Abstract rationality in education: from Vygotsky to Brandom

Abstract

Abstract rationality has increasingly been a target of attack in contemporary educational research and practice and in its place practical reason and situated thinking have become a focus of interest. The argument here is that something is lost in this. In illustrating how we might think about the issue, this paper makes a response to the charge that as a result of his commitment to the 'enlightenment project' Vygotsky holds abstract rationality as the pinnacle of thought. Against this it is argued that Vygotsky had a far more sophisticated appreciation of reason and of its remit. The paper proceeds first by examining the picture of Vygotsky that is presented in the work of James Wertsch, and especially his claim that Vygotsky was an ambivalent rationalist, goes on to provide an account of Vygotsky that corrects this picture, and develops this in the light of the work of Robert Brandom, who shares Vygotsky's inheritance of Hegel. The conclusion towards which this piece points is that the philosophical underpinnings of Vygotsky's work provide a radically different idea of rationality and epistemology from that characterised as abstract rationality and that this has significance for education studies.

Keywords: Abstract Rationality, Concepts, Vygotsky, Brandom, Hegel

Abstract rationality is a target of attack by contemporary educationalists. This criticism is not without reason since there are clear errors involved in an approach to education that separates rules, procedures and the development of skills and capacities from the *Lebenswelt*. The force of the critique of anything that goes under the rubric of abstract rationality has been motivated by a redirection of focus towards the contextual, the situated and the practical and away from any notion of reason understood in universal terms presupposing a shared psychic unity of human kind. In contrast to a unifying project associated with rationalism, the emphasis is on multiple ways of making meaning sustained by variations in cultural experiences and forms of life that are widely viewed as incommensurable. In turn the critique of abstract rationality in education has raised questions regarding the forms of knowledge appropriate to learners. Areas of curriculum that are seen to exemplify abstract rationality have been questioned as regards their usefulness for learners.

While criticisms of abstract rationality are not groundless the term abstract rationality has been used far too widely and at times has amounted almost to a critique of reason itself, where for instance it has been used to apply to any form of reasoning that goes beyond context and suggests universal remit. The idea of an abstract decontextualised reason based on universal principles is counter-posed to the contingency of context. That there might be an intricate relation between the two is not considered in this stark polarisation and in place of serious consideration of this possibility, the failure of the enlightenment

project is taken as given and replaced by a meaning-making always confined to the specific contexts.

Vygotsky has interesting things to say on matters connected with abstract rationality. Yet his work has been the subject of criticism on the grounds of his supposed commitment to the Enlightenment model of the relation between language and the world that he is seen to hold.

The aim of this paper is to reject this blanket attack on abstract rationality and to show that Vygotsky's position is altogether more subtle than his exponents in education have tended to suggest. It will do this by, examining in section one, the picture of Vygotsky that is presented in the work of James Wertsch, especially his claim that Vygotsky was an ambivalent rationalist. Wertsch argues that taken as a whole 'Vygotsky's writings reflect a kind of ambivalence with regard to where he stood on the ideals of Enlightenment rationality.' (Wertsch, 1996, p.38). Wertsch sees these ideals as potentially negative and for him they represent; the logical, the universal, the timeless and the general by contrast with the rhetorical, the particular, the local and the timely. Vygotsky, however, had a far more sophisticated appreciation of the nature and scope of reason and its significance for education than that found in contemporary characterisations of his view of rationality. The paper will go on, therefore, in section two, to provide an account of Vygotsky that corrects this picture and explores, in particular, aspects of his account of the relations of concepts to the world. In doing so the paper is compelled to consider, albeit briefly, the influence that Hegel exercised on Vygotsky's thinking, because it was under the influence of Hegel in particular that Vygotsky developed his ideas about rationality. In section three these lines of thought are taken further in the light of the work of Robert Brandom, who shares Vygotsky's inheritance of Hegel. My discussion of Hegel's presence in Brandom's work serves also to show the way that after having been ignored or even been disparaged by Anglo-American philosophers Hegel's work is now being recognised in leading circles in contemporary philosophy (Brandom, 2000, McDowell, 1996). What is particularly interesting is that Brandom's attraction to Hegel, for the importance that he (Hegel) attached to the social nature of thinking, is precisely the same as Vygotsky's. The conclusion towards which this paper points is that the philosophical underpinnings of Vygotsky's work provide a radically different idea of rationality and epistemology from

that characterised as abstract rationality, and that the importance of this for studies in education has been badly neglected.

An appropriate point on which to start the argument is a brief account of salient aspects of Wertsch's reading of Vygotsky.

