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# Analysing institutional effects in Activity Theory: First steps in the development of a language of description

*“A theory is only as good as the principles of description to which it gives rise.”  
(Bernstein 2000, p. 91)*

## Summary

This paper explores the benefits that might arise from an appropriate fusion of the version of Activity Theory being developed by Yrjo Engestrom and the sociology of the late Basil Bernstein. It explores the common roots of the two traditions and on the basis of empirical work carried out in British special schools formulates an approach to the development of a language of description which would extend the analytical power of Activity Theory.

## Introduction

In this paper I wish to explore the extent to which two approaches to the social formation of mind are compatible and may be used to enrich and extend each other. These are: Activity Theory as derived from the work of the early Russian psychologists, Vygotsky and Leontiev, and the work of the sociologist Basil Bernstein. The purpose is to show how Bernstein (2000) provides a language of

description which allows Vygotsky's (1987) account of social formation of mind to be extended and enhanced through an understanding of the sociological processes which form specific modalities of pedagogic practice and their specialised scientific concepts. The two approaches engage with a common theme namely the social shaping of consciousness, from different perspectives and yet as Bernstein (1993, 1977) acknowledges both develop many of their core assumptions from the work of Marx and the French school of early 20<sup>th</sup> century sociology.

There has been much debate over the years about the effectiveness of schooling but relatively little about the effects of different modalities of schooling. The empirical work which is used to illustrate the theoretical argument of this paper is drawn from a study conducted in British special schools. This sector of the state school system was selected as it

is the one which exhibits the greatest diversity of institutional modalities of schooling. The empirical work in this article seeks to investigate the effects of different forms of institutional modality and the theoretical work seeks to develop a language of description which facilitates such research.

It is possible to track different approaches to the study of cultural historical formation in the early work of Vygotsky and Leontiev. The unit of analysis was word meaning in the case of Vygotsky (1987) and the activity system in which the individual was located in the case of Leontiev (1981, 1978). In both approaches there is little by way of an explicit focus on institutional structure. In their attempt to develop an account of social formation their gaze fell first on the individual in dialogue and the object oriented activity system. The notion of the object of activity – the problem space or raw material that was being worked on in an activity – is central to the work of Leontiev.

Bernstein developed a theory and descriptive categories that oriented researchers gaze towards the social, cultural and historical nature of institutions and the principles of discourse that shape the possibilities for individual and collective thought and actions. The rules regulating processes of cultural historical formation of mind rather than the object of activity are the focus. That is not to say that that social, cultural, historical formation of mind is not important in the theories of Leontiev and Vygotsky rather that they do not focus on the explication of wider social principles which regulate this formation. It is, as it were, that they were starting from opposite ‘ends’. Thus in this paper a focus on the rules which shape the social formation of pedagogic discourse and its practices (Bernstein, 2000) will be brought to bear on those aspects of psychology which argue that object oriented activity is a fundamental constituent of human thought and action (Cole, 1996). Crucially an attempt will be made to hint at the possibilities for the de-

velopment of a language of description which will enable macro-constraints to be made visible in their power to shape interactions.

The institutional level of analysis was all but absent in much of the early Vygotskian research in the West (see Daniels, 2001). There was no recourse to a language of description that permitted the analysis of object oriented activity in terms of the rules which regulate the microcultures of institutions. Recent developments in post Vygotskian theory (most notably Activity Theory) have witnessed considerable advances in the understanding of the ways in which human action shapes and is shaped by the contexts in which it takes place (Daniels 2001). They have given rise to a significant amount of empirical research within and across a wide range of fields in which social science methodologies and methods are applied in the development of research based knowledge in policy making and practice in academic, commercial and industrial settings (e.g. Agre (1997); Cole, Engeström and Vasquez (1997); Engeström and Middleton (1996); Daniels (2001); Lea and Nicoll (2002)).

## Institutions in Activity Theory: limitations and possibilities

Vygotsky provided a rich and tantalising set of suggestions that have been taken up and transformed by social theorists as they attempt to construct accounts of the formation of mind which to varying degrees acknowledge social, cultural and historical influences. His legacy is not an account of social determinism and denial of agency rather he provides a theoretical framework which rests on the concept of mediation. Wertsch (1998) advances the case for the use of mediated action as a unit of analysis in social-cultural research. Engeström (1993) points out the danger of the relative under-theorising of context: “Individual experience is described and analysed as if consisting relatively discrete and situated actions while the

system or objectively given context of which those actions are apart is either treated as an immutable given or barely described at all” (p. 66).

