in German may be quite unable to apply the concept in German conversation, just as the medical student makes elementary

mistakes in diagnosis despite their familiarity with the diagnostic manual, which they manifested in their examinations. The scientific concept is acquired in the form of a verbal definition, that is to say, as an abstract definition. But a person needs to work correctly with the concept in concrete situations, recognise when it is appropriate and when it is out of place, and know how far to take a relation when confronted with a real situation – this takes time. A scientific concept may be altogether out of place in an everyday situation, as when a psychology student diagnoses their friends and family with all sorts of psychiatric disorders or a chemistry student tries to utilise their scientific knowledge in the kitchen.

This is the most striking difference between the scientific concept and the spontaneous concept: one begins with an abstract verbalism and only over time becomes realistic and concrete; the other begins in real interaction with its object and only later can the concept be applied correctly in other contexts or in the solution of abstract problems.

Shif's experiment showed that the scientific concept develops *faster* than the spontaneous concept in that a school-age child who freely uses a concept like 'brother' or 'bourgeois' but could not complete a sentence with a causal or adversative clause, acquired this ability more quickly and easily in the case of the scientific concept. This may seem surprising, as the child is far more at ease with the spontaneous concept which they have used in concrete situations from a young age, whilst the scientific concept they learnt only last week. But the point is that the child is *consciously aware* of the scientific concept (such as 'ideal type' or 'surplus value'), *as a thought form* distinct from the object it represents and which they have acquired with great effort. On the other hand, in the case of the spontaneous concept, the child is not really aware of the difference between the thought form and the object, having acquired the concept without any conscious effort, and the intellectual introspection required to operate consciously with the concept (for example completing a causal sentence) is still beyond his or her reach. This ability will appear only over time, if at all, and does not arise spontaneously but has to be acquired through some kind of instruction.

A spontaneous concept can develop towards greater degrees of generalisation, more precise abstraction of attributes and grouping of objects in accordance with more objective attributes matching with ever greater precision the categories of objects indicated in adult speech. The child learns eventually to apply concepts in situations more and more remote from the situation in which the concept

originated, gradually freeing themself from the concrete context. The final stage in Towsey and Macdonald's replication of Sakharov's experiment was the subject's ability to use a word learnt in the experiment with blocks to categorise candles. This freedom from concrete context, is as far as the child can go with the development of concepts.

The child's concept can match but cannot spontaneously transcend the kind of categorisation procedure represented mathematically by Set Theory. Nor can spontaneous concepts form themselves into a system. For the child, concepts of different levels of generality exist side by side, with the concept of 'flower' standing side by side with the concept of 'rose'. The child can correctly use the concept of flower, inclusive of rose as well as other types of flower, but cannot solve logical problems depending on the fact that a rose is a flower.

In fact, spontaneous concepts develop beyond the bounds of pseudoconcepts only by structural interaction with the development of true concepts acquired through instruction of some kind.

From what has been said, it might appear that spontaneous and true concepts are two entirely different kinds of formation, but this is not the case.

> These two types of concepts are not encapsulated or isolated in the child's consciousness. They are not separated from one another by an impenetrable wall nor do they flow in two isolated channels. They interact continually. This will inevitably lead to a situation where generalizations with a comparatively complex structure – such as scientific concepts – elicit changes in the structure of spontaneous concepts. Whether we refer to the development of spontaneous concepts or scientific ones, we are dealing with the development of a unified process of concept formation (LSVCW v. 1: 177).

Although spontaneous and nonspontaneous concepts are different in their relation to the object, and constitute two different kinds of concept, both function within a unified formation of consciousness (i.e., mind). There is mutual interdependence between spontaneous and nonspontaneous concepts, in the determination of a person's actions.

Both types of concept develop within a unified structure, and consequently, gains made in the acquisition of one type of concept cannot but influence the development of all other concepts. Qualitative developments in the use of concepts are transferred from

one kind of concept to another through structural changes in consciousness.

It is self-evident that scientific concepts cannot be acquired without the support of a child's spontaneous concepts. Everyday concepts and word meanings provide the only foundation upon which the verbal explanation of a scientific concept can be grasped. But in any case, scientific concepts cannot be grasped until spontaneous concepts have developed within the child's sphere of activity to the point where pseudoconcepts are fully developed and the child has developed preconcepts and potential concepts across a range of relevant subject matter. Scientific concepts are built on this foundation. Otherwise, nonspontaneous concepts will be nothing more than a kind of naïve dogma and verbalism.

But the interaction between spontaneous and nonspontaneous concepts also takes place in the other direction, with book learning accelerating growth in understanding of everyday concepts. This was graphically demonstrated by Shif's experiments. When young school-age children were given the test with "because" sentences, they were able to correctly complete sentences based on lesson material with scientific concepts earlier than they were able to do so with concepts taken from everyday life, but two years later, their ability with spontaneous concepts had caught up to their ability with scientific concepts. At the same age-levels, their ability with "although" sentences with scientific concepts lagged behind their ability with "because" statements. At the older age-level, however, ability with "although' lagged only slightly behind their ability with causal relations in the case of scientific concepts, whilst in the case of spontaneous concepts, it was greatly improved, but still lagged substantially behind that with causal relations.

The implication of this is that instruction in scientific concepts, which the child meets in the form of abstract, verbal definitions, as part of a system of related concepts, makes the solution of abstract problems such as the sentence-completion relatively easy. Little more than regurgitation of classroom speech is required. But this ability to move from concept to concept according to an understanding of causal and adversative relationships, acquired with relative ease in the context of book learning, is then *transferred* to spontaneous concepts. A couple of years after answering that prices rose ... because of a shortage in supply, they are able to answer that Kolya fell off his bicycle ... because he was careless.

As was mentioned earlier, the development of scientific concepts depends on the adolescent's concept moving from the pages of a book or a verbal definition, to the activity of the adolescent in a concrete situation. This means that the highest development of a scientific concept is dependent on the level of development of everyday concepts. How often do we hear that X is a very learned fellow, but lacks practical common sense, but while Y did not do well at school she has good common sense. The lack of 'common sense' is generally a symptom of insufficiently concrete thinking. A person who already has a good, practical capacity to handle complex situations intelligently, if they are able to integrate scientific knowledge into their activity, will attain the highest level of application of scientific concepts. This kind of concrete thinking cannot be attained via book learning alone.

Vygotsky calls '*actual concepts*' the concepts which arise in the course of the person's real life development in contrast to the concepts identified in experimental work such as Sakharov's. The concepts of the mature adult are 'actual', in contrast to the abstract idealised of newly learnt scientific concepts, which have not left the classroom and are untouched by experience, and in contrast to the child's spontaneous concepts, which have not left the home and are unaffected by contact with the wider world. The knowledge of the worldly and educated adult is reflective of *actual* concepts in another sense. In general, all our concepts owe their origin both to education and everyday life, and in reference to the real activity of mature adults (not their opinions about matters which are in fact outside of their experience), all concepts are of this nature and we cannot talk of two kinds of concept. That is, all our *actual* concepts owe their origin to *both* instruction *and* life experience, and in their structure demonstrate traces of both origins. 'Actual' means concepts which reflect a concrete understanding.

Conscious Awareness

The most marked difference between the true concept, including the social science concepts acquired via book-learning at school, and spontaneous concepts – pseudoconcepts and potential concepts – acquired effortlessly by the child in the course of everyday life, is that the true concept is marked by *conscious awareness* [Russian: *osoznanie*]. Vygotsky offers the following simple explanation of the meaning of 'conscious awareness':

> I tie a knot. I do it consciously. I cannot, however, say precisely how I have done it. My action, which is conscious, turns out to be lacking in conscious awareness because my attention is directed toward the act of tying, not on *how* I carry out that act. Consciousness always represents some piece of reality. The object of my consciousness in this example is the tying of the knot, that is, the knot and what I do with it. However, the actions that I carry out in tying the knot – what I am doing – is not the object of my consciousness. However, it can become the object of consciousness when there is conscious awareness. Conscious awareness is an act of consciousness whose object is the activity of consciousness itself (LSVCW, v.1: 190).

Conscious awareness is a feature not just of concepts, but of all psychological functions. In general, conscious awareness of a psychological function is attained only with a high level of development of the function. It stands to reason, that you must first be able to ride a bicycle before you can be aware of your pedalling, and the same is true of attention, memory and perception. Conscious awareness of a function is a precondition to voluntary control and thus mastery of the function.

On the other hand, true concepts are only acquired with *conscious effort*, so they are characterised by conscious awareness from the beginning. In this aspect true concepts differ sharply from spontaneous concepts, including the pre-concepts which are acquired in pre-school or early school years. Spontaneous concepts are acquired without conscious effort, and therefore without conscious awareness or the possibility of voluntary control.

It should be noted that lack of conscious awareness is quite different from Freud's concept of the Unconscious. In the example cited above, I am perfectly aware that I am tying a knot, but my attention is on the tying of the knot, not the separate operations which make up this action. Likewise with memory, at first the child is not aware of the *act* of memory required to recall something, they just know it or don't know it. But at a certain point, the child learns to remember things by applying conscious effort to recalling where he was yesterday or remembering where he might have left his socks, or committing a telephone message to memory.

In this context, we should observe that what someone thinks they are doing with a concept or how they might define it, is not at all the same thing as how they actually use the concept. Complete mastery of a

concept, and conscious awareness of its application in this or that context or mode of activity, is something which is attained only after considerable time and effort. In general, an educated adult will have only a vague notion of how they use a concept that is not within their area of professional expertise. But this is not to say that they use a concept 'unconsciously'. The verbal introspection which is required to make an object of their own intellectual activity is an acquired skill, which is built on conscious awareness, but is not exhausted by conscious awareness.

Conscious awareness is therefore not a factor characterising a child's entire psychological functioning, but is an advanced step towards volitional use and mastery of a *given psychological function*. According to Vygotsky, "when the child reaches school age, they have comparatively mature forms of attention and memory at their disposal. He has what he must now gain conscious awareness of and master" (LSVCW v.1: 189). Conscious awareness of concepts may follow on after a child has gained mastery of attention and memory.

Of course a child can remember and knows whether they remember or not, but *knowing how* to memorise is a skill which arises only later, with effort and the use of *technique*. A child can attend to something ... until they are distracted, but attending to something beyond the time in which it holds their interest is an achievement of the school-age child, and the discipline of formal schooling. Conscious awareness in respect to concepts means a capacity for verbal introspection, or *meaningful perception* of one's own thinking. Vygotsky explained it this way:

> It is well known that the most important change in external perception during [the transition from infancy to early childhood] is that the child makes the transition from nonverbal and therefore nonmeaningful perception to meaningful and verbal object perception. The same can be said of introspection at the beginning of the school age. The child makes the transition from nonverbal to verbal introspection. He develops internal meaningful perception of his own mental processes (LSVCW v.1: 190).