1. James Wertsch's Vygotsky and the idea of the enlightenment project

Prior to the publication of the *Collected Works* (1999)[1] James Wertsch was one of the most influential commentators bringing Vygotsky's work to a wider audience. In common with many researchers in the Vygotskian field Wertsch has a concern for the improvement of access, opportunity and learning for those involved in mass schooling. His interest in using Vygotsky's work to examine 'the institutional, historical, and cultural specificity of mental functioning' (Wertsch, 1992, p.112) reflects a general movement in recent years away from viewing mental functioning as a unified entity unrelated to context. Thus, Wertsch questions abstract reason in terms of what he calls 'decontextualised rationality'; He states:

> The defining characteristic of the voice of decontextualised rationality is that it represents objects and events …in terms of formal logical and if possible quantifiable categories. The categories used in this form of representation are decontextualised in the sense that their meaning can be derived from their position in abstract theories or systems that exist independently of particular speech types. …the meaning of *five* or *electron* …can be and often is established by definitions that are abstract (i.e. independent of particular use) and hence identical across contexts.
> (Wertsch, 1992, p.120)

He goes on to emphasise that although decontextualised meanings are thought to have some kind of primordial existence that underlies our use of language they actually grew out of discourses associated with the rise of literacy (Wertsch, 1992, p.120). The treatment of decontextualised meanings within narrow historical coefficients runs the risk, given the categorical rejection of any overarching concept of history, of sliding into an unhelpful relativism. A further example of this can be found in Wells who emphasises that semiotic practices and artefacts have enabled the sociohistorical development of scientific rationality to emerge and states: "The fact that 'scientific rationality' has come

to be highly valued in Western cultures does not therefore mean that it is superior, in some absolute sense, to other modes of thinking." (Wells, 1996)

For Wertsch and Wells abstract rationality conceived in this way is just one historically and socially developed way that meaning is made: it is one of a variety of ways by which individuals make sense of their world depending on the practices that they participate in. This questioning of the privileged status of abstract rationality has contributed to the shift of attention of those concerned with pedagogy to the forms of making meaning and to their situated dimension. Alongside this shift and to some extent connected with it has been a questioning of the status of what was previously considered knowledge and truth. Thus the impact of Constructivism in educational theory with its emphasis on the meaning-making of the individual learner, has challenged the relevance and significance of any particular system of knowledge.

The concerns that have been expressed about Vygotsky's work are often couched in broad terms that take the Enlightenment project to be committed to a conception of the nature and power of reason that is now found wanting. This general line of argument is rehearsed to different degrees throughout a good deal of what is currently published in educational research. Many educational writings have ignored the tradition of philosophy that is not only fundamental to the work of Vygotsky but also provides a different route for considering current educational issues (and cannot be captured by the critical characterisation of the Enlightenment project). Criticisms of Vygotsky require a proper appreciation of the philosophical terrain on which his work developed.

Wertsch's work on Vygotsky is particularly helpful as a counterpoint, because it provides a worked out critique of abstract rationality in relation to concrete educational concerns. Wertsch has written repeatedly on the difficulties Vygotsky faced due to his writing in an enlightenment climate; in fact he claims it is this climate that accounts for an ambivalence in Vygotsky's work between an approach to meaning with an emphasis on locale and culture, on the one hand, and a hard scientific realism and a hierarchical form of reason[2], on the other.

He shares a concern with other commentators on Vygotsky's work, that the scientific concepts Vygotsky favours reflect the influence of an eighteenth century

rationality now undermined by what is understood about the failures of the Enlightenment project. However, it is interesting to note that although the Enlightenment is often characterised as epitomising an abstract, universalist and logo-centric conception of reason, it was historically, among other things, a search for meaning that could no longer be found in the secure foundation of a divine absolute. Seen in this light the Enlightenment involved a rejection of authority rather than the positive assertion of it, which modern critics perceive.

In his characterisation of the Enlightenment, Wertsch adopts Toulmin's revised account of what he terms the 'received view of modernity'; this he argues has profound implications for understanding Vygotsky's writings. (Wertsch, 1996, p. 37) In his book *Cosmopolis: the hidden agenda of modernity* Toulmin (1992) writes of a struggle between Enlightenment rationality and Renaissance humanism. Wertsch finds many explicit statements in Vygotsky's writings that correspond to what Toulmin terms the "received view"; 'Time and again he shows a strong tendency to value and focus on logic, the universal, the general, and the timeless.' (Wertsch, 1996, p. 37) The assertion (also made by Gordon Wells 1999) that Vygotsky was influenced strongly by the abstract rationalist aspect of the Enlightenment due to the time and context in which he worked (the Soviet Union in the early part of the last century) ignores the criticism of eighteenth century rationality made by Hegel and its influence on Vygotsky. A general point at issue here is that the blanket attack on Enlightenment thinking has not only led to a loss of valuable elements of this tradition but has also overlooked its developments. Of these the development made by Hegel has, through the work of Vygotsky, direct and important implications for education. The abandonment of the pursuit of truth and the definition of learners as 'producers of knowledge' who exhibit a multiplicity of ways of meaning-making have made themselves felt within the classroom. They come about as a result of a general disenchantment with foundationalism, understood as the thesis that all knowledge rests ultimately on a foundation of noninferential knowledge. This understanding of foundation has no place in either Hegel's or Vygotsky's thought which, as I have argued elsewhere, can best be described as 'antifoundational foundationalism'.[3]