Within the post-Vygotskian theoretical framework there is a requirement for a structural description of social settings which provides principles for distinguishing between social practices. Descriptions of this sort would be an important part of the apparatus required to carry out empirical investigation and analysis of the psychological consequences for individuals of different forms of social organisation. I am not treating the social organizational context as some kind of independent effect rather as a constraint on the scope for what Mike Cole calls the weaving of context (Cole, 1996, 2003). Description of the institutional setting itself would not be enough. Vygotsky’s writing on the way in which psychological tools and signs act in the mediation of social factors does not engage with a theoretical account of the appropriation and/or production of psychological tools within specific forms of activity within or across institutions. However, some writers in the field have recognized the need for such a form of theoretical engagement (e.g. Hedegaard, 2001).

In the same way that psychological studies of learning which ignore contextual constraints will confound and confuse the interpretation of results, the absence of an appropriate theoretical framework that includes wider social institutional factors will reduce Vygotsky’s theory of appropriation of psychological tools to partial levels of explanation. Vygotsky’s approach lacks a theoretical framework for the description and analysis of the changing forms of cultural transmission at the level of the institution. In Engestrom’s (1993, 99) hands Activity Theory makes an approach to the institutional level of analysis but lacks a language of description which permits the production of artifacts (such as speech) in the institution

to be studied in a manner which coheres with the principles which regulate that institution.

Vygotsky’s (1987) distinction between scientific and everyday concepts and his account of the interplay between these two forms in the process of concept development provides an important insight into the psychology of activity within the zone of proximal development. Bernstein provides a sociology of pedagogy which allows the study of such psychological formation to proceed within a framework which articulates the formation of the scientific concepts which inhabit specific modalities of schooling. There is no account of the sociology of the formation of scientific concepts in Vygotsky’s writing.

Bernstein provides an account of cultural transmission which is avowedly sociological in its conception. In turn the account that has developed in the wake of Vygotsky’s writing on semiotic mediation and cultural, historical development offers a model of the psychological aspects of the social formation of mind which is underdeveloped in Bernstein’s work.

In this paper I will theorize differences between research sites in terms of institutional effects on the social formation of mind and then will reflect on the need for a theory of the structure of discourse as a cultural artifact. This will involve a discussion of the constitution and recontextualisation of this psychological tool / cultural artifact in terms generated by a language of description which provides a conceptual linkage between institutional setting and discursive practice.

## Vygotsky’s theory of the importance of the instruction of scientific concepts in school

In Chapter six of ‘Thinking and Speech’ Vygotsky claims a particular function of speech in instruction within schooling.

“The instruction of the child in systems

of scientific knowledge in school involves a unique form of communication in which the word assumes a function which is quite different from that characteristic of other forms of communication.

- 1) The child learns word meanings in certain forms of school instruction not as a means of communication but as part of a system of knowledge.
- 2) This learning occurs not through direct experience with things or phenomena but through other words.” (Vygotsky, 1987, p. 27)

Participation in specific forms of social practice is linked with the development of word meaning. In order to understand the development of word meaning the characteristics of particular communications practices must be understood. As Minick (1990) shows, Vygotsky maintained that various activities such as science, schooling, art, and reading stimulate unique kinds of thinking. Activities do not express pre-formed, natural cognitive, emotional, or personality characteristics of the individual. On the contrary, artistic, literary, scientific, and educational activities generate psychological functions. The concrete social relations and cultural technologies that are germane to the activities organize the individual’s psychological processes (Minick, 1990, p. 167).

Vygotsky argues that the forms of instruction in scientific concepts of formal schooling (i.e. mathematics, the natural sciences) involve the child in a new ways of using words in communication. Vygotsky saw the psychological characteristics of the scientific concept as inseparable from the unique use of words in the social interaction that occurs between teachers and pupils in formal school instruction. (Minick, 1985 p 107). If socio-institutional effects of schooling are to be considered within a Vygotskian framework then one approach is to compare the effects of different forms of or-

ganization of subjects of instruction. This calls for a description and analysis of structures and of effects.

Activity Theory has developed in response to the challenge embedded in this statement. It provides a means of studying learning understood as the expansion through change and development of the objects of activity with specific rules, community and division of labour arrangements. This is undertaken through a critical consideration of contradictions within and between activity systems.

Engeström advocates the study of artefacts “as integral and inseparable components of human functioning” but he argues that the focus of the study of mediation should be on its relationship with the other components of an activity system (Engeström 1999, p. 29). The challenge is to theorise the Vygotskian concept of tool, or cultural artefact, as a social and historical construction and to describe it in terms that reveal that construction. Bernstein provides the structural level of analysis and Vygotsky furnishes the theoretical framework which can account for the position of the individual.