This much is surely clear: that the school child who learns a scientific concept in class and then does exercises with it, has conscious awareness of the concept, and the young child who as yet does not clearly distinguish between an object and its name cannot have conscious awareness of their concepts. Since an 8-year-old does know that carelessness could cause Kolya to fall off his bicycle, why is he quite unable to complete the sentence: "Kolya fell off his bicycle

because ..." and suggests instead "... he broke his arm"? He is not consciously aware of using the formal or the material inferences (see p. 64 above) entailed in the concept of carelessness, when he says in spontaneous conversation that "Kolya fell off his bicycle because he was careless," even though he knows this as a fact. If asked about it, he cannot analyse his comments down to the component concepts, just as he could not describe the actions by means of which he ties his shoelaces without turning his attention to these operations.

It is commonly held that conscious awareness marks the *beginner* stage of a psychological function, not mastery of it. Consider the case of a child speaking their native language and a child who is learning the language at school. The native speaker uses perfect grammar and is immediately aware of the foreigner's mistakes, but may be unable to distinguish (to use an example from English) between "we're" and "where" or realise that "go" and "went" have the same meaning. The child learning the language at school passes through three stages in the learning of each function. For example, in using the verb "to go" they have to make a conscious effort to remember the different forms of the word used in each tense and consciously choose each word as they speak, but they will be unaware of any mistake or idiosyncrasy in their speech. Next, the child attains "epilinguistic awareness." Now, the learner has become conscious, without being told, of having used a wrong word, and is able to correct their own mistakes, but still with conscious effort. Finally, typically about 18 months later in children learning a new language, the child reaches "metaconsciousness" of the function in question when the correct form of the verb is chosen with ease and without reflection. The sense in which Vygotsky is using "conscious awareness" applies to both "epilinguistic awareness" and "metaconsciousness," since metaconsciousness can be transformed instantly into epilinguistic awareness if, for example, something makes the speaker aware of having made a mistake. The earlier stages, including the effortful stage from which conscious awareness arises is *also* conscious awareness, since it is a necessary part of the process of development of metaconsciousness, or conscious awareness and mastery. The native speaker, on the other hand, might *never* be aware of the norms they are using.

Vygotsky criticised the claim of the Swiss child psychologist Édouard Claparède (1873-1940), who developed the view that lack of conscious awareness was characteristic only of imperfect use of a given psychological function. Claparède claimed that the more we use a given relationship, the lower the level of our conscious awareness of

it. We are consciously aware only to the extent that we are unable to accommodate or adapt, as when we trip over the kerb while walking along the footpath. The more extensively a relationship is used in our spontaneous behaviour, the more difficult it is for us to be consciously aware of it. Claparède further claimed that to become consciously aware of an operation, it must be transferred from the plane of action to the plane of language; it must be recreated in the imagination such that it can be expressed in words. The problem, according to Vygotsky, was how one could become consciously aware of a psychological function at all. Only if conscious awareness has been prepared earlier by the *meaningful perception* of the function in question, could conscious awareness and attention be triggered by some problem. Meaningful perception can only be built on functions already acquired.

> Children respond to actions earlier than to differentiated objects, but they give meaning to or comprehend the object earlier than the action. The action develops in the child earlier than autonomous perception. However, *meaningful* perception leads the development of meaningful action by an entire age grade (LSVCW v.1: 184).

By meaningful perception Vygotsky refers to the child's use of words to guide their perception of the perceptual field, and in the same way, children use words as commands to themselves, to guide their actions in solving problems and overcoming difficulties. But even the pre-linguistic infant perceives. The infant perceives holistically, and this is called autonomous perception, just as its bodily functions are called 'autonomous', in that they are regulated without conscious control. The child learns to use words to isolate various objects and analyse the situation, and in this way develops meaningful perception. This explains how it is that a small child can understand the situation depicted a painting, but cannot enumerate the objects depicted. What applies to perception of external images also applies to perception of their own mental activity.

Learning written speech is an important route to conscious awareness of concepts. Writing is an extremely abstract task, lacking an interlocutor and lacking the stimulus to speech which is provided by a dialogical situation, the writer must formulate the situation in their imagination, formulate the thought in words, also without speaking, and then identify the silent words one at a time and spell them out. By attending to words and word meanings in this way, a child learns to develop conscious awareness of concepts. Learning a foreign language, under conditions when the person already has a developed

system of meanings in their native language, but is obliged to make these meanings conscious for the purpose of learning how to express them in another language, is also a route to the acquisition of conscious awareness of concepts. A child raised in a multilingual home where there is an opportunity to learn two or more languages spontaneously, without effort, does not automatically receive this benefit. They are in a particularly good position to study language and develop conscious awareness of their concepts, but this does not flow automatically from being raised as a polyglot.

Instruction in a foreign language, learning to write and the study of one's own language all work together, interacting to foster conscious awareness (LSVCW v.1: 179). The development of conscious awareness of the concepts of everyday life in this way, interacts with instruction in true concepts, fostering the development of a more concrete understanding of scientific concepts.

Definitions

Vygotsky discussed the child's ability to give definitions of words signifying concepts with which the child was already familiar. As mentioned at the beginning of the previous chapter, the method of investigating concepts by means of asking the subject to give a definition of a concept sheds a problematic light on the subject's thinking. It tests the level of the subject's *verbal* development and/or their formal education. Giving definitions is an abstract task in which the concept is torn from its natural connections, a task which hinges entirely on the use of words. Particularly for the child, however, the concept is linked with practical-sensuous material, and children generally take as the definition of something what it does or what can be done with it. Such functional meanings are the foundation of potential concepts.

For true concepts, on the other hand, the concept is essentially divorced from sensuous material. But an adolescent who uses a word as a true concept, when asked to define it, is apt (like cognitive psychologists) to define it as a complex (LSVCW v.1: 161). In general, when asked to define a concept which they use correctly, a person sinks to a more primitive level than they exhibit in the practical use of a concept in its natural setting. At *any* stage of development, a definition is always narrower in scope than the concept itself. Vygotsky saw the definition of a concept as a demonstration of what he called the 'law of concept equivalence'. That is, that a concept (as opposed to a complex) can be expressed in an infinite number of ways

in terms of other concepts connected with it (LSVCW v.1: 158). For example, the number 1 is also the difference between consecutive numbers or the ratio of a number with itself, as well as the first natural number, and so on (LSVCW v.1: 227).* To give a definition is to give verbal expression to the connection of a concept with other concepts, as part of a whole system of concepts. Any single definition therefore simultaneously narrows the concept, whilst at the same time, expressing its connection with a larger system of concepts.

> *Only within a system can the concept acquire conscious awareness and a voluntary nature. Conscious awareness and the presence of a system are synonyms when we are speaking of concepts, just as spontaneity, lack of conscious awareness, and the absence of a system are three different words for designating the nature of the child's concept* (italics in original, LSVCW v.1: 191).

Concepts are Part of a System

Another important characteristic of true concepts of all kinds is that they are part of a *system of concepts*. The only systematicity found in spontaneous concepts, is that which is inherent in the child's immediate system of support and practical actions. But this systematicity is merely implicit in the culturally and historically determined form of life, and is *external* to the concept.

> The development of scientific concepts *begins with the verbal definition.* As part of an organized system, this verbal definition descends to the concrete; it descends to the phenomena which the concept represents. In contrast, the everyday concept tends to develop outside any definite system; it tends to move upwards toward abstraction and generalization (LSVCW, v.1: 168).

The primary means of connection of a concept into a system of concepts is relations of *generality*. For example, the true concept of 'rose' is connected to the true concept of 'flower' by the fact that a rose is a flower, and to 'camellia' by the fact that a camellia is also a flower. This relation is made possible by the fact that 'flower' is a generalisation of the various kinds of flower, and the concept of 'rose' includes within it this relation to its genera. To be clear, there is no

* The concepts of a system of scientific concepts have a hierarchy, so that not every relation between concepts may function as a definition in the narrow sense. Definition is a special case of the connection between concepts.

suggestion here that a category such as 'flower' denotes the presence of any kind of common attribute of the members of the category. Carburettor and fan belt are both automotive components, but have no particular attribute in common. Bicycle and toboggan are both vehicles, but also have little in common. Moriarty and the butler are both suspects, but have nothing in common.

This systematicity of true concepts follows from the fact that true concepts arise from problem/solution relations, which can only arise within some definite system of social practice and can only arise in the course of deliberate problem-solving activity. *There can be no contradictions without a system* and no problem other than within some system of practice or institution. Therefore, since true concepts arise and are sustained within some given project, institution or system of social practice, they constitute a system with some kind of logic.

Consequently, thinking in true concepts implies sensitivity to contradiction. Although it is not the case that logical thinking is only possible with true concepts, complexive thinking is tolerant of contradiction. Certain limited kinds of logical thinking are perfectly possible with pseudoconcepts, and pre-concepts are certainly amenable to rational problem-solving. But in general, pseudo-conceptual thought does not recognise contradiction, because every concept is a concrete thought form which is related to *its object*, not to other concepts. Conversely, true concepts are in the first place related to *other concepts*, and only mediately to the concrete object, event or situation which is their object.

For thinking in complexes, 'rose' sits side by side with 'flower', and the statement that "A rose is a flower" is like "$x = 7$" for someone who does not know algebra. Each is a pseudoconcept and is determined by a concrete image of the objects it designates in adult speech. There is no relation between 'rose' and 'flower' other than the logic of practical intelligence. Once concepts take on the significance of points or orders in a constellation of organisms either in a Linnaean or a Darwinian taxonomy, then the relation of the person to the concept and the object is changed. Now the person confronts a whole system of concepts of natural objects, and he or she must learn how to place an organism's concept within this constellation. The concept-system has intervened between the subject and object, and with it, it has brought meaning, system and the potential for reasoning and therefore contradiction.

A scientific system of nature arises for the child only thanks to instruction, be that at home or at school. More limited systemic concepts can arise where the child's own field of activity presents an element of systematicity. For example, if a child is raised in a home where he has the opportunity to disassemble and reassemble automobiles, or build model aeroplanes, it follows that potential concepts can be formed which contain already the rudiments of system. Even a spoon contains implicitly the entire culture of eating at an appointed time, at a table with cutlery. One good reason that Vygotsky chose scientific concepts as the paradigm of the true concept, is that scientific concepts, especially the concepts of social science, cannot arise spontaneously from the normal conditions of a child's life, and are thus truly nonspontaneous.