It is in the context of his characterisation of Enlightenment rationality that Wertsch, while justifiably concerned with the inadequacies of schooling that fails to engage with the variety of ways that learners make meaning, points to the problems of privileging

decontextualised rationality as the form of 'meaning making' in schooling. Wertsch is representative of a number of writers who are troubled by a school curriculum based on 'decontexualised rationality'. He questions the value of this priority noting that; 'the general tendency to privilege the voice of decontextualised rationality exists in spite of the fact that empirical evidence indicates that people who have mastered relevant abstract reasoning processes often do not use these processes, even when the situation clearly calls for them to do so'. (Wertsch, 1992, p.122) Wertsch views the 'privileging' of particular mediational means (ways of solving problems), found in traditional schooling, as indicative of the extraordinary authority accorded to abstract rationality since the Middle Ages. He attempts to establish a direct link between his criticism of pedagogical practices that privilege abstract or decontextualised rationality and Toulmin's argument about the received view of Modernity. Toulmin refers to Descartes' teachings that the 'demands of rationality impose on philosophy a need to seek out abstract, general ideas and principles, by which particulars can be connected together' (Toulmin, 1992, p. 33) and Wertsch restates Toulmin's summary of the received view that *'abstract axioms were in, concrete diversity was out'* (Wertsch, 1998, p. 67). Wertsch argues that: 'the received view is routinely appropriated by people in our sociocultural setting and…results in viewing certain utterances and arguments as convincing despite the many critiques of this tendency' (Wertsch, 1998, p. 67). His concern with this privileging of abstract rationality over alternative ways of 'meaning-making' is linked to his characterisation of Enlightenment rationality as an abstract universalism which involves a particular conception of scientific concepts. For Wertsch this characterisation leads onto his criticism of scientific concepts and their relation to the world.

Wertsch develops his critique of Vygotsky by considering the arguments in chapter 5 and 6 of *Thinking and Speech*[4]. He is concerned with what he takes to be Vygotsky's emphasis on the relationship between semiotic expressions, such as words and sentences, and the world of objects. This, he see as complelling evidence for 'a side of Vygotsky that was deeply committed to Enlightenment traditions of Abstract Rationality.' (Wertsch, 2000, p. 22) He asserts, that at certain points in his work, Vygotsky approached meaning in terms of ostention, drawing on Charles Taylor to provide an explanation of what this entails. This is helpful in providing a clear characterisation of a common conception of meaning not just in philosophy but also one present in much

pedagogical practice and curriculum development. This conception has implications for pedagogy and educational practice though not in the way that Wertsch argues.

In respect to ostention Wertsch draws on Taylor's distinction between *designative* and *expressivist* approaches to meaning to identify two trends - Rationality and Romanticism. Commenting on the view of meaning that he finds in Vygotsky's work he writes that: 'This view of meaning is grounded on the assumption that language functions primarily to *represent* an independent reality' [italics added] and quotes Taylor to the effect that '[W]e could explain a sign or word having meaning by pointing to what it designates, in a broad sense, that is, what it can be used to refer to in the world, and what it can be used to say about that thing. …we give the meaning of a sign or a word by pointing to the thing or relations that they can be used to talk about' (Taylor, cited in Wertsch, 2000 p. 26). Wertsch argues that the relationship between word and object found in the designative approach is consistent with Vygotsky's account of meaning in scientific concepts, the argument being that Vygotsky had the same epistemological view of the relation of word to world. Central to Wertsch's argument that Vygotsky was an ambivalent rationalist is the claim that Vygotsky operates with 'an assumption that language and meaning are basically concerned with referential relationships between signs and objects' (Wertsch, 2000, p. 20). It is the epistemological assumption implied by this claim with which I take issue. It is as well to point out that the issues at stake here reach beyond different conceptions of meaning as they have implications for classroom practice, curricula and pedagogy on the one side and scientific truth and knowledge on the other. These implications particularly to scientific truth and knowledge lead on to questions concerning epistemology.

2. Vygotsky, abstract rationality, and the social foundations of mind

Like his contemporary Piaget, Vygotsky understood the importance of the inextricable connection between the development of human thought and epistemology.

However in Vygotsky's enquiry into the nature of mind this connection is conceived in a different way from that of Piaget and involves a number of ideas whose educational significance is still being worked out. These ideas include the role of concepts, the nature of scientific concepts and the role of tools in the development of higher mental function.

Central to Vygotsky's work is the idea of the social formation of the mind, this can be most simply stated as the idea that while it has an individual dimension, thought cannot be properly understood as a solely individual activity. This social conception of mind is at odds with orthodox Anglo-American approaches where thought is 'analyzed in terms of an individual's mental states'.[5] When this idea, of a social conception of mind, is acted upon, philosophical enquiry cannot help but enter terrains of concern, normally reserved for educationalists; that is to say the examination of the human mind can no longer be detached from the conditions within which it develops.