### Bernstein’s approach to the analysis of power and control in pedagogic practice in institutions

Bernstein’s (1981) model is one that is designed to relate macro-institutional forms to micro-interactive levels and the underlying rules of communicative competence. He provides a semiotic account of cultural transmission which is avowedly sociological in its conception. His analysis of the school, as an institution, shows his continuous engagement with the inter-relations between changes in organizational form, changes in modes of control and changes in principles of communication. His language of description is generated from

an analysis of power (which creates and maintains boundaries in organisational form) and control that regulates communication within specific forms of interaction). Bernstein addresses these problems in the course of the development of his account of how pedagogic processes shape consciousness differentially. The evolution of his work was driven by three inter-related questions:

1. How does a dominating distribution of power and principles of control generate, distribute, reproduce and legitimise dominating and dominated principles of communication?
2. How does such a distribution of principles of communication regulate relations within and between social groups?
3. How do these principles of communication produce a distribution of forms of pedagogic consciousness?  
(Bernstein, 2000, p. 4)

## Classification and framing

Bernstein's (2000, 1981) analysis and description focuses upon two levels: a structural level and an interactional level. The structural level is analysed in terms of the social division of labour it creates and the interactional level with the form of social relation it creates. The social division of labour is analysed in terms of strength of the boundary of its divisions, that is, with respect to the degree of specialization. The interactional level emerges as the regulation of the transmission/acquisition relation between teacher and taught: that is, the interactional level comes to refer to the pedagogic context and the social relations of the classroom or its equivalent.

Bernstein uses the concept of classification to determine the underlying principle of a social division of labour and the concept of framing to determine the principle of its social relations. This enables him to analyse the structural

and interactional levels in such a way that they can be analytically separated from each other and yet be considered as a whole.

*Classification.* Classification is defined at the most general level as the relation between categories. The relation between categories is given by their degree of insulation. Thus where there is strong insulation between categories, each category is sharply distinguished, explicitly bounded and having its own distinctive specialization. When there is weak insulation then the categories are less specialized and therefore their distinctiveness is reduced. In the former case, Bernstein speaks of strong classification and in the latter case Bernstein speaks of weak classification. For example, consider the difference between institutions (such as schools) where departments are highly differentiated (e.g. physics, chemistry, biology) and institutions where there is little differentiation at this level of organisation (e.g. one general science department). In the former classification would be said to be stronger than in the latter. At another level of organisation one could identify in which pupils were grouped into classes by ability resulting in say 5 'streams' in which membership of each stream was identified on the basis of test scores. This would be an example of relatively strong classification when compared with an entirely mixed ability based approach to grouping.

Classification may also be discussed in vertical and horizontal dimensions. For example the strength of the boundary / distinction between subjects in the curriculum may be described in terms of a horizontal dimension (how different they are as in the case of History, Geography, Science etc) or a vertical dimension (how important they are).

*Framing.* The social relations generally, in the analyses, are those between parents/children, teachers/pupils, doctors/patients, social workers/clients, but the analysis can be extended

to include the social relations of the work contexts of industry or commerce. Bernstein considers that from his point of view all these relations can be regarded as pedagogic.

Framing refers to the control on communicative practices (selection, sequencing, pacing and criteria) in pedagogical relations, be they relations of parents and children or teacher/pupils. Where framing is strong the transmitter explicitly regulates the distinguishing features of the interactional and locational principle which constitute the communicative context. Where framing is weak, the acquirer is accorded more control over the regulation.

“Framing regulates what counts as legitimate communication in the pedagogical relation and thus what counts as legitimate practices.” (Bernstein, 1981 p.345)

For example framing would be stronger in a classroom in which the teacher controlled the sequence, pace and criteria of evaluation (as in some forms of objectives based teaching) than in a classroom in which the children were more in control of the order and speed in which they undertook tasks and where there was some form of self assessment.

Bernstein also provides an account of external framing which refers to the control over communication with those who are involved with the activity but who are located outside the institution (e.g. parents in the case of schooling). Here is the parallel with Engeström’s notion of community. Crucially Bernstein allows us to move beyond questions concerning who is a member of the community involved in dialogues and actions to questions of relations of control with that community. Above all this form of analysis permits the move between organisational structure and the structure of the discourse.