Conscious awareness presupposes being able to define a concept in terms of other concepts, and therefore the existence of a *system of concepts*. The ability to reason logically with concepts arises from the fact that all systems of concepts have arisen from traditions of practice concerned with the solution of some class of real problem. The relation between a carburettor and a fan belt is, in the first place, the logic of the interaction between the various components in an automobile. Behind that 'embodied logic', the relation between the various concepts representing automotive parts, is the problem-solving work of automotive engineers down the decades, how overheating was solved, how air was blended with fuel, and so on. In learning, not only to identify these objects by their sensuous attributes, but in learning about them, as parts of a system, the child enters into the whole world of automotive engineering. *Mutatis mutandi*, the same would go for a child raised within a hunter-gatherer community. Likewise, it is one thing to identify organisms by their sensuously given features, but *science is quite another thing*. A scientific classification presupposes entering into the problems which have confronted naturalists down the years, and how this or that feature came to be used to differentiate a species or order of organism in order to overcome some definite problem. So again, by acquiring true concepts, an adolescent does not enter into Set Theory but rather learns the logic of practice, at least insofar as it is reflected in the profession or school subjects that he or she is instructed in.

> the motive force that determines the beginning of this process and sets in action the maturational mechanism of behavior impelling it forward along the path of further development is located not inside but outside the adolescent. The tasks that are

> posed for the maturing adolescent by the social environment – tasks that are associated with his entry into the cultural, professional, and social life of the adult world – are an essential functional factor in the formation of concepts. Repeatedly, this factor points to the mutually conditioned nature, the organic integration, and the internal unity of content and form in the development of thinking (LSVCW v.1: 132).

Generalisation

> At any stage of its development, the concept is an *act of generalization.* The most important finding of all research in this field is that the concept – represented psychologically as word meaning – develops. The essence of the development of the concept lies in the transition from one structure of generalization to another. Any word meaning, at any age, is a generalization. However, word meaning develops. When the child first learns a new word, the development of its meaning is not completed but has only begun. From the outset, the word is a generalization of the most elementary type. In accordance with the degree of his development, the child moves from elementary generalizations to higher forms of generalization. This process is completed with the formation of true concepts (LSVCW v.1: 169-70).

This paragraph sums up much of what Vygotsky has to tell us about concepts: concepts are activities, not the passive result of exposure to sensuous stimuli. Words are indispensable tools of generalisation and the psychological form of generalisation is word meaning, which is itself an action, not simply a property of the word. Concepts, and therefore word meaning, are always developing, moving through various forms of generalisation.

In childhood, development primarily takes the form of mastering more and more developed forms of generalisation, as outlined in the previous chapter. However, the conventional generality of a concept does not necessarily correspond to the level of generality at which it is being used. This is exhibited in the way a child uses 'rose' and 'flower' at the same level of generality, even though the properties of the individual objects named would demonstrate that 'rose' is a subset of 'flower', this is not reflected in an appropriate relation between the concepts.

During childhood, a number of factors guide the direction of acts of generalisation. First and foremost among these is the use of words by adults in collaboration with the child, so that the child uses words to pick out objects so as to match the adults' word-use. But, nonetheless, the child only develops their word meaning in the course of solving problems which arise within their social situation, not by simply memorising what they are told. This line of development culminates in pseudoconcepts, which resemble in structure the abstract general concepts known to cognitive psychology, in that they indicate a collection of concrete objects. Complexes, as they first appear in the child's actions, do not necessarily represent the abstraction of attributes common to the objects indicated, since the ability to isolate attributes and generalise according to these attributes, develops only gradually. By the time a child has perfected their ability to abstract and isolate the attributes of objects, they are ready to form pre-concepts, by transforming these abstractions into simple concepts. But this comes after, not before, the formation of pseudoconcepts.

The other source of concepts is the child's practical intelligence which predates the child's first words but is developed through the use of words, which create the possibility of meaningful perception and meaningful actions. The child's interaction with the material world around them allows them to form potential concepts, which are spontaneous concepts reflecting their own practical activity and interaction with the world around them. Potential concepts are a limited source of generalisation according to the richness of the experience open to the child.

The kind of generalisation which is afforded by true concepts is of a different order, in that it is not possible for the child to make this kind of generalisation from their own sensuous or practical interaction with objects. Instruction and collaboration with a teacher or other aficionado is essential. Here generalisation does not arise as a result of development of the concept, but is there *from the beginning*: generalisation precedes concrete perception. The true concept represents the distilled wisdom of the past and comes to the learner via the word, as a form of generalisation, which the child is able only later to connect to the concrete objects and situations it has as its object.

Instruction must take different forms according to the type of generalisation and word meaning the child needs to acquire. A child cannot be taught about a pharaoh or Avogadro's Number by the same methods as they are taught to recognise a rose or a camellia. The kind of generalisation required has always to be kept in mind.

But the most important thing to remember about generalisation, a point which Vygotsky makes time and again, is that every generalisation makes a concept richer, not poorer.

> In contrast to what is taught by formal logic, the essence of the concept or generalization lies not in the impoverishment but in the enrichment of the reality that it represents, in the enrichment of what is given in immediate sensual perception and contemplation. However, this enrichment of the immediate perception of reality by generalization can only occur if complex connections, dependencies, and relationships are established between the objects that are represented in concepts and the rest of reality. By its very nature, each concept presupposes the presence of a certain system of concepts. Outside such a system, it cannot exist (LSVCW v.1: 224).

Conclusion

Vygotsky has approached an understanding of concepts by tracing their development, mainly in ontogeny. What makes his finding complex, is that there are several intertwining lines of development and several ideal types of concept, and every real, mature concept realises traces of each of these lines of development and the ideal types corresponding to them. Through his observation of children and his experimental work, Vygotsky has given us the processes of development of each component of conceptual activity. What we have as a result is not just a range of different theories about the nature of concepts, or conflicting hypotheses, or an empirical mixture of various kinds of behaviour: we have an understanding of the complex structure of a concept, whose separate roots can be traced and understood.

Although the pseudoconcept is the characteristic product of childhood, more generally it is the kind of concept we have of something when we have neither practical experience with something nor any knowledge of it as part of a system of concepts. So pseudoconcepts are with us for life. Further, so long as we have only an abstract concept of an object, acquired through instruction, and defined in terms of its connection with other concepts, we remain in a position where we would not recognise the object if we bumped into it in the street. Only thanks to merging with our spontaneously developed, pseudoconceptual thinking can we learn to recognise the object and

begin to merge our abstract ideological knowledge of an object with concrete experience of it.

Likewise, our first experience with system is through our practical interaction with the objects we meet in our everyday life, in which systematic relations are *built into* the objects themselves, and these objects are grasped with what Vygotsky calls potential concepts. They are 'potential' because like true concepts they are part of a system, but rather than the system of social life and institutions of the wider human society, it is the system of their own immediate practical activity. And potential concepts are spontaneous, and not used with conscious awareness.

Both pseudoconcepts and potential concepts are forms of activity which not only the higher animals but even machines can attain. Pseudoconcepts and potential concepts are acquired by habit, spontaneously and without conscious awareness, but true concepts can only be acquired with conscious effort and awareness. This is true because true concepts are part of a system of concepts, which stands between the subject and object, and in principle are independent of the sensuously given properties of the object which is given to the subject.

One of the greatest barriers to a scientific understanding of concepts in psychology is the fixed belief that a true concept is something like a Set and that formal logic specifies exhaustively the only rules for handling concepts. In Vygotsky's words:

> [T]raditional psychology acted like a slave in following the description of the process of concept formation assumed by formal logic, ... In the traditional view, the concept is the aggregate of these common features, features isolated from a series of similar objects.
>
> It is difficult to imagine a more distorted representation of the actual course of concept development. Psychologists have long noted that *the formation of the adolescent's concepts never takes the logical path depicted by this traditional scheme* and our experiments clearly support this position (LSVCW v.1: 162).

Dialectical logic is nothing more or less than the art of handling concepts, real concepts as opposed to impoverished, pseudo-concepts. This prejudice which also makes analytical science the slave to formal logic acts as a barrier to the development of all science, which is after all about nothing other than concepts. If the nature of concepts can be clarified by studying their nature directly, in the psychology of

concepts, then maybe something can be done for the development of science as a whole?

One final step to understanding Vygotsky's theory of concept remains. The whole process of development of concepts hinges around words and word meanings and the use of words in the general community, and true to his commitment to the genetic method, Vygotsky has traced this whole process of development through word meaning. But:

> As the relationships of generality change with each new structure of generalization in the process of development, they elicit changes in all the operations of thinking accessible to the child. In particular, the long established independence of the word from the remembered thought increases with the development of relationships of generality and concept equivalence.
>
> The young child is completely reliant on the literal expression of the meaning that he learns. To a great extent, the school child already reproduces complex meaningful content independently of the particular verbal expression where he learned it. As relationships of generality develop, there is an increase in the concept's independence from the word. Meaning becomes increasingly independent of the form in which it is expressed. In general terms, there is an increasing freedom of the operations of meaning from their verbal expression (LSVCW v.1: 228).

In the next and final chapter of "Thinking and Speech" Vygotsky makes clear that verbal thinking is not the terminus of the intellect, but:

> Thought is not only mediated externally by signs. It is mediated internally by meanings. The crux of the matter is that the immediate communication of consciousness is impossible not only physically but psychologically. The communication of consciousness can be accomplished only indirectly, through a mediated path. This path consists in the internal mediation of thought first by meanings and then by words. Therefore, thought is never the direct equivalent of word meanings. Meaning mediates thought in its path to verbal expression. The path from thought to word is indirect and internally mediated.
>
> We must now take the final step in the analysis of the internal plane of verbal thinking. Thought is not the last of these planes. It is not born of other thoughts. Thought has its origins in the

> motivating sphere of consciousness, a sphere that includes our inclinations and needs, our interests and impulses, and our affect and emotion. The affective and volitional tendency stands behind thought (LSVCW v.1: 282).

Vygotsky traced external speech on its journey inwards through egocentric speech to inner speech to thought, to reveal the structure of verbal thinking. At the same time, he found the source of concepts *outside* the child, in its collaboration with adults and in the community at large. Actual thought then is on an even deeper plane, but his analysis also points to the source of concepts in the wider domain of social life, which also provides the person's motivations.