The type of connection that his findings demonstrated between thought and language is not readily captured by the idea that a thought is articulated in speech. Rather in contrast to the conventional view that speech is the articulation of thought (and hence that thought can exist without articulation) Vygotsky claims that thinking and speech go together. It is not simply a matter of articulating what is already conceived, but articulation is part and parcel of the process of conceptualisation. For instance one might say following this that the thought that cannot be put into words is the thought that is not resolved. The significance for education of the idea that thought or concepts are only completed through their expression implies a rejection of the commonly practised mode of teaching known as 'the transmission mode'[6].As Vygotsky stresses; "direct instruction in concepts is impossible…The teacher who attempts to use the approach achieves nothing but a mindless learning of words…'' (Vygotsky, 1987, p. 170). Once a concept has been learnt the development of its meaning for the learner has only just begun.

While Vygotsky's dialogic and developmental conception of concepts is widely appreciated, his account of scientific concepts and the weight given to them, is viewed as problematic. Vygotsky distinguishes between different sorts of concepts; and in particular, between what he termed 'everyday' or 'spontaneous concepts' on the one hand and 'scientific concepts on the other'[7]. These two types of concepts acquire their meaning and are learnt though different practices: Everyday concepts are those that a

child learns spontaneously in daily life. Scientific concepts are those learnt through formal instruction. Scientific concepts take their meaning primarily from their systemic relation with one another rather than through any ad hoc relation to the world. The differences between these two concepts and the type of experience they depend upon are crucial for Vygotsky. As an illustration of the two concepts and the differences they entail, the following extract from Kozulin's *Psychological Tools* provides a vivid example:

> Here is a problem: "A rope is tied around the Earth's equator. Then a ten-meter-long piece is added to it and the rope is pulled evenly so that everywhere the distance between the Earth's rope and the surface is the same? The question is: Would this distance be sufficient for a cat to sneak under the rope?"
> (Kozulin, 1998, preface)

Kozulin recounts how he was given the problem by his son while driving and was unable to use a paper and pencil to utilise the symbolic tools of mathematics to calculate the answer. Instead he relied on imagining the additional length added in one place (a loop of about 5m high) and then being spread out to extend the full length of the rope, resulting in a minute gap too small for the cat to fit underneath. The use of scientific concepts of *pi* and radius, would have yielded the correct but counter intuitive answer of a 1.6m gap.[8]

It is important to be clear about the distinctive contribution and character of scientific concepts as well as their origin to avoid misunderstandings of his work as favouring abstract rationality in terms of its characterisation as a from of reason independent of any context. For scientific concepts are no less concrete than everyday concepts, they depend just as much on experience as everyday concepts, the difference being, instead of being direct their dependence is indirect though many enquiries over many generations. Scientific concepts bear the characteristics of abstract, formal thinking and as such are crucial for schooling.

The extensive interest in the work of Vygotsky is in a large part due to the original implications of his work. While these implications range over such diverse fields as health care, educational technologies and schooling, the potential impact of the work is inextricably tied up with a fundamental understanding of the relation of human beings to

the world (Mind and World) and of what it is to be human i.e. what is distinctive about thinking beings. Our cognitive powers clearly distinguish us from animals and machines yet many accounts of our relation to the world fail to make the distinction or if they do make it fail to develop it sufficiently. Indeed as has been mentioned here the social nature of the human mind has generally been approached in education studies in terms of a multiplicity of forms of thought tied to context and mediational means rather than in terms of an examination of what is distinctively and universally human about its character.

Criticisms of Vygotsky's work rely on an implicit epistemological framework that fails to recognise that his work lies in different territory from what is generally associated with 'abstract rationality'. This has implications not just for debates about knowledge but also about schooling policy. Hence the argument here for the importance of achieving a fuller grasp of the philosophical background to Vygotsky's work.

One reason for the neglect of this area by non-philosophers is the difficulty of grasping the relevant material. The philosophers to whom Vygotsky owes a special debt (Hegel and Spinoza) are notoriously difficult to understand; in the case of Hegel the difficulties are compounded by serious misrepresentation (Pinkard, 2000). It is far beyond the scope of this paper to deal with these difficulties even though a fuller appreciation of the conception of scientific concepts that Vygotsky was working with would involve a thorough excavation of the influence of both Hegel and Spinoza on his thought.[9]

As has been made clear, then, this paper takes a radically different approach from that of Wertsch and other commentators, by adopting a positive position vis-à-vis the enlightenment tradition which Wertsch finds so problematic. In support of this position it draws attention to the work of the contemporary philosophers already mentioned whose reading of enlightenment thinkers has much in common with Vygotsky. The influence of Hegel's *Phenomenology* on John McDowell[10] and Robert Brandom has been crucial for rethinking problems that have come out of analytic philosophy such as the relation of language to the world and it is suggested here that it is also a fertile source, via the work of Vygotsky, for education. It is here that an internal development within philosophy concerning epistemology has significant implications for education.

It is worth noting in passing, that epistemology has received revived interest as new developments have opened up possibilities for a cross fertilisation between social theory, psychology and philosophy. In particular the reading of Hegel being worked through by contemporary philosophers steeped in the analytical tradition already mentioned, whose approach at first sight seems wholly at odds with Hegel, is proving especially interesting. The conception of Hegel as a metaphysician has been replaced by that of him as a philosopher who had addressed many of the problems of contemporary philosophy. For instance that of language may have followed a different course, for example Rorty, referring to Pippin's work on Hegel, has said; 'Had we listened to Hegel, Wittgenstein's private language argument would have seemed a reiteration of the obvious'. (Rorty, 2005) It is appropriate now to turn our attention to the influence of Hegel not only in Vygotsky but also in Brandom, and to connections between their work.