“Classification refers to what, framing is concerned with how meanings are to be put together, the forms by which they are to be made public, and the nature

of the social relationships that go with it.” (Bernstein, 2000, p. 12)

In that the model is concerned with principles of regulation of educational transmission at any specified level, it is possible to investigate experimentally the relation between principles of regulation and the practices of pupils. Relations of power create and maintain boundaries between categories and are described in terms of classification. Relations of control revealed in values of framing condition of communicative practices. It becomes possible to see how a given distribution of power through its classificatory principle and principles of control through its framing are made substantive in agencies of cultural reproduction, e.g. families/schools.

“Through defining educational codes in terms of the relationship between classification and framing, these two components are built into the analysis at all levels. It then becomes possible in one framework to derive a typology of educational codes, to show the inter-relationships between organizational and knowledge properties and to move from macro- to micro-levels of analysis.” (Bernstein, 1977, p. 112)

## Recognition and realisation: the rules of competence

Principles for distinguishing between the contexts configured through relations of power are termed recognition rules. These are the rules, which are often tacitly acquired, and which enable the recognition of the speciality of particular category formed by boundaries maintained through relations of power (this is physics, that is chemistry etc). Realization rules regulate the creation and production of specialized communication within contexts. The analysis of classification and framing can be applied to different levels of school organization and various units within a level. This allows the analysis of power and control and the rules regulating what counts as legitimate

pedagogic competence (recognition and realization) to proceed at a level of delicacy appropriate to a particular research question.

The organisational dimensions of social practice are provisionally sketched in AT but lack a sophisticated account of the way in which a dominating distribution of power and principles of control generate, distribute, reproduce and legitimise dominating and dominated principles of communication such as that to be found in Bernstein (2000). Engeström talks of the division of labour in terms of the horizontal division of tasks between the members of the community and of the vertical division of power and status. Engeström's notions of rules refers to the explicit and implicit regulations, norms and conventions that constrain actions and interactions within the activity system. These understandings are further refined in Bernstein's hands as argued in the following section.

## Instruction and regulation

Bernstein (2000) provides an outline of a key feature of the structure of pedagogic discourse with the distinction between instructional and regulative discourse. The former refers to the transmission of skills and their relation to each other, and the latter refers to the principles of social order, relation and identity. Regulative discourse communicates the school's (or any institution's) public moral practice, values beliefs and attitudes, principles of conduct, character and manner. It also transmits features of the school's local history, local tradition and community relations.

Different modalities of schooling may be described in terms of the relationship between the relations of power and control which gives rise to distinctive discursive artefacts. For example, where the theory of instruction gives rise to a strong classification and strong framing of the pedagogic practice it is expected that there will be a separation of discourses (school

subjects), an emphasis upon acquisition of specialized skills, the teacher will be dominant in the formulation of intended learning and the pupils are constrained by the teacher's practice. The relatively strong control on the pupils' learning, itself, acts as a means of maintaining order in the context in which the learning takes place. This form of the instructional discourse contains regulative functions. With strong classification and framing the social relations between teachers and pupils will be more asymmetrical, that is, more clearly hierarchical. In this instance the regulative discourse and its practice is more explicit and distinguishable from the instructional discourse. Where the theory of instruction gives rise to a weak classification and weak framing of the practice then children will be encouraged to be active in the classroom, to undertake enquiries and perhaps to work in groups at their own pace. Here the relations between teacher and pupils will have the appearance of being more symmetrical. In these circumstances it is difficult to separate instructional discourse from regulative discourse as these are mutually embedded.

Pedagogic discourse is modelled as one discourse created by the embedding of instructional and regulative discourse. This model of pedagogic discourse provides a response to one of the many theoretical demands that have remained unfulfilled in the post-Vygotskian framework. The rejection of the cognitive/affective dualism which Vygotsky (1987) announced was not followed by a model within which a unitary conception of thinking and feeling could be discussed and implemented within empirical research.

Bernstein's formulation of pedagogic discourse as an embedded discourse comprised of instructional and regulative components allows for the analysis of the production of such embedded discourses in activities structured through specifiable relations of power and control within institutions.

## Talk in institutions

Bernstein (1993) argues that much of the work that has followed Vygotsky “does not include in its description how the discourse itself is constituted and recontextualised”. In Activity Theory the production of the cultural artefact, the discourse, is not analysed in terms of the context of its production. Context is understood in terms of rules (explicit and implicit regulations, norms and conventions that constrain actions and interactions within the activity system), the community and the division of labour as the context. However AT has yet to provide a language with which to analyse and describe these aspects of activity in terms which can also be applied to the modalities of discursive practice that are produced. Bernstein’s work provides one way forward in the quest for such a language of description.