In the next chapter I will very briefly present what we have learnt from Vygotsky about this question. In part the importance of this is the widely held view that Vygotsky never tackled this question at all, that this problem was addressed for the first time only by AN Leontyev and his Activity Theory.

Chapter 15. Concepts and Activity

Words play the key role in the formation of human life in general and concepts in particular, but Vygotsky is at pains to emphasise that:

> In speech ... the thought is partitioned into separate words. Thought [however,] is always something whole, something with significantly greater extent and volume than the individual word. Over the course of several minutes, an orator frequently develops the same thought. This thought is contained in his mind as a whole. ... *What is contained simultaneously in thought unfolds sequentially in speech* (LSVCW v.1: 281).

This is true of concepts. In particular,

> A true and complex understanding of another's thought becomes possible only when we discover its real, affective-volitional basis. ... Stanislavskii teaches that behind each of a character's lines there stands a desire that is directed toward the realization of a definite volitional task. ...
>
> Understanding the words of others also requires understanding their thoughts. And even this is incomplete without understanding their motives or why they expressed their thoughts. In precisely this sense we complete the psychological analysis of any expression only when we reveal the most secret internal plane of verbal thinking – its motivation (LSVCW v.1: 282-3).

So, to understand thought, and therefore concepts, we have to go behind speaking and thinking to the plane from which thought is motivated, "toward the realization of a definite volitional task." But the life-tasks which confront people are not invented by the individual. Like the cognitive content of concepts, the affective and volitional content is also drawn from *outside* the individual, through collaboration in the various projects in which an individual produces and reproduces their life and that of others.

Even though our "inclination and needs, our interests and impulses, ..." reside deep within the psyche they do not originate in biological drives, but on the contrary, like all human psychological functions, are complex structural formations, mediating attention, memory, will, perception, ... fashioned and manifested through collaboration with others in furtherance of "volitional tasks." The

tasks, whose realisation motivate our activity, have their origin in the institutions of the wider society in which we participate.

> The impelling force which determines the start of any process or initiates any evolving mechanism of behavior and propels it forward along the path of further development, is not to be found inside, but outside the adolescent and, in this sense, the problems thrown up in front of the maturing adolescent by the society around him, which are connected with the process of growing into the cultural, professional and social life of adults, are extremely important functional aspects which continually depend on the reciprocal conditionality and the organic coherence and internal unity of form and content in the development of thinking (Vygotsky, 1930: 213).

Concepts and Activity Theory

'Activity Theory' is usually taken to refer to the work of A N Leontyev (2009) and others such as Yrjö Engeström (2011), who developed his work, but not to include Vygotsky. Though he never used any name other than "Psychology" to characterise his work, Vygotsky was really the originator of Activity Theory. Admittedly, Vygotsky's writings on the original creation of concepts, as opposed to their acquisition by individuals, would make an extremely small volume. We have had to largely extrapolate from what he said about the necessity of true concepts in adult life, the circumstances in which all concepts are acquired, and his theory of child development. The point is that word meaning is to be understood not as a linguist would have it, as the property of a word, but as an *action*, and actions find their ultimate rationale not in Spirit or biology or language-games, but in activity.

Word meaning is the action of using a word meaningfully. Every word has been invested with certain affordances through its use over many years by others within the language community of which we are a part. But by using a word in a particular context, we give the word a unique meaning. Meaning has its internal aspect, connecting thought and word, and its external aspect connecting us with other people. Like all actions, it is both subjective and objective. Word meaning is an artefact-mediated action in the strict sense of the term as used in Activity Theory (Blunden 2010). Word meaning is not just any action, because a word functions as the sign for a concept. Gestures, body language, tools, clothing, and the array of other artefacts which we use to convey meaning and interact with others, do not have the same

power to signify concepts as does a word. “The meaningful word is the microcosm of human consciousness” (LSVCW v.1: 285).

But language-use cannot constitute an activity by itself. Speech, including written speech, if it is to be meaningful, must be directed towards the realisation of some volitional task, which in turn can only be meaningful only to the extent to which it furthers some project or resolves some problem arising in social practice, ultimately beyond language-use.

Vygotsky does not identify thinking with inner speech. Inner speech is a “plane of consciousness” which is to some extent open to observation, since we can observe its formation in childhood and it is intelligible via introspection. Inner speech is “pure meaning,” “idiomatic,” “almost without words” and “predicative” (LSVCW v.1: 275, 280).

Via word meaning, words function as a connecting link between thinking and behaviour, such as speech. Word meaning is the psychological form taken by concepts, since a word functions as a sign for a concept, and the concept is a unit of thought. But as Vygotsky pointed out, when a concept is completely assimilated in thought, it becomes independent of the particular signs used to indicate it, just as a true concept can be defined in an infinite number of ways.

Thus, the processes connecting thought and words are extremely complex and dynamic. Equally, the relation between actual word-use in the course of social interaction, and the concepts for which the words are signs, is extremely complex and dynamic. But concepts are activities which *transcend the immediate context* in which words are used, just as the actions by means of which any project is realised are meaningful only in the light of the project being realised. A house is built by a bewildering variety of disparate actions and interactions, which nonetheless make sense as part of the completion of the house. The relation between any activity and the component actions through which it is realised is complex, and so is the relation between word meaning and concept. A concept is only really understood when we can identify its source, and the relation of all the actions by means of which it is realised will make sense.

We can observe the development of word meaning, a unit of thinking, and “psychologically, the development of concepts and the development of word meaning are one and the same process” (LSVCW v.1: 180), remembering that “thought is always something

whole" (LSVCW v.1: 281), we can surmise that concepts are units of thought. The relation between a word meaning and a concept is the same as that between an action and an activity.

> The unit (or aggregate of units that comprise the content of the thinking during the transitional age), the simplest action with which the intellect of the adolescent operates, is, of course, not a representation, but a concept (LSVCW v.5: 50).

Concepts and Predicaments

Concepts always arise from some kind of *predicament*, sometimes indicated by the problem (e.g. sexism) and sometimes by the solution (e.g. freeway). A concept arises along with a word coined for it, at some cultural and historical conjuncture, within some social practice, in which the problem suddenly becomes the focus of action. Men have behaved for millennia in a way we now characterise with the concept of 'sexism', but it was only in 1968, in the wake of the civil rights struggle, under conditions when the paternalistic institutions which had justified this behaviour were becoming unviable, that the problem was named, and became a focus for the women's liberation movement. 'Freeway' originated in the US in the 1930s, together with the promotion of the automobile, the growth of the dormitory suburbs they serviced and the cheap labour provided by the Depression. Once a word has been coined and passed into the language, it may long outlive the particular circumstances which necessitated the coining of a word. Sometimes, changing circumstances mean that the word falls out of currency and the concept is lost or relegated to the history books. Sometimes, in the process of migrating out of the social situation in which it arose, the concept mutates and along with that mutation, word meanings change, often by analogy or metaphor with a former problem, or as Vygotsky observed, by isolating one contingent attribute of the object or situation named. Words and concepts each have their own trajectory.

This view, in which concepts arise from predicaments, is the basis of Vygotsky's Activity Theory and is elaborated most fully in his work on child development (LSVCW v.5: 187-206).

The word 'predicament' is particularly apt to express this idea. 'Predicament' originates from the word 'predicate', something which can be said of a subject, the Latin version of the Greek, '*kategoria*'[*].

[*] *Kategoria* is still used in rhetoric, to mean an accusation, which must be responded to with an *apologeia*.

'Predicament' implies a 'double bind' of some kind, a 'Catch 22'. That is, the problem presents itself as a *contradiction*, and as such has to be grasped by a concept. For example, I have little money; but that may not be a problem because I may not need money. The concept of 'poverty' however transcends the conditions of wants and needs, of disempowerment, isolation, social norms of consumption, availability of welfare or support, etc., and captures the situation as a contradiction between means and ends. It would require a whole essay to explain and define 'poverty'. 'Low income', for example, is just an abstract general[†] concept and not a true concept because it does not capture what is problematic. A family may have a low income, but if their needs are small and they are well supported within an extended family or community, their low income is not a predicament. But poverty is a predicament. 'Predicaments' give rise to concepts because they are contradictions and demand an innovation in the relevant system of social practice. This innovation is manifested in the introduction of a new word, or the investment of new meaning in an old word and a modification in the normative practices of that institution. In that sense the institution is 'composed of' concepts. If there is no relevant system of social practice, no institution or social movement for which such a problem could arise and express itself, then no contradiction arises. Without a modern women's movement and the social and technical conditions which made that possible, there could be no problem to be named 'sexism'. In a country with no urban planning authority and automobile industry, there could be no project to build 'freeways'.

Slightly more generally, the word 'situation'[*] includes both predicaments and their states of becoming and resolution. 'Situation' is a word which captures in the most general way what is named by a concept. Conversely, true concepts are the most satisfactory and scientific way of understanding situations. When we can only describe

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[†] I use "abstract general concept" in the sense given to it by Hegel, which is not quite the same as pseudoconcept in the sense given to it by Vygotsky. An abstract general concept is a concept defined in terms of contingent attributes, like a Set whose elements are defined by some formula. But an abstract general concept is not a concrete representation. A pseudoconcept represents a concrete collection of objects, selected according to attributes, but not subject to a verbal definition. An abstract general concept more closely resembles a pre-concept in its mental form, but corresponds to a pseudoconcept in its scope.

[*] 'Situation' entered the English language from the French, its Latin origin being *situs* = site, meaning the location of something in relation to its surroundings. It took on the connotation referred to here in the mid-19th century in relation to financial crises.

a conjuncture in terms of various measures and contingent attributes, as is often the case, then we are forming only an abstract general concept of the conjuncture or event or whatever. This would not be a true concept, but is nonetheless necessary at certain stages of understanding a situation (LSVCW v.5: 198, 293).

When a situation or predicament arises historically, and a word is coined for the situation, very often the response to the predicament also entails the creation of an artefact as well as a related system of practice in order to resolve the situation. In the case of "freeway," we not only created the concept of "freeway," we *built* material freeways from concrete and bitumen, and we also instituted laws and regulations to entrench the practice. Once the word "sexism" was created a whole literature on the topic was created and a range of anti-discrimination laws put into legislation, as well as instituting a range of social practices to oppose it. The creation of artefacts realising a concept, including technology, images, regulations, laws and literature, secures the place of a concept in our lives. This way, a concept will never be completely forgotten or misconstrued, and some stability is given to the meaning of the concept. The continued *use* of material realisations of a concept in social practices, institutionalises the concept and consolidates it.

A concept arises in some culturally and historically formed system of practice, some institution in the most general sense of the term, and a word, acting as a sign for the concept, passes into the language. Concepts arise for individuals also when confronted with situations.