3. Hegel's Enlightenment: from Vygotsky to Brandom

Hegel, who was particularly important for Vygotsky believed that enlightenment thought had not achieved the liberatory goal of reason. To this end he developed, particularly in his *Logic*, a system of thought which established its own foundations as part of its process. This Hegelian system meets the objections levelled against Enlightenment thinking by many contemporary critiques.[11] But as far as Vygotsky is concerned it does not appear to have been fully taken into consideration.

The explanation of reference in Wertsch's reading of Vygotsky's discussion in Chapters 5 and 6 is at odds with Vygotsky's Hegelianism. However, the 'ambivalence' that Wertsch detects in Vygotsky's work can be interpreted from the standpoint of Vygotsky's approach as the different paradigm from which he operates (Hegelian and inferentialist) which allows for both a universalising form of knowledge and the continual constitutive development of local meaning-making. Brandom has termed the paradigm in which this paper argues Wertsch is operating 'representationalist' and counterposed it to an inferentialist approach to meaning. Unsurprisingly, given the influence of Hegel on the

work of Brandom, this is quite in line with Vygotsky's approach in *Thinking and Speech.* In line with this it could be argued that some of the concerns of those who take issue with abstract rationality are misplaced to the extent those concerns arise in the first place from representationalism.

At numerous points in his work Vygotsky labours to take issue with a conception which sees thought as occupying a 'representational' or simple referential relation to the world. The point he stresses when he speaks below of 'a system of judgments' is that the idea of 'general representations' is inadequate to express what a concept is in thinking:

> According to our hypothesis, we must seek the psychological equivalent of the concept not in general representations, not in absolute perceptions and orthoscopic diagrams, not even in concrete verbal images that replace the general representations – we must seek it in a system of judgements in which the concept is disclosed.
> (Vygotsky, 1998, p. 55)

This makes clear just how far he was from embracing a simple representational view of the world.

In educational practice some of the extreme polarisations implicit in constructivist positions (such as the idea that there is no way of ruling between any one set of ideas or another as 'we come no closer to the truth' – Gergen, 1999, p. 239) can be viewed as an outcome of the problem of understanding what 'objective world' entails within a foundationalist[12] tradition of epistemology. Constructivism as well as Constructionism are often counterposed to realism (Parker, 1998, Gergen, 1999). Hence the realism evident in Vygotsky's use of the phrase 'scientific concepts' is seen as evidence of a lack of appreciation on his part of multiple avenues of meaning-making in favour of didactic methods.

The critique of 'the Enlightenment project' as a version of abstract reason applied to the world in an authoritarian way has been extremely influential in education research, leading many commentators to question knowledge *per se*. When he criticises formal logic Vygotsky himself recognises the possibility of rationality controlling and regulating at the expense of richness and diversity:

> It is completely clear that if the process of generalizing is considered as a direct result of abstraction of traits, then we will inevitably come to the conclusion that thinking in concepts is removed from reality. … Others have said that concepts arise in the process of castrating reality. Concrete, diverse phenomena must lose their traits one after the other in order that a concept might be formed. Actually what arises is a dry and empty abstraction in which the diverse, full-blooded reality is impoverished by logical thought. This is the source of the celebrated words of Goethe: 'Gray is every theory and eternally green is the golden tree of life'.
>
> (Vygotsky, 1998, p. 53)

However, as this commentary on the generalisations of formal logic shows, Vygotsky's view of rationality is quite different from the one that construes 'the development of meaning [as] a matter of increasing generalisation and abstraction' (Wertsch, 2000 p. 20). In contrast to the impoverished version of reason that is sometimes attributed to aspects of his work Vygotsky argues that:

> A real concept is an image of an objective thing in all its complexity. Only when we recognise the thing in all its connections and relations, only when this diversity is synthesised in a word, in an integral image through a multitude of determinations do we develop a concept. According to the teaching of dialectical logic, a concept includes not only the general, but also the individual and particular.
>
> In contrast to contemplation, to direct knowledge of an object, a concept is filled with definitions of the object; it is the result of rational processing of our existence and it is mediated knowledge of the object. To think of some object with the help of a concept means to include the given object in a complex system of mediating connection and relations disclosed in determinations of the concept.
>
> (Vygotsky, 1998, p. 53)

Vygotsky's emphasis on the systemic character of concepts is taken by Wertsch to be an indication of the type of decontextualised and abstract rationality which he views as so problematic for schooling in the current period. However, what Vygotsky refers to is not the abstract system he depicts but rather, like Brandom, an approach that prioritises inference over reference. For Vygotsky, the relation of a concept to an object is one that is necessarily part of a system of judgements which involve the 'mediating connection and relations disclosed in the determinations of the concept' (Vygotsky, 1998, p. 53). This is the basis of an epistemology quite different from the one implicit in Wertsch's critique. Following Hegel, it conceives the relation of a thinking being to the world as necessarily social, since our responsiveness to the world which develops as part of our

second nature operates within what McDowell[13] (drawing on Wilfred Sellars) has called 'the space of reasons' (i.e. our responses are necessarily normative).