As noted above, different modalities of schooling may be described in terms of the relationship between the relations of power and control which gives rise to distinctive discursive artefacts. For example, where the theory of instruction gives rise to a strong classification and strong framing of the pedagogic practice it is expected that there will be a separation of discourses (school subjects), an emphasis upon acquisition of specialized skills, the teacher will be dominant in the formulation of intended learning and the pupils are constrained by the teacher’s practice. The relatively strong control on the pupils’ learning, itself, acts as a means of maintaining order in the context in which the learning takes place. This form of the instructional discourse contains regulative functions. With strong classification and framing the social relations between teachers and pupils will be more asymmetrical, that is, more clearly hierarchical. In this instance the regulative discourse and its practice is more explicit and distinguishable from the instructional discourse. Where the theory of instruction gives rise to a weak classification and weak framing of the practice then children will be encour-

aged to be active in the classroom, to undertake enquiries and perhaps to work in groups at their own pace. Here the relations between teacher and pupils will have the appearance of being more symmetrical. In these circumstances it is difficult to separate instructional discourse from regulative discourse as these are mutually embedded.

The language that Bernstein has developed, uniquely, allows researchers to take measures of institutional modality. That is to describe and position the discursive, organizational and interactional practice of the institution. Through the concepts of classification and framing Bernstein provides the language of description for moving from those issues that AT handles as rules, community and division of labour to the discursive tools or artifacts that are produced and deployed within an activity. Research may then seek to investigate the connections between the rules the children use to make sense of their pedagogic world and the modality of that world. The curriculum may then be analyzed as an example of a social division of labour and pedagogic practice as its constituent social relations through which the specialization of that social division (subjects, units of the curriculum) are transmitted and expected to be acquired. Power may be spoken of in terms of classification which is manifested in category relations which themselves generate recognition rules. Control which may be spoken of in terms of framing which is manifested in pedagogic communication governed by realisation rules. The distribution of power and principles of control differently specialise structural features and their pedagogic communicative relays.



## Empirical example: Subject specific communicative competences

The study I wish to discuss focused on the relation between school and classroom organization and pupils' ability to realize criteria of communicative competence generated by specific discourses in schools displaying variation in organizational form. Full details are available in Daniels (1995). The study was replicated and extended by English (2005).

The empirical focus of the study was on the extent to which boundaries between subject categories are distinguishable by children and the extent to which they produce speech which constitutes a realization of these boundaries. The focus was thus on a form of discrimination which is not formally or informally taught. Thus concern was with a form of textual production which must be tacitly inferred.

The sample of institutional sites was comprised of four special schools catering for pupils, designated as having moderate learning difficulties, with adjoining catchment areas in one Local Education Authority. Each school was situated in a residential area of a town and drew 120 pupils in the age range (4-16) from a mixed urban and rural catchment area.

## Model of description

In order to create a description of the schools which carried with it predictions for speech usage, the boundaries between subjects, distinctions between teachers, and schools as organisations were considered. A general model of description was developed as shown in figure 1.

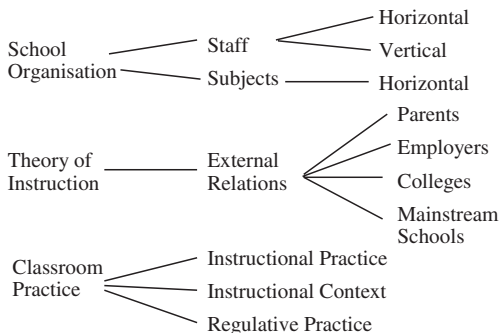
From this general model attributes relevant to the research were selected. The point of departure was the theory of instruction. As Bernstein (2000) states:

“The theory of instruction is a crucial recontextualized discourse as it regulates the orderings of pedagogic practice, constructs the model of the pedagogic subject (the acquirer), the model of the transmitter, the model of the pedagogic context and the model of communicative pedagogic competence.” (Bernstein, 2000, p.14)

It was argued that the organization of the staff, pupils and use of specialised discourses should be in direct relation to the theory of instruction. The school will be organized so as to allow the required theory to be put into practice. Each level of school organization will have its own division of labour (classification) and its own social relation (framing).

