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Understanding formative assessment in extended classroom curricular interaction

Gulliver, John

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**UNDERSTANDING FORMATIVE ASSESSMENT IN
EXTENDED CLASSROOM CURRICULAR INTERACTION**

VOLUME 1: THESIS

by

JOHN GULLIVER

**A thesis submitted to the University of Plymouth in part fulfilment for
the degree of**

DOCTOR OF PHILOSOPHY

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ABSTRACT

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ABSTRACT

JOHN RICHARD GULLIVER

UNDERSTANDING FORMATIVE ASSESSMENT IN EXTENDED CLASSROOM CURRICULAR INTERACTION

This thesis relates to the debates about assessment in education that marked the final years of the 20th century. It attends to the assertion, widely made in policy pronouncements within and beyond the UK, at every level of the education system, that assessment is an integral part of teaching, pronouncements seen by some writers as rhetoric-driven and atheoretical. It focuses in particular on formative assessment, with its underlying assumption that, to be effective, teaching must match the cognitive requirements of learners.

The study examines the psychological and epistemological foundations of this assertion, contends that both are problematic, and confirms that advances in theoretical understanding are required. It argues that, to secure these advances, laboratory-based investigations of tutoring must be complemented by studies of what proficient teachers do in complex classroom settings. At the centre of this work is one such investigation, a case study of one teacher's practice in relation to the humanities curriculum within an English primary school. The enquiry is in the interpretive tradition, in that the understandings developed are founded on the perceptions of the teacher involved.

With regard to this teacher, the principal findings are four. Matching involves the continuous calibration of teaching action to perceptions of learners' needs within extended interaction, not discrete assessment encounters. His evaluative concerns involve fine discriminations of both thinking and feeling. What is involved is ultimately understandable in terms of his broad educational philosophy. In this sense, his formative assessment practice is integral to his teaching.

In this light, it is suggested that efforts to shape an adequate theory of formative assessment that is relevant to classroom settings within a social constructivist framework may require to embrace extended teacher-pupil interaction as well as discrete assessment encounters. This points to a need for a reconceptualisation of formative assessment, placing teacher consciousness at its centre.

ABBREVIATIONS

The following are the abbreviations most extensively used in this thesis:

i) government and other official bodies:

DES	Department of Education and Science
DfE	Department for Education
DfEE	Department for Education and Employment
HMSO	Her Majesty's Stationery Office
LEA	Local Education Authority
NCC	National Curriculum Council
OFSTED	Office for Standards in Education
QCA	Qualifications and Curriculum Authority
SCAA	School Curriculum and Assessment Authority
SEAC	Schools Examinations and Assessment Council
TGAT	Task Group on Assessment and Testing

Others, less frequently used, are introduced as they arise.

ii) for referencing (general):

ibid.	in the same place, by which I mean on the same page of a work cited in the immediately preceding text;
op. cit.	work already cited in closely preceding text, but not with regard to the same page.

iii) for referencing (transcripts of discourses, commentaries)

PA	Photo Album
R1	First reflective discourse
R2	Second reflective discourse
SaBk	Saraswati Puja book discourse
SaDem	Saraswati Puja demonstration discourse
SR	Stimulated commentary

NAMES

Throughout this thesis, the names used for the children and places are fictional.

CONTENTS

This work is in two volumes. Volume 1 contains the thesis. Its contents are listed on the pages that immediately follow. All other material, with the exception of the video and audio tapes used for data collection, is contained in the separate, but linked, appendices that form Volume 2. The content of the latter is set out, as far as possible, to match the structure of the thesis.

The tables are listed individually in the Contents section for this volume, but appear in full in the appendices.

The video and audio tapes are retained, in their entirety and indefinitely, by the author for reference or further investigative purposes.

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AUTHOR'S DECLARATION

At no time during the registration for the Degree of Doctor of Philosophy has the author been registered for any other University award.