The prioritisation of inference over reference entails, in terms of pedagogy, that the grasping of a concept (knowing) requires committing to the inferences implicit in its use in a social practice of giving and asking for reasons. Effective teaching involves providing the opportunity for learners to operate with a concept in the space of reasons within which it falls and by which its meaning is constituted. Participation in such a space does not require an immediate and full grasp of the reasons constituting the concept but rather only the ability to inhabit the space in which reasons and the concept operate in the first place.[14]

The idea that a sign, word or concept might be understood primarily as a relation of representation to the world is precisely what Hegel takes issue with in the *Phenomenology.* As Brandom reminds us, Hegel's achievement was to build on what Kant had already begun:

> The subtlety and sophistication of Kant's concept of representation is due in large part to the way in which it is integrated into his account of the inferential relations among judgments. It remained for Hegel, however, to complete the inversion of the traditional order of semantic explanation by beginning with a concept of experience as inferential activity and discussing the making of judgments and the development of concepts entirely in terms of the role they play in inferential activity. (Brandom, 1994, p. 92)

Brandom formulates his Hegelianism as a prioritisation of inference over reference. Similarly Vygotsky's Hegelianism rejects the position that takes the meaning of a concept primarily in terms of its representation of an object. Instead, what has priority is the system of inferences in which the object is disclosed.

For Brandom the distinguishing feature of a thinking being is its responsiveness to reasons rather than simply to causes. Responsiveness to causes is characteristic of a machine or a parrot capable of responding differentially to a stimulus, but not of thinking beings qua thinking beings. A mechanical alarm may be far more effective in *perceiving* the dangers of a fire and sounding the alert than any human being. But when a human being shouts 'fire!' he or she is always doing more than simply making a warning noise. When a child of five (as opposed to a much younger child whose uttered sounds are only

just beginning to operate as language) shouts 'fire!' he or she knows its implications. He or she appreciates the consequences of the exclamation 'fire!' and what follows from such an utterance. Brandom uses this example to illustrate his claim that human beings act and communicate *inferentially*. His point is that what distinguishes the human form of knowing from the type of 'knowing' we might ascribe to a machine is the Sellarsian point that knowing for a human being, consists not merely in expressing a response but in knowing what follows from it – knowing the implications, or what Brandom calls the 'giving and asking of reasons' (Brandom, 2000, p. 163). As he puts it 'even non-inferential reports must be inferentially articulated' and this point is crucial to any understanding of human intellect:

> One of the most important lessons we learn from Sellars's masterwork, 'Empiricism and Philosophy of Mind' (as from the 'Sense Certainty' section of Hegel's Phenomenology), is the inferentialist one that even noninferential reports must be inferentially articulated. Without that requirement we cannot tell the difference between noninferential reporters and automatic machinery such as thermostats and photocells, which also have reliable dispositions to respond differentially to stimuli.
>
> (Brandom, 2000, p. 48)

I have just mentioned an alarm *perceiving* a fire. This is already an anthropomorphism which Brandom takes care to avoid. He talks of machines 'responding differentially to stimulus' by which he means they respond mechanically to a stimulus. The use of the phrase 'responding differentially' in place of 'perceiving' or 'knowing' is of crucial importance for it introduces a distinction that is hidden by our anthropomorphic use of language. The stimulus in this case – the fire - is a cause of their response; in the case of the human being who sounds the alarm the fire is the reason for their response. *The human perceives the fire as fire; that is to say that unlike a machine it has a concept of fire as part of a system of concepts*. For Brandom making a *report* as a human being is not merely to 'respond differentially' it is inferring rather than merely representing, since 'even non inferential reports must be inferentially articulated' (Brandom, 2000, p. 47). This emphasis on inference is drawn from Hegel's analysis of what *Sense Certainty* entails, and in keeping with Hegel, Brandom argues that 'in order to master *any* concept, one must master *many* concepts' (Brandom, 2000, p. 49). For Brandom, the responses that humans make involve an understanding of significance that is only possible by already appreciating other concepts. Where this is not the case, i.e. in the response of a

parrot or machine, even though the response still may be the same, i.e. 'fire', then the human is not behaving as human.