Where the theory of instruction gives rise to a *strong classification and strong framing* of the pedagogic practice it is expected that there will be a separation of discourses (school subjects), an emphasis upon acquisition of specialized skills, the teacher will be dominant in the formulation of intended learning and the pupils are constrained by the teacher's practice. The relatively strong control on the pupils' learning, itself, acts as a means of maintaining order in the context in which the learning takes place. The form of the instructional discourse contains regulative functions. With strong classification and framing the social relations between teachers and pupils will be more asymmetrical, that

Figure 1 Overall Model of Description



is, more clearly hierarchical. In this instance the regulative discourse and its practice is more explicit and distinguishable from the instructional discourse.

Where the theory of instruction gives rise to a *weak classification and weak framing* of the practice then children will be encouraged to be active in the classroom, to undertake enquiries and perhaps to work in groups at their own pace. Here the relations between teacher and pupils will have the appearance of being more symmetrical. In these circumstances it is difficult to separate instructional discourse from regulative discourse as these are mutually embedded.

Allowance was made for the existence of a distinction between the official theory of instruction of a school and the theory of instruction of a particular classroom. Local variation is more likely to develop when there is a low degree of central control over pedagogic practice in the school. Whilst there was variation between teachers' practice in the schools with weaker values of framing regulating teacher practice, the actual classes studied were taught by teachers who did adhere to the overall official school practice.

The schools were referred to as Temple Centre, Abbey, Wolf House, and Chapel Hill. The coding of each school in terms of specific classification (strength of category relation) and framing (social relation) values was based upon observation and interview data, together with the agreed statements from which each schools' theory of instruction could be reliably inferred. It cannot be over-emphasized that the assigning a value to a function was in the nature of a hypothesis. Codings and descriptions were subsequently discussed and ratified with members of staff in the schools.

## Summary of results of coding at the institutional level

It is important that whilst the concepts of classification and framing are distinguishable dimensions which may vary independently of each other the results in this study reveal a tendency for the values of each dimension to be associated. As noted above Bernstein argues that models of description may be generated in relation to the research question invoked. In this study attention was directed towards the classification and framing of classroom practice as the research question was concerned with the tacit acquisition of communicative competence within specific forms of pedagogic practice. English (2005) provides details of a much more detailed coding of classroom practice as it is transformed according to the age of pupils. In her study classification and framing values did not follow the patterning to be discussed below.

The coding of information was performed using a four level scale where ++ represents strongest and -- represents weakest. This was applied to values of classification (C) and Framing (F). Table 1 gives the coding frame for describing the classification and framing at the classroom level

*Table 1 Coding frame for describing the classification and framing at the classroom level*

<b>Strength of Classification</b>	<b>Descriptor</b>
C-- (very weak)	Children working in groups or as individuals pursuing different tasks
C-	As above but similar tasks
C+	Classwork as individuals but on different tasks
C++ (very strong)	Classwork as individuals but on same tasks
<b>Strength of Framing</b>	<b>Descriptor</b>
F-- (very weak)	Children control selection sequencing and pacing of instruction
F-	Teachers provide broad indications of areas in which children should be working
F+	Children have some influence on selection, criteria sequencing and pacing of instruction. Control largely in hands of teacher
F++ (very strong)	Teachers control selection, criteria sequencing and pacing of instruction

Clearly there were no absolute measures which applied. The purpose was to use descriptions which would demarcate the schools from one another and draw attention to important characteristics.

In terms of values of classification and framing of teachers and subjects there was a cline of schools from Temple Centre (weaker) to Wolf House (stronger). The very general overall codings were written in Instructional / Regu-

lative format as can be seen in table 2 which shows the coding of classroom practice in the four schools.

In comparison with Temple Centre, in Abbey there was a strengthening of values of classification of teachers and subjects with stronger framing governing the socialization of the pupils within the practice of the classroom. In Wolf House there was evidence of very strong classification and strong framing of teachers and subjects. The ideology of the school ap-

*Table 2. Coding of classroom practice in the four schools*

	<b>Instructional</b>	<b>Regulative</b>
<b>Temple Centre</b>	C- – F- -	F-
<b>Abbey</b>	C- F-	F-
<b>Chapel Hill</b>	C+ + F+ +	F+
<b>Wolf House</b>	C+ + F+ +	F+

pears, when viewed from the perspective of the external values of framing, to be more integrationist than Temple Centre or Abbey apart from with respect to mainstream school. In Chapel Hill there was evidence of very strong framing and strong classification over subjects

It was theoretically expected that the move from the values of classification and framing of the school and classroom to the pupils' practice is mediated through recognition and realization rules of the instructional practice. These rules are hypothesized functions of the values of classification and framing. Concretely, it was expected that children would produce different texts under different conditions of classification and framing.