Where these situations arise within a child's system of activity, the child may form a complex in the course of resolving their situation. But an adult or adolescent confronting problems which arise within institutions and the social practices of the wider community, will be able to call upon the wisdom of the past, the corporate knowledge of the institution, which is organised around the word denoting the relevant situation, a sign for a true concept. This is part of their professional knowledge and ideology, part of the means by which institutions and traditional social practices are maintained.

The concept of predicament or situation plays a key role also in Vygotsky's theory of child development, with his concept of 'social situation of development'. According to Vygotsky, each stage in the development of a child is characterised by a situation in which the child plays a certain role and their needs are met by a corresponding specific system of activity. This system of support and the expectations placed on the child are represented by the concept of a

child of the given age in the given community (infant, toddler, schoolchild, problem child, little prince, etc.). But at a certain point in the child's development, they outgrow this role, and the system by means by which their needs are being met becomes simply an affront to them. Their role then becomes an actual barrier to fulfilment of their real needs. Healthy development can only be achieved by an overthrow of this system of activity and an escape from the predicament in which the former system of support had placed the child. The child must take on a new role, and its carers must respond by recognising this new role and entering into a new system of support for the child's new needs.

To grasp this situation, we have to form a true concept of the child in its stage of development and circumstances, not in terms of various contingent factors (age, sibling rank, social class and parental income, etc.) but as a concept (LSVCW v.5: 293). This requires us to grasp the child as being in a *situation*, a situation which has arisen from one predicament and becomes at a certain point, another predicament. The child must be grasped as a true concept. Vygotsky's analysis of child development is a model for understanding every aspect of social life and its development.

True, Scientific and Everyday Concepts in Social Life.

> If we understand the content of thinking to be not simply the external data that comprise the subject thinking at any given moment, but the actual content, we will see how, in the process of the child's development, it constantly moves inward, becomes an organic component part of the personality itself and of separate systems of its behavior. Convictions, interests, world view, ethical norms and rules of behavior, inclinations, ideals, certain patterns of thought – all of this is initially external and becomes internal specifically because as the adolescent develops, in conjunction with his maturation and the change in his environment, he is confronted by the task of mastering new content, and strong stimuli are created that nudge him along the path of developing the formal mechanisms of his thinking as well.
>
> The new content, which confronts the adolescent with a series of problems, leads to new forms of activity, to new forms of combining elementary functions, and to new forms of thinking. ... Together with the transition to thinking in

> concepts, the adolescent is confronted by a world of objective, societal consciousness, a world of societal ideology (LSVCW v.5: 42).

All the concepts which the adolescent comes across have their origins in institutions of some kind. Scientific concepts are one, particularly 'pure' example of true concepts, but every branch of industry and technology, every branch of the state, churches and social movements, sports, and so on, create concepts. Concepts originate in some problem in social life. In the course of their development institutions come up against problems which, if the institution is to survive, they have to overcome. Each of these institutions adds a concrete concept to the life of the community as a whole, as well as a series of concepts flowing from their further development. Insofar as these institutions interact with the wider society, the words, which are bearers of these concepts, enter into the language.

It is one thing to form a general conception of what is meant by the 'Big Bang' but quite another to understand this term in the context in which it arose in making sense of measurements of cosmological radiation. Likewise, we all know what is meant by 'war' but how many of us know this concretely, as active participants? Through language, the words which function as signs for a concept disperse much more widely than the systems of social practice to which they are native, and long after a social practice may have disappeared, the words it coined may continue to carry the concepts which were created by that social practice, albeit in a modified form. It is evident that outside of participation in the forms of social practice to which the concept in question is indigenous, only a superficial, abstract knowledge of a concept can be acquired. Under these circumstances, people may not form true concepts of the situations they come to know by hearsay, so to speak. More likely, people form an abstract general concept of it. But everyday life is not something other than the social practices of the various institutions in society. Rather, everyday life is a kind of mosaic, melting pot or organic combination of these institutions, all interpenetrating and modifying each other, as Hegel described in the section on Objectivity.

Even participation in the relevant form of practice need not be sufficient to acquire a true concept of a practice or the situation to which it is responding. An employee performing relatively routine tasks – 'abstract labour' in the Marxist sense of this term – may have good practical knowledge of the process, but lack a developed understanding of the larger context, and so may develop only a

potential concept of it. Equally, someone performing a supervisory role may well understand the place of an activity within the larger scheme of things, but without experience and competence in the practical tasks entailed, may have a true, but abstract and undeveloped concept of it.

A concept may 'migrate' from the institution where it originated and find a place in everyday life, as part of the lingua franca. In the process, such a concept may shed the very sharp constraints which created the predicament which gave birth to it, but nonetheless remain a true concept. In everyday life, we are generally able to use such concepts appropriately and can if necessary provide a definition for them. There is no sharp line between scientific (or other true concepts) and everyday concepts, just as none of the institutions of modern society are sealed off from everyday life by an impenetrable wall.

In our complex society, marked by a highly developed division of labour, a genuinely concrete understanding of a true concept may be distributed knowledge, not well understood by any individual.

Concepts and Material Culture.

Alexander Meshcheryakov (1923-1974) was a student of Vygotsky's colleague A. R. Luria, who, in 1960, assumed leadership of a school for deaf-blind children. Those who had developed Activity Theory had criticised Vygotsky's theory for being unable to account for the source of motivation in social life, and it must be granted that Vygotsky had not taken up this problem at any length. Meshcheryakov (2009) was able to respond *in practice* to criticisms of Vygotsky's concept of activity.

A child who is deaf and blind from infancy will generally not develop a fully human consciousness without scientific intervention. This work gave Meshcheryakov's staff the opportunity to bring consciousness *into being* where it did not previously exist. In Meshcheryakov's practice, the teacher manually helped the deaf-blind child complete a task using an artefact taken from the cultural life of society, and then gradually withdrew that assistance, in such a way that the novice was able to take over the teacher's actions and complete the task autonomously using the artefact.

In using a spoon to eat, the child does not just satisfy its immediate need for nourishment, but by mastering practical-sensuous actions with the spoon, forms an internal image which contributes to a reconstruction of the whole universe of social conventions and practices with which the spoon, its shape and its presence at dinner

time is associated. Meshcheryakov takes us through the process whereby his students learnt, step by step, the skills of self-care, play and communicating with others, learnt the lay-out of their home, their neighbourhood and the activities which went on in the various buildings, learnt a daily timetable, a calendar, the important national holidays and their meaning, learnt to grow and prepare food, learnt to travel by public transport and explored the country and so on and so forth. In other words, the children learnt to reconstruct in their own consciousness and activity the entire sweep of the culture of their society. The key to Meshcheryakov's approach is the shared use of an artefact to meet the child's needs:

> A kind of vicious circle develops: in order to know how to act with the tool the child has to know it, and in order to know the tool it is essential that the child act with it. The vicious circle is broken when the adult begins to teach the child to act with the tool in the process of satisfying its needs. This instruction is only possible in the form of joint object action shared between the adult and the child (Meshcheryakov 2009: 239).

By means of finite interactions with people and artefacts which are part of a definite cultural-historical society, the child gradually learns the ways of this society and very soon develops their own will, their own life-goals, and goes on to become a full and equal member of the society. The key insight to be taken from this is that *interaction between two individuals is not in itself sufficient* to reconstruct the social life of the community, that is, to appropriate true concepts. True concepts can be acquired through a person collaborating with another person only thanks to the *collaborative use of an artefact*, usually, but by no means only, words.

The fact that archaeologists are able to reconstruct in their minds almost the entire life-world of a long-dead ancient society by the study of artefacts recovered from the soil, is evidence enough of the fact that artefacts and not just words are bearers of concepts. The activities which characterise almost any institution depend on the use of artefacts provided through an elaborate division of labour. Such activities cannot exist without these artefacts, and in turn leave their mark on the artefacts.

The reason why, in his short working life, Vygotsky did not elaborate a theory of activity of the kind developed by A. N. Leontyev and others is two-fold. Firstly, Vygotsky was concerned to retain the focus of his research on well-defined, empirically observable human behaviour and to not rely on any kind of abstraction. Indeed, those

who developed an Activity Theory had to create some conception of an activity or a system of activity, and invariably fell into using some kind of abstraction (See Blunden 2010). On the other hand, the artefact-mediated action of two people collaborating is a clearly circumscribed, well-defined research object. Secondly, as demonstrated by Meshcheryakov, Vygotsky was able, in principle, to unfold the whole of social life, from analysis of the collaborative use of an artefact to complete some task. The artefact bears the stamp of the whole social organism which had given birth to it and at the same time enables and constrains the actions for which it can be used, according to the expectations and practices of the source culture.

The problem of the role of artefacts in the development of concepts is also two-fold. Vygotsky insisted on the categorisation of artefact-use in terms of tools and symbols (or 'psychological tools').

> The invention and use of signs as auxiliary devices for solving any psychological problem confronting man ... is, *from the psychological aspect, at one point* analogous to the invention and use of tools. As such an essential trait of the two concepts being compared, we consider the role of these devices in behavior to be analogous to the role of the tool in a work operation, or, what is the same, *the instrumental function of the sign* (LSVCW v.4: 60).

But on the other hand:

> The *tool* serves for conveying man's activity to the object of his activity, it is directed outward, it must result in one change or another in the object. The *sign* changes nothing in the object of the psychological operation, it is a means of psychological action on behavior, one's own or another's, a means of internal activity directed toward mastering man himself; the sign is directed inward. These activities are so different that even the nature of the devices used cannot be one and the same in both cases. ... Mastery of nature and mastery of behavior are mutually connected because when man changes nature he changes the nature of man himself (LSVCW v.4: 62).

Though:

> The use of auxiliary devices, the transition to mediated activity radically reconstructs the whole mental operation just as the use of a tool modifies the natural activity of the organs, and it broadens immeasurably the system of activity of mental

> functions. We designate both taken together by the term *higher mental function*, or higher behavior (LSVCW v.4: 63).

Thus we see that Vygotsky recognised two distinct ways in which artefacts are used to mediate actions, and therefore two distinct roles played by artefacts in the formation of concepts: tools and signs. At the beginning of the development of a child's practical intelligence, the child does not clearly distinguish between objects, the adults who assist them in using the objects, and the objects' names. So at the very beginning of the child's development, tool-use and symbol-use are merged, but according to Vygotsky, tool-use and symbol-use have divergent lines of development.