The emphasis on inference that Brandom credits to Hegel is not without important implications for schooling. It provides a basis for a conception of knowledge and the process of acquiring it whereby the use and understanding of a word cannot be conceived simply in terms of the designative approach to meaning that Wertsch finds in aspects of Vygotsky's work. On the contrary, following Brandom, and Hegel, in order to understand, it is necessary to 'make explicit' the connections and determinations which constitute a concept. For Vygotsky, these connections and determinations are not due to 'abstract rationality' (even though they are objective) but to the cultural-historical activity of human beings in the world of which they are part. Brandom explains this in terms of social practices:

> I think one of the most important lessons we can learn from Kant concerns the normative character of concept use. Hegel, as I read him, transposed this insight into a pragmatist key, with his idea that normative statuses are always the product of social practices. I see Hegel, already in the Phenomenology of Spirit of 1807, wrestling with a core of issues that we only recovered access to recently, largely through the efforts of the later Wittgenstein. I have in mind issues concerning the possibility of understanding conceptual objectivity in the context of a social practice account of the norms implicit in concept use.
>
> (Brandom, 1999)

Here is a view of meaning and objectivity radically different from the one contained in Wertsch's claim that Vygotsky was ambivalent about Enlightenment Rationality. There are negative consequences to Wertsch's critique of a view of knowledge found in pedagogic practice which prioritises reference and predicates a simple correspondence model of scientific concepts. From the viewpoint of common sense and in cases of poor teaching practice, words are understood solely to take their meaning from the things they represent, and it is taken as a given that it is through awareness of this connection that learning occurs. Knowing as opposed to awareness of association requires a different stance. However, in the absence of an appreciation that there is an alternative to this approach to meaning (one which incorporates designation but only as secondary to the inferences that are the historical genesis of its meaning) the attack on 'abstract

rationality' can lead to a damaging relativism, where the weight given to discourse, speech types and the historical consitution of meaning making has led to an agnosticism for truth. The absence of any consideration of the inferential character of concepts in Piagetian pedagogy and the influence of this absence on constructivism, has fostered the idea that an individual learner left to his/her own devices in a rich environment will 'create' knowledge. However the design of such an environment requires more careful attention to detail than is often realised. Indeed it is often the case that the idea that the learning environment requires design at all is ignored[15]. By contrast a Vygotskian approach doesn't depend simply on individuals being placed in the required environment where they discover meaning for themselves. The learning environment must be designed and cannot rely on the spontaneous response to an environment which is not constructed according to, or involves, some clearly worked out conceptual framework. For Vygotsky concepts depend for their meaning on the system of judgements (inferences) within which they are disclosed. Brandom's careful study of concept use argues that concepts by their nature are not isolated from one another;

> to have conceptual content is just for it [a concept] to play a role in the inferential game of making claims and giving and asking for reasons. To grasp or understand such a concept is to have practical mastery over the inferences it is involved in—to know, in the practical sense of being able to distinguish, what follows from the applicability of a concept, and what it follows from.
>
> (Brandom 1994, p. 48)

To underline: for the Vygotskian approach, the connections are not arbitrary (nor the outcome of the individual learners 'creativity') but inform the meaning of the concept in the first place (whether explicit or not). It is through proper appreciation of the philosophy informing Vygotsky's work that we can reconsider the attack on reason made within the field of Vygotskian research and with it a more robust view of the question of knowledge in education.

It is clear that although no simple conclusion can be drawn one point does emerge from the argument and that is the valuable criticism that Wertsch and others make of the limitations of mass education and its teaching practices do not require the wholesale rejection of the Enlightenment tradition. It is true that the very worse practices of authoritarian didacticism can be characterised as participating in an 'abstract rationality' which appears to have a provenance in seventeenth and eighteenth century thought. But it

is also true that this same tradition provided a criticism of abstract rationality which is as thorough as to be found in contemporary thinking.

References

Bakhurst, D. (1997). Meaning, Normativity and the Life of the Mind. *Language and Communication 17*, 1, 33-51

Brandom, R. (1994). *Making it Explicit: Reasoning, Representing, and Discursive Commitment.* (Cambridge, MA: Harvard University Press)

Brandom, R. (1999). interviewed by Carlo Penco *Epistemologia XXII*, 1999:143-150 Retrieved January 1, 2005, from http://www.dif.unige.it/epi/hp/penco/pub/brandom_inter.pdf

Brandom, R. (2000). *Articulating Reasons: an introduction to inferentialism.* (Cambridge, MA: Harvard University Press)

Gergen, K.J. (1999). *An Invitation to Social Construction.* (London: Sage Publications)

Kozulin, A. (1998). *Psychological Tools: a sociocultural approach to education.* (Cambridge, MA: Harvard University Press)

McDowell, J. (1996). *Mind and World* (Cambridge, MA: Harvard University Press)

Parker, I. (Ed.) (1998). *Social Constructionism, Discourse and Realism.* (London: Sage Publications)

Pinkard, T. (2000). *Hegel: A Biography.* (Cambridge: Cambridge University Press)

Rorty, R. (2005). Review of Robert B. Pippin, The Persistence of Subjectivity: On the Kantian Aftermath, *Notre Dame Philosophical Reviews*. Retrieved May 5, 2006, from http://ndpr.nd.edu/review.cfm?id=4101

Testa, I. (2003). Hegelian Pragmatism and Social Emancipation: An Interview with Robert Brandom, *Constellations*, *10*, 4, 554-570

Toulmin, S. (1992). *Cosmopolis, the hidden agenda of modernity.* (Chicago: University of Chicago Press)