The curriculum subject contexts chosen for study were those of art and mathematical/scientific studies. The selection was made because these contexts allow the maximum observable differences in language use. Ten boys from the 10-11 age group (mean 10.6, s.d. = 0.23) in the four schools were identified. There was no evidence of demographic differences between the schools. Nor was there evidence of difference between pupil populations in terms of receptive and expressive language ability in the measures held by the schools and the local authority.

## Measuring the acquisition of recognition and realisation rules

The following procedure was used in carrying out this study. Ten picture stimuli were presented to the children in each of two instructional contexts. The order of presentation and instructional context of presentation were randomized for each task and each child. Each stimulus was presented to each child in each curriculum context with the following question form:

“We are in a (Maths/Art) lesson. Your teacher is teaching you about (Maths/Art). What would your

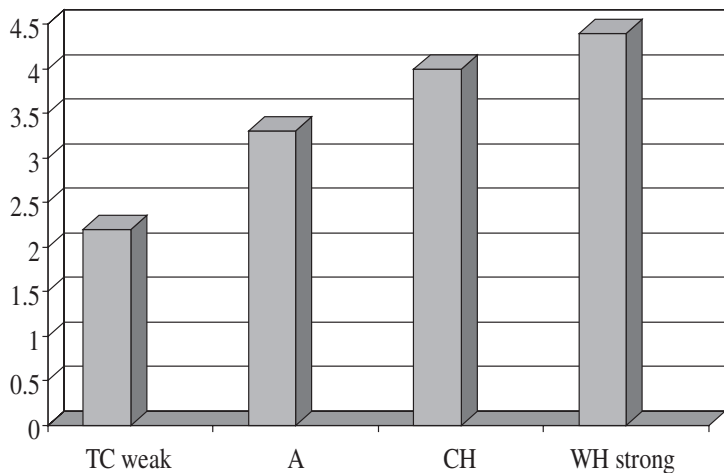
teacher like to hear you say about this picture in this lesson?”

The children's responses were recorded and subsequently transcribed. Two observers transcribed a selected sample of taped material in order to check the reliability of the transcription. For each child the pairs of statements (one from an artistic and one from a mathematical context) were pasted onto a single sheet of card. The relative order of the members of pairs for each of the ten pairs for each child was randomized. Two teacher observers were asked independently to compare the statements in each pair. One teacher was from Chapel Hill, the other from Temple Centre. As there were eight hundred paired statements to be evaluated, the process was staged over a period of two months; the order of presentation was randomized across children and schools for each teacher. For each statement pair each teacher was asked:

1. Can you tell the difference between these two statements?
2. If you can, which one do you think was made in which context?

Figure 2 provides a display of the percentage of correct discriminations agreed by both teachers in each school. Interobserver reliability varied across schools for the categorization of statement pairs between 80% and 92%. In a two-way analysis of variance with school and teacher observer as independent variables and number of correctly assigned statement pairs (correct) as the dependent variable, the observer effect was non significant ( $F = 0.395$ ;  $df = 1$ ;  $P < 0.5$ ). Observer was treated as a factor in this analysis rather than a repeated measure as the observer factor constitutes a replication. Using the conservative measure of joint agreement of correct judgement as the dependent variable, a two way anova yielded significant main effects for school. A Scheffe' test on school means at the 0.05 level of sig-

Figure 2 Percentage of correct discriminations agreed by both teachers for each school



nificance was conducted. There were significant differences between (1) Temple Centre (mean 2.7, s.d. 1.261) and Chapel Hill (mean 4.85, s.d 0.98) and (2) Temple Centre and Wolf House (mean 5.3, s.d 1.55). The position of schools relative to one another with respect to children’s ability to produce distinguishable text reflects the relative positions with respect to classification and framing.

Where the values of classification and framing of the culture of subjects were strong, the children realized the criteria of communicative competence held by their teachers with respect to discrimination between subjects to a greater extent than when, in a school such as Temple Centre values of classification and framing were weak. The individual measures of expressive language ability would suggest that the school differences revealed in the study are not attributable to individual differences. A high level of agreement of teacher evaluation is suggestive of a common basis of understanding as to the language of school subjects. The implication being that it is neither the ability of the pupils nor teacher capacity/understanding that conditions the variations in school responses, rather the responses are modulated by

the schools themselves. The study confirmed a relation between organizational form and the possession of realization rules.