The qualification I would make here is that while there is a clear conceptual distinction between using an artefact to control one's own or someone else's mind, and using an artefact to control material objects, I don't believe that either the devices used for these actions or even the actions themselves can be so clearly delineated. We live in a time when the same keyboard can be used to control a machine or to ask for assistance from someone else. The following series of cultural means of opening a door: crow-bar, handle, key, swipe card, PIN code, password and a smile to the doorkeeper – does not admit of any neat division between tool and symbol. But this does not take away from the clear conceptual distinction between the impact of tools in the development of activities, and the impact of signs in the development of mind.

Dialogical and Cultural Theory

Over and above the fact that Vygotsky was able to develop a substantial body of psychological research, Vygotsky's work stands in sharp contrast to that of a number of others who may at first sight seem to share a great deal with Vygotsky. I have in mind among others Mikhail Bakhtin, Ludwig Wittgenstein, George Herbert Mead, Robert. R. Williams, Axel Honneth and Robert Brandom. Like Vygotsky, all these writers see every individual's mind as developing only through interaction with other individuals. However, two aspects of Vygotsky's work are responsible for the fact that he has been able to develop a theory of concepts: artefact-mediation and collaboration in shared tasks.

Unlike Vygotsky, these writers either minimise or entirely overlook the fact that there can be no interaction between one individual's mind and another without the use of words, symbols or other kind of

material artefacts, and that these artefacts are provided by a culture already existing independently of the interacting subjects.

> The crux of the matter is that the immediate communication of consciousness is impossible not only physically but psychologically (LSVCW, v.1: 282).

In fact, nothing can come of interaction between two subjects lacking any means of mediating their interaction, other than a fight to the death or mutual retreat. Even interactions which lead only to the subjugation of the one by the other are possible only because one has needs which can be met by the labour of the other, the minimal means of mediation.

The role of artefacts in the interaction between subjects may be elided by subsuming the production of words, gestures and practical actions into the subject itself. Mead, for example, takes the gesture as the archetypal communicative device, and sees the gesture as simply an action, overlooking the fact that a person can only wave if they have an arm, and cannot speak without an already-existing common language. If symbol-production is reduced to the actions of the subject, then the cultural determination of meaning is elided. The inclusion of the artefact in the analysis of interaction, introduces the whole community into the research scenario without taking the focus away from interaction between two individuals.

The other specific quality of Vygotsky's approach which makes it uniquely able to give insight into human action is that the normative relationship between subjects of interaction is always taken to be collaboration in the completion of some task or project, rather than just a communicative task. People have to have a reason to talk to each other and something to talk about as well as a means of talking to each other. Again, the "volitional task" supplies a mediating element to the interaction between two individuals. It is within this relationship of working towards a shared objective that communicative partners use words. I believe that it is these two qualities of Vygotsky's work: the focus on the collaborative use of artefacts and the collaboration in a shared task, which allowed Vygotsky to give us an adequate theory of concepts. Dialogic and interactionist approaches cannot account for the creation and development of concepts, which are essentially *societal* products, and generally such dialogical theories do not *attempt* to account for concepts.

Conclusion

Vygotsky has brought us to the brink of an answer to our question: what is a concept? Using his genetic method, Vygotsky has traced the development of the intellect, from an infant uttering its first words, through an adolescent learning to use true concepts as they are inducted into the cultural life of their community, to adults whose concepts have lost their dependence on words and merge into the indivisible whole of a human mind.

At the same time, Vygotsky has shown how our concepts are shaped by participation in the life of a real community, in whose words, material culture and social practices, the resolution of all the contradictions which have arisen in the evolution of the life of that community are sublated. Thus Vygotsky has shown us what it is which is represented by a concept, namely situations which have arisen in social practice and found their resolution in the further development of that social practice, and transmitted via words and their meanings.

> Psychologically, the development of concepts and the development of word meaning are one and the same process (LSVCW v.1: 180).

Vygotsky has given us a complete analysis, explanation and description of word meaning, but a word meaning is not a concept. In the mature adult, "*any concept can be represented through other concepts in an infinite number of ways*" (LSVCW v.1: 226). Thus, the relation between word meaning and concept is much like the relation between an action and an activity, between an individual and the universal. No single image or definition can represent a concept. The concept is given only by an infinity of such definitions. A city cannot be represented by its name, or its location on a map or a photograph of its main street. A concept is not simpler than a city. We do need to name it and know where to find it and what its most famous feature looks like, but exploring it is a lifetime's work.

On the other hand, the situation is much the same in social life, where activities are instantiated only by an infinite variety of individual actions. Vygotsky did not spell out an approach to understanding social life, a task which was tackled by the Activity Theorists. But unlike thought, social life is empirically given to us, if only we have a method, and know where and how to begin. Vygotsky gave us an approach, and demonstrated his method of analysis by units in his

study of thinking and speech. With some help from Hegel, I believe I can now complete this task, and explain what a concept is.

Part V. Conclusion.

Current Research in the Light of Hegel and Vygotsky

Possibly the most striking feature of Vygotsky's study of concepts is that he took concepts to be processes of development. As products, they are inaccessible to research because the human mind is an indivisible whole. Only by tracing the multiple lines of development that contribute to concept formation can we grasp what a concept is. And this was Hegel's special gift as well. Rather than taking concepts as things, which inevitably reduces them to sets, he took concepts to be processes of development.

Among the research projects I touched on, those of the Conceptual Change movement and Nancy Nersessian's work stand out as fruitful lines of research, because they focus on processes of change and development, rather than the final products of development. The work of Activity Theorists like Yrjö Engeström, who studies the formation of concepts resulting from organisational change is another fruitful line of research on concept formation. Other present-day Vygotsky scholars working in educational psychology are also shedding light on concept formation.

Even the work of cognitive psychology, which has focussed on the recognition of common objects is useful insofar as recognition is a process of development, namely microgenesis. In connection with certain kinds of activity, an understanding of cognitive microgenesis is invaluable, even if it falls short of a psychology of concepts.

So before moving to answer our question, it should be observed that I have tried to follow a narrative which is reflective of the outcome we have arrived at. First, a review of the concept of concept in the various disciplines as it is found today brought before us the fact that we have a problem. Our philosophical-historical review brought out the fact that this problem has been with us for more than 300 years, and traced the real historical process of solution of this problem. This still leaves much research to be done, but I hope that by presenting the problem that a concept of concept is meant to solve, and tracing the real process of its solution in the history of science and philosophy, we are now in a position to answer the question.

What Is a Concept?

The answer to our question requires us to describe what a concept is in terms of its being a form of thinking and acting, and at the same time, what it is which is represented by a concept.

In answering the first question, Vygotsky has told us that the human mind is an *indivisible whole*, and even though concepts are the units of thought, we cannot think of the mind as being an additive sum of mutually exclusive concepts. Rather, concepts may be imputed to the mind on the basis of the production of word meanings and other actions. Word meanings are the form in which concepts are realised by the psyche, but we cannot equate concepts with word meanings, since words are only signs for concepts, and it would be an all too obvious mistake to identify an object with its sign.

Though at first a child or adolescent cannot separate a concept from the word through which it was acquired, a concept becomes independent of the word in the course of its development. At the same time, there are an infinite number of ways any concept can be defined, because a true concept is always part of a system of concepts and has meaning only in relation to all the other concepts which form the system of concepts of which it is a part. So a concept cannot be adequately represented by any one image or definition, and conversely, a concept can be realised in any number of different actions or definitions.

In stating that the human mind is an indivisible whole I am not making any particular claim about the human *brain*. All the psychological functions which Vygotsky called the 'higher psychological functions', including not only concept formation and speech, but attention, memory, representation, judgment and so on, are artefact-mediated mental formations which are constituted in structural combinations of *all* the elementary psychological functions with which we are born. So the brain may well be differentiated and divisible, but the mind is not.

How then should we investigate concepts as individual mental processes? The principal research method has to be based, as Vygotsky showed, on word meaning, but all domains of intellectual activity, including music and the arts in general, and physical pursuits whether sports or work-activity will also shed light on concepts. But we must always remember that word meanings are only the realisation of a concept, not a concept in itself. *The human mind is an indivisible whole*.

A concept is the sum of all the meanings it produces, but these meanings have to be taken in the context in which they are produced. A concept may be realised in quite different meanings according to whether a person has to give an instant definition, recognise an object, use the concept to complete a categorisation task, write an extended essay on the concept, evoke the concept in an intellectual action of some other kind or is simply mistaken. A concept may be realised in different meanings by members of a jury making a decision on a person's guilt or innocence, a parent offering loving guidance, a mentor seeking to understand, or a political leader considering social policy. In short, it is only possible to say what a concept is, even in terms of its realisation in word meanings, in the context of the activity in which the concept is to be realised. A word is meaningful only within the context of the relevant project. One and the same concept will be realised differently in different projects.

Let us turn to what it is that we have a concept of.

Somewhere, sometime, a problem arose within some institution or social formation which presented itself as a predicament, and this situation was grasped as a new concept. In this precise context what is represented in the concept is transparently clear. 'Freeway' may have appeared as a great solution to the problem at the time, but freeways as the instrument for replacing community with suburbia took some time to unfold. 'Freeway' as the ideal of a project was concretised, and turned out to be quite other than it seemed at the beginning. 'Freeway' is also the ideal in a negative sense for all those who fought against freeways during the 1960s and '70s. To the extent that the campaign against freeways succeeded in modifying the project of freeway-building, it also changed the concept of 'freeway'.

There is a sense in which *this* meaning of 'concept', as the solution to a predicament, is the *real* meaning of the word. But the concept exists and is understood differently from different standpoints. Vygotsky tells us also that individuals grasp a concept when it arises as the solution to some problem in their life. So for example, a suburban resident or car driver understands the meaning of 'freeway' without the sharp edges it had in the original context in which it arose, and without the nuances it accrued, but in terms of their own projects – getting to work, having a nice environment in which to raise their kids, keeping in touch with friends, etc. But nonetheless, the meaning the word 'freeway' has for a suburban resident or car driver anywhere is in a fairly direct sense derivative of the concept of freeway as an extended project.

In fact, every concept is a family of concepts, because the original social context passes and the context takes on a life in other contexts and other projects. But viewed from the standpoint of other projects, the concept is only a shadow of its original self. Concepts exist only within whole systems of concepts. A concept is indigenous to one particular system of concepts, but still exists in other systems of concepts according to its practical relation to other projects. A 'freeway' might be discussed in the context of finding one's way home, situating a restaurant, choosing an automobile, ... What we have here is an infinite variety of *particular* concepts, each of them representing a particular solution to a particular problem. At more and more remote cognitive distance from the object, the contradiction which is at the heart of the concept becomes more and more indistinct. But altogether, a concept could not exist and certainly could never make its way into the general everyday life of a community, other than by means of particular manifestations of the concept in all the various projects which make up social life.