Vygotsky, L.S. (1987). *The Collected Works of L.S. Vygotsky, Volume 1 Problems of General Psychology*, (including the Volume *Thinking and Speech*). Minick, N. (trans.), Reiber, R.W. & Carton, A.S. (Eds). (New York: Plenum Press)

Vygotsky, L. S. (1998). *The Collected Works of L.S. Vygotsky, Volume 5, Child Psychology*. R.W. Reiber (ed), Prologue by C. Ratner, (New York: Plenum Press)

Wells, G. (1999). *Dialogic inquiry: towards a sociocultural practice and theory of education* (Cambridge: Cambridge University Press)

Wertsch, J. V. (1992). The voice of rationality in a sociocultural approach to mind (In L.C. Moll (Ed.) *Vygotsky and education: instructional implications and applications of sociohistorical theory* (pp. 111-126) Cambridge: Cambridge University Press.)

Wertsch, J. (1996). The role of abstract rationality in Vygotsky's image of mind. (In A.Tryphon and J. N. Voneche (Eds.), *Piaget - Vygotsky The Social Genesis of Thought*, (pp.25-42). Psychology Press, an imprint of Erlbaum (UK) Taylor and Francis Ltd.)

Wertsch, J. V. (2000). Vygotsky's Two Minds on the Nature of Meaning (In C.D. Lee, P. and Smargorinsky (Eds.), *Vygotskian Perspectives on Literacy Research,* (pp.19-31). Cambridge: Cambridge University Press.)

Westphal, K. R., Integrating Philosophies of Mind and of Education: Comments on Cunningham. *Philosophy of Education, 1999,* 147-52. (Urbana, Ill.: Philosophy of

Education Society, 2000) Retrieved May 5, 2006, from http://www.ed.uiuc.edu/EPS/PES-Yearbook/1999/westphal_body.asp

Young, M. (forthcoming) *Bringing Knowledge Back In: from social constructivism to social realism in the sociology of education*. (Taylor and Francis)

[1] It is only recently that a wide range of Vygotsky's work has been made available to the English reader and with the work, the extent of philosophical influence on him by Spinoza and Hegel. The two books by which he is most commonly known (*Thought and Language* and *Mind in Society*) are by their editors' admission not representative.

[2] The expression 'hierarchical form of reason' is used to capture the belief in progress towards a universal form of rationality of which different cultural groups exhibit characteristics which place them higher or lower on an evolutionary scale.

[3] Derry (2000) 'Foundationalism and anti-foundationalism: seeking enchantment in the rough ground' in V. Oittinen (ed) *Evald Ilyenkov's philosophy revisited*, Kikimora Publications, Helsinki.

[4] The first English language edition of an edited version of this work translated the title as *Thought and Language* and this is the name by which Vygotsky's work is commonly known. The English edition of *the Collected Works Volume 1* (1987) used the more correct translation of *Thinking and Speech.*

[5] '… the disinterest of mainstream philosophy of mind in matters of education results from an inherited Cartesianism, according to which … mental contents can and ought to be analyzed in terms of an individual's mental states.' (Westphal, 2000)

[6] This is not to deny that learning can be supported in a number of ways including didactic approaches which involve practice and habituation.

[7] In the original Russian of Vygotsky's text the term scientific here has a more general meaning and applies to academic concepts.

[8] (C is circumference of the earth, r is radius of the earth; R is the new radius after 10 meters is added to the circumference) $C=2\pi r$; $C+10 \text{ metres} = 2\pi R$; $r + 10/2\pi = R$; $R - r = 1.6$ meters (i.e. the additional gap).

[9] See Derry (2004) The Unity of Intellect and Will: Vygotsky and Spinoza in *Educational Review,* Volume 56, Number 2

[10] McDowell credits Brandom's writings and conversations with shaping his own thinking and singles out a seminar on Hegel's *Phenomenology of Spirit* that he attended in 1990 relating that 'the effect is pervasive; so much so that I would like to conceive …[*Mind and World*] as a prolegomenon to a reading of the *Phenomenology* much as Brandom's forthcoming *Making It Explicit: Reasoning, Representing, and Discursive Commitment* is…a prolegomenon to his reading of that difficult text.' (McDowell, 1996, p. ix).

[11] Brandom claims that Hegel was struggling with issues concerning conceptual objectivity that 'analytic philosophy has had laboriously to rediscover in this century, due to the efforts of such thinkers as Wittgenstein, Sellars, Quine, and Kuhn.' (Brandom, 1999) For a clear account of Hegel's work that opens the way to an understanding of these issues see Stephen Houlgate's *Introduction to Hegel.*

[12] By using the shorthand 'foundationalist tradition' here I mean to capture the tradition that Hegel criticises in the *Phenomenology* – both dualism and representationalism are elements in a foundational approach to knowledge.

[13] David Bakhurst (1997) has brought to our attention the links between McDowell's work and the Vygotskian tradition through his work on the philosopher Ilyenkov.

[14] Initiation into such a space opens the opportunity for the development of word meaning.

[15] Design here entails far more than the formalities involved in the sort of lesson planning which details what resources and activities will be used at which point.