### Discussion

My argument in this paper has been that the common intellectual roots of AT and Bernsteinian theory provide a platform for the development of AT. Bernstein seeks to theorise the ways in which the dominating distribution of power and principles of control generate, distribute, reproduce and legitimise dominating and dominated principles of communication which in turn regulate relations within and between social groups and thence produce a distribution of forms of pedagogic consciousness. This account of social formation seeks to understand semiotic mediation in terms of the cultural formation of discursive practice. Engestrom’s (1993, 99) development of AT seeks to analyse contradictions between rules, community and division of labour and cultural artefacts but does not appear to benefit from a language of analysis and description that permit a cultural artefact (such as discourse) to be analysed in terms of

the cultural specificities of its production. In one sense the artefact is not easily seen as a cultural product. Bernstein could help us to 'see' institutions in talk as we study activity in institutions.

The empirical work discussed in this paper focused on rules of speech in pedagogic contexts which are rarely explicitly taught. For example, pupils are rarely formally taught how to recognize and realize (produce) subject specific speech, e.g. to recognize and/or to make a statement which counts as an artistic statement or a scientific statement. It is even rarer for them to be given explicit lessons in their difference. Children have to realize different communicative competences in the different schools, although they may enter school with shared competences and recognition rules of subject specific discourses. This finding echoes that of Foley.

"What clearly showed up was that the restriction in teaching of a limited number of writing type activities (genres) was denying the child the opportunity of educational success. Whereas the introduction of a genre-based approach to the development of writing which gives exposure to a wide range of genres gives access to writing as a tool for entry into the culture." (Foley, 1991, p. 32)

The major strength of the investigation was that it provided a body of evidence that strongly suggests a relation between the macro structure of school organization and the micro practices of individual pupils. This research sought to establish the relationship between modalities of pedagogic practice (in terms of their classification and framing values) and the distribution of recognition and realisation rules for the construction of an appropriate text. At the institutional level there is some evidence of the relation between the pedagogic code and acquisition of the rules which underly specific forms of communicative competence.

In terms of the original Vygotskian thesis there is also the more general question as to

whether speech which embodies specialised scientific concepts within a curriculum subject constitutes a specialised psychological tool. Foley is clear in his answer to this question:

"... is to see technicality and abstraction as tools (in the Vygotskian sense) with which to explore the subject areas of the curriculum. The student, therefore has to learn to marshal the language of technicality and abstraction in ways appropriate to each discipline. The special registers of the subject areas of the school curriculum should reflect how those registers are used in real life as these have evolved as ways of getting on with different kinds of work in the world. Knowledge of specialised registers is a powerful means of access into society and therefore needs to be taught as this gives the student conscious control, at least to some degree, of these technologies." (Foley, 1991, p. 32)

The suggestion is that different types of schooling give rise to different types of effect carries with it questions of structural fitness for purpose. The analytic tools of some forms of social and educational psychology are blunted by their inability to investigate socio-institutional effects. Similarly the gaze of sociologically inspired policy studies is averted from effects on individuals. The development of a socially extended AT model offers the possibility of understanding the consequences of specific policy developments at the level of individual effects. The use of units of analysis which are conceptualised in terms of the use of psychological tools in contexts raises questions of differences between contexts. Differences in the structure of pedagogic practices constitute differences in contexts which are of semiotic significance. Bernstein both theorises the semiotics of the transmission and provides a language with which differences in structure can be brought to the focus of empirical studies of individual acquisition. A development of Bernstein's thesis offers the potential of an appropriate form of sociological theory to the AT enterprise.

Although tentative, the data provide some

grounds for increased acceptance of an extended AT model of analysis. This study may be seen to support suggestions that:

- Bernstein's model provides a way of understanding school structure in such a way that the 'culturally specific nature of schools' may be given close attention.
- Perceptions of social behaviour may be linked to schools viewed as structured agencies of cultural transmission and that these may mediate specific forms of social and psychological life in distinct ways.
- Modes of thinking evolve as integral systems of motives, goals, values, and beliefs that are closely tied to concrete forms of social practice

Further development and research may yield an important framework for developing a greater understanding of school 'cultures' and the ways in which they affect pupils' construction of reality. Bernstein (2000) paid very close attention to how the everyday discourse mediates mental dispositions, tendencies to respond to situations in certain ways and how it puts in place beliefs about the world one lives in, including both about phenomena that are supposedly in nature and those which are said to be in our culture. In order to understand and investigate these processes there is an urgent need to refine a language of description within AT which allows us to 'see' institutions as they do their psychological work through the discursive practices which they shape and other, more invisible, means of mediation. When this is combined with AT's attention to the objects of activity and the analysis of emergent contradictions in networks of activity systems then researchers will have an enhanced possibility of making processes of institutional regulation empirically visible.

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