Where I have referred to 'system of concepts' above, what is meant is a *project*. A project, such as represented by 'freeway' brings along with it a range of subordinate concepts, such as 'on ramp', 'lane', 'flyover', 'verge' and so on, but also absorbs all the other concepts of the language in a modified form, from the point of view of 'freeway'.

The apparent dualism of a concept, as a unit of mind *and* what the concept represents in the world, is overcome because it turns out that a concept is the *self*-consciousness of a real project. So there is no dualism. It can be seen that any community is made up of a tangle of projects, each of them being the subject of a concept in the sense of a representation of the situation from which the project *originated*, and concretises in the process of the realisation of its ideal. Every project is motivated by some ideal realised as the negation of some problem. Every project has its 'particularism', a point of view from which all the other various concepts can be evaluated, and integrated into a whole.

So I have dealt with individual actions (word meanings) and particular projects, which are activities, made up of artefact-mediated actions including word-meaning, and finally I come to the universal.

By *universal*, I refer to the words and other artefacts which give unity to all the individual actions and particular projects as evocations of one and the same concept. Vygotsky correctly observed that in its psychological development a concept becomes independent of the word with which it was learnt. However, because a project can only

exist and realise a concept by means of collaboration between people, the word can never be dispensed with. Words change, get translated into different languages and so on, but never without some modification of the concept. Word as signs for concepts are essential for the existence of a concept.

It should be clear from the above that a concept not only *represents* its object, but along with the activity it mobilises, it equally *constitutes* and even produces the object. In fact, the functions of representing, constituting and producing are inseparable.

As Hegel explained, every concept exists as individual, particular and universal. These three moments of the concept are never completely in accord. There is always a measure of dissonance between them, and this is manifested in the dynamics of the concept. What an individual means when they use the word is never quite the same as the meaning produced in any other context.

Objectification and Reification

When a new concept is created, corresponding to an innovation in social practice, a new word is invariably coined (or a new use of an old word) as an *objectification* of the new concept. Very often, it is not only a word but a *useful object* which is created as an instrument of and a focus for the new social practice. Here, the distinction between tool- and symbol-artefacts is useful. In the 1930s, the word 'freeway' was invented to describe a solution to traffic problems. The idea was also objectified in regulations, signage, town planning documents and engineering designs – symbolic artefacts which are essential to the objectification of the new idea and its consolidation in social practice. But also, and most importantly, *freeways* were built in bitumen and concrete. At this point, it is actually secondary whether people refer to these structures as 'freeways', provided social practices are changed in the intended way. Objectification as a tool is the most stable kind of objectification which a concept can acquire. Tools cross the language barrier, and afford activities even in advance of the concept.

When the sign for a concept is taken as the sign for a class of artefact, we talk of the *objectification* of the concept, and all the words used to consolidate the naming of artefacts by the word are part of that objectification. Even when people no longer use freeways for the purposes for which they were designed, those concrete structures would still be there and we might still call them 'freeways'. Under these conditions, it makes abundant sense to take the relevant concept

to be the concept *of the object named*, and simply accept that the concept is the ideal form of a *category of objects*. A concept can be taken as a category of objects just so long as the activities which constitute these objects as such continue to be practiced. The idea of the artefact as an instantiation of the concept is inculcated in people's minds. Participation in the relevant social practice is dependent on understanding the artefact as not just an objectification, but as an *instantiation* of the relevant concept. Participation in everyday life carries with it ontological commitments.

The same goes for new discoveries in natural science. A certain procedure may bring to light some aspect of practice which is most simply and directly expressed by saying that such and such a category of object exists, in Nature, independently of human activity and has such and such properties. Again this makes abundant sense, and for 99% of scientific practice cannot be faulted. It is only when one comes to notions like sub-atomic particles and speeds approximating the speed of light or masses comparable to the mass of the entire Earth, that problems arise with this point of view in natural science.

I see this as taking a naturalistic ontological stance in relation to the concept, and such a stance is entirely appropriate for most projects. But it is not appropriate for a critical approach to the study of concepts. The ontological stance to be taken with respect to concepts, has to be appropriate to the relevant project, and it is not appropriate for our project to naïvely accept a concept as naming a category of objects, as if the social practices constituting the object as an instantiation of the concept could be left out of account and taken as given. The study of concepts is therefore a *critical* activity, because it brings to light exactly how some object or situation comes to be brought under a concept, analysing the social practices by which an object is constituted, and the words by which an object is represented and associated with other social practices.

The word 'reification' is often reserved for taking an ontological stance in relation to a concept which takes some object or state of affairs to be an independently existing instance of the concept, *without sufficient basis*. We may not treat a concept *as if* it named an independently existing object or attribute, when it would be more correct to take it as naming a process or a role within some system of practice, outside of which it would not exist as such. For example, Anna Sfard (2008: 301) says that 'learning disability' is the reification of a condition which someone may be facing at a certain time in certain conditions, but the concept carries the implication that

'learning disability' is a timeless, discourse-independent attribute of a person. Likewise, feminists point out that gender is a reification of the place of a person in social practice, and not the culturally invariant character of a human being that it is taken to be. Such usage of the word 'reification' calls into question not only the concept, but the social practices which construe it. On the other hand, whatever we think of freeways, it is unlikely that we would describe the designation of a broad highway cutting through the countryside without intersecting other roads as 'reification'.

One of the most important forms of objectification is the creation of texts, by which I mean everything from government regulation to advertising, literature and everyday speech. But every kind of objectification gives permanence and substance to a concept. When we take our idea of the good life and erect a building in line with that ideal, people will be living with that idea of the good life for long after. Ideas of learning are objectified in the design of schools and classrooms, and long after teachers have learnt better and are trying to teach differently, they are constrained by the concept of learning of their parents' generation, objectified in bricks, mortar and timber when the school was built.

But as I explained in connection with the work of Alexander Meshcheryakov with deaf-blind children, it is only thanks to such objectification that human communities pass on their wisdom generation after generation. Here we see concepts as *implicit* in the relevant artefact, as affordances or potentialities and constraints which are built into them along with the physical relation they have to other artefacts (such as with keys and locks, or suburbs and freeways).

It is also usual to use the word 'objectification' to refer to projects which have become so stable, usually thanks to being built into legislation, literature and landscape, that they have become *institutions*. The concept is then deemed to name the relevant social practice itself, rather than the artefacts underpinning the institution. In this case, it is the artefacts supporting the objectification (such as signage, uniforms, buildings, rules and regulations) which tend to get taken for granted. Concepts are always combinations of artefacts and activities, but in one case or another, it is the artefact or the activity which is reified as the exclusive focus of the concept.

Abstract Generality

I have insisted that a concept is *not* a bundle of attributes or features. Now I have to qualify this insistence. Essentially a concept is not a

catalogue of features which are used to categorise things. But at certain junctures in certain projects, the concept must be realised in just this form, which I call 'abstract generality'. This is particularly the case when we are dealing with bureaucratic or legal decisions which have to take into account texts and practices which already take a concept to be determined by certain attributes. A jury in a murder case has to know exactly the legal criteria for 'murder' in order to make a decision. An election requires every voter to make a decision and cast a vote as a supporter of this candidate or that. A concrete conception of the relevant decision may be appropriate for analysis and commentary, but bureaucratic processes usually oblige us to apply abstract general criteria. Abstract general concepts are not geared up for discussion about the matter. These bureaucratic principles penetrate our entire life in these times. In a strong sense then, many concepts *can* be defined as abstract general conceptions, and in order to see beyond the abstract general conception it is necessary to take a critical stance in relation to the relevant bureaucratic institutions and practices which constitute the concepts.

Likewise, representations are in essence not concepts, but in very many circumstances, it is precisely a representation, often a very stereotypical representation, which guides people's actions. Again, it is not so much that a concept is or is not a representation, but that a concept may be realised as a representation in certain conditions. For example, when you first meet someone and as yet have no real knowledge of the person, you begin with a representation of them. Or, if you are trying to find your way in a town, you rely on visual images as signposts. But a concept is like a city, and is not exhausted by a few images. But insofar as much of social life depends on popular conceptions which may never go beyond recognition of situations, representationalism exercises considerable reality in our lives, even if as a theory of mind it does not stand scrutiny.

The important thing here is to recognise the distinction between an actual concept, which is invariably deep and complex, and the myriad of realisations of the concept which are produced under different circumstances. An actual concept will take a lifetime to explore.

Self-realisation and Sustainability

A concept is the nearest thing human beings have to eternal life. To realise a concept and nurse it into the world is the best we can do. A concept means a change in social practice. Isn't everything that happens in history, and goes on to become more than a footnote,

marked by the launching of a new concept? And creating a concept is something any one of us can do. But not every concept survives its birth, and outlives the day funding is withdrawn or its founder dies. A concept has to put roots down in fertile soil if it is to realise itself. This is the challenge for those of us who want to make a difference: work out how to make something which is but a twinkle in your eye into a sustainable project that outlives its creators because it meets a real social need. As such, people will go on talking about it for a long time to come, and their lives will have been changed as a result.

This is why it is worth knowing what makes a concept.

Acknowledgments

I would like to thank Mike Cole for the advice and encouragement over a number of years, as well as all the correspondents on the listserv, xmca. In particular, I thank Mike Arnold, Lois Holzman, David Kirschner, Jay Lemke, Carol Macdonald, Anna Sfard and Tony Whitson for invaluable discussions, and Lynn Beaton, Arturo Escandon, Helen Grimmett, Ron Lubensky, Rob Parsons, Deborah Rockstroh, Julian Williams and Roger Woock, who each read parts of the manuscript and gave me invaluable feedback. And I would like to thank my editor David Fasenfest for his support.

References

MECW = "Marx Engels Collected Works." (1975-2004) published in London by Lawrence & Wishart, London, UK.

LSVCW = "L. S. Vygotsky Collected Works." (1987-1999) 6 volumes, published in New York by Plenum Press.

PJD = "The Philosophy of John Dewey, Two Volumes in One," , ed. John J. McDermott, (1973) Chicago IL: University of Chicago Press.

* * *

Barsalou, L. W. (1992) "Cognitive Psychology. An Overview for Cognitive Scientists," Hillsdale NJ: Lawrence Earlbaum.

Barsalou, L. W. (2008) "Cognitive and Neural Contributions to Understanding the Conceptual System," in *Current Directions in Psychological Science*, Vol 17, No. 2 2008.

Blunden, A. (2010) *An Interdisciplinary Theory of Activity*, Leiden, Holland: Brill.

Brandom, Robert B. (1994) *Making it Explicit: Reasoning, Representing, and Discursive Commitment*, Cambridge, MA: Harvard University Press.

Brandom, Robert B. (1994) *Making It Explicit*, Cambridge, MA: Harvard University Press.

Brandom, Robert B. (2000) *Articulating Reasons. An Introduction to Inferentialism*, Cambridge, MA: Harvard University Press.

Brandom, Robert B. (2009) *Reason in Philosophy. Animating Ideas*, Cambridge, MA: Harvard University Press.

Bruner, J. (1990), *Acts of Meaning*, Cambridge MA: Harvard University Press.

Carnap, R. (1966) *Philosophical Foundations of Physics*, New York: Basic Books Inc.

Cole, M., (1996) *Cultural Psychology. A Once and Future Discipline*, Cambridge, MA: Harvard University Press.

Damasio, A. (2003) *Looking for Spinoza. Joy, Sorrow and the Feeling Brain*, New York: Harcourt Publishing Company.

Descartes, R. (1637/2006) *Discourse on Method*, W. Yorkshire, UK: Pomona Press.

deVries, Willem A. (1988) *Hegel's Theory of Mental Activity*, London UK: Cornell University Press.

Dewey, J. (1896) "The Reflex Arc Concept in Psychology," *PJD* pp. 136-148.

Dewey, J. (1910) "The Influence of Darwinism on Philosophy," *PJD* pp. 31-41.

Dewey, J. (1917) "The Need for a Recovery of Philosophy," *PJD* pp. 58-97.

Dewey, J. (1929) "Experience and Philosophic Method," *PJD* pp. 249-277.

Dewey, J. (1934) "Having an Experience," *PJD* pp. 554-573.

Dewey, J. (1938) "The Pattern of Enquiry," *PJD* pp. 223-239.

diSessa, A. A. (2006) "A History of Conceptual Change Research: Threads and Fault Lines," in Sawyer, R. K. (Ed.) *The Cambridge handbook of the learning sciences*. Cambridge, U.K.: Cambridge University Press.

Engeström, Y. (2011) "From Design Experiments to Formative Interventions," *Theory & Psychology*, October 2011, 21.598, Calgary, Canada: Sage Publications.

Fichte, J., (1796/2000), "Foundations of natural right," in F. Neuhouser (Ed.), *Foundations of natural right according to the Principles of the Wissenschaftslehre* (pp. 3-334). Cambridge, U.K.: Cambridge University Press.

Forster, M., (2007) "Johann Gottfried von Herder," *The Stanford Encyclopedia of Philosophy*, Edward N. Zalta (ed.), plato.stanford.edu/archives/win2003/entries/herder/.

Goethe, J. W. v. (1988) *The Collected Works*, Scientific Studies, Volume 12, Edited and translated by Douglas Miller, Princeton, NJ: Princeton University Press.

Goethe, J. W. v. (1788/1989) *The Collected Works*, Volume 6, Italian Journey, Edited and translated by Douglas Miller, Princeton, NJ: Princeton University Press.

Goethe, J. W. v. (1988) *The Collected Works*, Volume 12, Scientific Studies, Edited and translated by Douglas Miller, Princeton, NJ: Princeton University Press.

Goethe, J. W. v. (1996) *Goethe on Science. An Anthology of Goethe's Scientific Writings*, Selected and introduced by Jeremy Naydler, With a foreword by Henri Bortoft, Edinburgh, UK: Floris.

Hala, S. (1999), *The Development of Social Cognition*, Psychology Press.

Hegel, G.W.F., (1817/1955) *Hegel's Lectures on The History of Philosophy*. trans. John Sibree, New York, NY: Dover.

Hegel, G. W. F, (1807/1910) *The Phenomenology of Mind*. Trans, with an Intro & notes J. B. Baillie, London UK: George Allen & Unwin Ltd..

Hegel, G.W.F., (1816/1969) *The Science of Logic*, trans. A. V. Miller, London UK: George Allen & Unwin. § represent paragraph numbers in the internet version of this book at http://www.marxists.org/reference/archive/hegel/works/hl/hl000.htm

Hegel, G. W. F., (1802/1979) *System of ethical life* [1802/3]) *and First Philosophy of Spirit* [1803-4]), translated by T. M. Knox. NY: State University of New York Press.

Hegel: *The Letters*, (1984) Trans. C. Butler and C. Seiler, Bloomington, IN: Indiana University Press.

Hegel, G. W. F., (1821/1952) *Hegel's Philosophy of Right*, translated with Notes by T. M. Knox, Oxford, UK: Oxford University Press.

Hegel, G.W.F., (1830/2009) *Hegel's Logic*, tr. Wm. Wallace. Pacifica, CA: Marxists Internet Archive Publications.

Hegel, G.W.F., (1830/1971) *Hegel's Philosophy of Mind*, Part Three of the Encyclopaedia of the philosophical sciences, tr. Wm. Wallace. New York NY: Oxford University Press

Hegel, G.W.F., (1831/1969) "Preface to the Second Edition," *The Science of Logic*, trans. A. V. Miller, London UK: George Allen & Unwin.

Herder, J G, (1787/1940) *God, Some Conversations*, trans. Burkhardt, F. H., Indianapolis, IN: Bobbs-Merrill Co. Inc.

Herder, J G, (1774/2004) *Another Philosophy of History and selected political writings*, translated by Ioannis Evrigenis and Daniel Pellerin, Indiana: Hackett Publishing Company.

Herder, J G, (1772/2002) "Treatise on the Origin of Language," in *Philosophical Writings*, ed. Forster, M. C., Cambridge UK: Cambridge University Press.

Houlgate, S, (2005) *An Introduction to Hegel. Freedom, Truth and History*, Malden MA: Blackwell.

Hutchins, E. (1980) "Culture and Inference. A Trobriand Case Study," Harvard University Press.

Kant, I., (1787/2007) *Critique of Pure Reason*, trans. Norman Kemp Smith, eruditor.com.

Kuhn, T. (1962/1996) *The Structure of Scientific Revolutions*. Chicago, IL: University of Chicago Press.

Lakoff, G. & Johnson, M. (1980) *Metaphors we Live By*. Chicago, IL: University of Chicago Press.

Lakoff, G. & Johnson, M. (1999) *Philosophy in the Flesh. The Embodied Mind and its Challenge to Western Thought*. New York, NY: Basic Books.

Leontyev, A. N. (2009) *The Development of Mind*, Pacifica Ca.: Marxists Internet Archive Publications.

Levitin, K., (2011) *One is not born a Personality. a Biographical History of Soviet Psychology*, with prefaces by Mike Cole and Vladimir Zinchenko, Kettering, OH: Erythrós Press and Media.

Lyotard, J.-F. (1979/1984), *The Postmodern Condition: A Report on Knowledge.* Minneapolis MN: University of Minnesota Press.

MacIntyre, A. C. (1981), *After Virtue*, Notre Dame, IN: University of Notre Dame Press.

Margolis, E. & Laurence, S. (1999) *Concepts, Core Readings*, Cambridge, MA, The MIT Press.

Marx, K., (1845) "The German Ideology," Chapter III, *MECW*, vol. 5, p. 117.

Marx, K., (1867) Preface to the First Edition of Capital, *MECW*, vol. 35, p. 8.

Marx, K., (1852) "The Eighteenth Brumaire of Louis Bonaparte," *MECW*, vol. 11, pp. 99-197.

Marx, K., (1857) "The Method of Political Economy," *MECW* v. 28, pp. 37-48.

Marx, K., (1857/1971) "The Method of Political Economy," Appendix 1 to *A Contribution to the Critique of Political Economy*, translated from the German by S. W. Ryazanskaya, Lawrence & Wishart, UK.

Medin, D. L., Unsworth, S. J. & Hirschfeld, L. (2007) "Culture, Categorization and Reasoning," in Kitayama, S. and Cohen, D., *Handbook of Cultural Psychology*, Hove, UK: Guildford Press.

Menand, L. (2001) *The Metaphysical Club. A story of ideas in America*, New York: Farrar, Straus and Giroux.

Meshcheryakov, A. (1979/2009) *Awakening to Life*, Pacifica Ca.: Marxists Internet Archive Publications.

Murphy, G. (2004) *The Big Book of Concepts*, Cambridge, MA, The MIT Press.

Nersessian, N. J. (2008), *Creating Scientific Concepts*, Cambridge, MA, The MIT Press.

Newman, F. & Holzman, L. (2006), *Unscientific Psychology*, London: iUniverse Inc.

Oxford English Dictionary (OED 2006), Second Edition, Oxford UK: Oxford University Press.

Piaget, J. (1970), Genetic Epistemology, New York, NY: Norton.

Ricoeur, P. (1981), *Hermeneutics and the human sciences*, Paris: Cambridge University Press.

Robinson, D.N. (1965/1995) *An Intellectual History of Psychology*, Madison WI: University of Wisconsin Press.

Sakharov, L. S. (1928/1994) "Methods for Investigating Concepts," in *Vygotsky Reader* (1994), ed. René van der Veer and Jaan Valsiner, Blackwell.

Sfard, A. (2008), *Thinking as Communicating. Human Development, the growth of discourses, and mathematics*, NY: New York, Cambridge University Press.

Toulmin, S. (1953), *The Philosophy of Science*, London, UK: Hutchinson & Co. Ltd.

Towsey, P. & Macdonald, C. (2009), "Wolves in Sheep's Clothing and Other Vygotskian Constructs," *Mind, Culture, and Activity*, 16:234-262, Taylor & Francis.

Vygotsky, L. S. (1930/1994) "The Development of Thinking and concept formation in adolescence," *Vygotsky Reader*, Hoboken NJ: Blackwell.

Watson, John B., (1913) "Psychology as the Behaviorist Views it." *Psychological Review*, 20, 158-177.

Winfield, R. D. (2010), *Hegel and Mind. Rethinking Philosophical Psychology*. UK: Palgrave Macmillan.

Wittgenstein, L. (1953/2009), *Philosophical Investigations* [PI], tr. Anscombe G.E.M., Hacker, P.M.S. & Schulte, J.. Includes "Philosophy of Psychology" [PPF]. Chichester, UK: Wiley-Blackwell.

Zinchenko, V. P. and Vergiles N Yu (1972) *Formation of visual image: Studies of stabilized retinal images*, New York: Plenum Press.

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