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Jon Gullies
31st December 2003

INTRODUCTION

This is a study of a teacher's evaluative thinking as it relates to pupils' learning in everyday curriculum activity in an English primary school. Its origins lie in my professional circumstances in the late 1980s and early 90s and in the tensions I perceived between what I was called on to do and the conceptions of curriculum, teaching and learning I had developed throughout my career in education.

At the time I was employed by one of the larger Local Education Authorities (LEAs) as its Adviser for Primary English. I had held this position for nearly ten years, none of which lacked challenge. By the late 80s, however, these were coming ever more rapidly. They were associated with a series of government-sponsored publications, beginning with a consultation document (DES, 1987a) setting out in broad terms the proposed components and assessment arrangements for the National Curriculum. Following this was the main report of the Task Group on Assessment and Testing (the 'TGAT Report', DES, 1988a), which made more detailed proposals for the arrangement and functions of assessment within the proposed curriculum. Then came proposals for the attainment targets and programmes of study for its three 'core subjects'. Of these, I was directly concerned with those for English (DES, 1988b), but, for reasons made apparent later, also took an interest in the proposals for the other areas.

These proposals, both individually and collectively, brought about a fundamental change in my professional circumstances. Formerly, I had enjoyed a degree of autonomy in what I did. It would be inaccurate to say that this was total. I worked with colleagues with other curriculum specialisms and with teachers, administrators and lay people, many of whom shared conceptions of primary education that were like my own. Others, however, had expectations which differed from mine and which I could not ignore. Equally, I did not operate in an intellectual vacuum, but

rather in a context in which primary education was constantly being rethought, and my views were changing with it. Thus, while I have never put his ideas entirely to one side, I suspect that the thrill I experienced when I first met the 'progressive' writings of Schiller (eg., in Griffin-Beale, 1979) would not have been felt to the same degree had I met them a decade later. Instead, I was increasingly influenced by those who were concerned with how curriculum might contribute to the development of children's understanding of themselves and their world.

I read, and reread, *Toward a Theory of Instruction* (Bruner, 1967), becoming interested in its author's curricular thinking long before I was aware of his work on cognition, and was excited by what I saw as its later practical off-shoots, such as *Place and Time with Children Five to Nine* (Blyth, 1984). Similarly, I was influenced by *Personal and Social Education in the Curriculum* (Pring, 1984), which I regarded as complementary to the Bruner-inspired developments. Further, I took a growing interest in science education, fuelled by works like *The Pupil as Scientist?* (Driver, 1985) which raised issues of both curriculum and cognitive development that bore on more than science alone. Within my field, I subscribed to the movement associated with those who referred to 'English' as 'Language' and focused attention on the use of language - and especially writing - for thinking and learning in all areas of the curriculum (eg., Britton, 1970; Wilkinson, 1975; Smith, 1983, Wells, 1986), rather than on the structure of language or a canon of literature. Yet, for all this, I was largely free to determine my own priorities and at least to set before others a conception of my professional interest to which I had freely assented.

The advent of the Education Reform Act changed all this. First, primary teachers everywhere had no longer, in the words of one commentator, to 'invent the curriculum' (MacGilchrist, 1993, p. 121). For many I knew, this was a welcome relief. For others, it was not. My own position was complex. I was in favour of a national curriculum in principle, but not the one that was emerging. In my view, it

begged too many questions about the primacy of traditional subjects and was not founded on an explicit set of values and aims which could have given it coherence. In my own field, I welcomed the attention it gave to the development of children's knowledge about language, but was disappointed with what I saw as a retreat from concerns for the centrality of language to thinking and learning. Perhaps most significantly, I felt demotivated by what I regarded as the declarative stance of the framework in general and of its treatment of English in particular. Its statutory force made me see more clearly how much my own professional commitment stemmed from wrestling with problems of curriculum design as a teacher and with working on them with others when I became an adviser.

Within the LEA, and in common with those holding similar positions within other authorities, my work increasingly centred on promoting awareness of National Curriculum English and on helping teachers to shape activities consistent with its Programmes of Study. Entirely unexpectedly, however, my situation was transformed. Just as the LEA's curricular responsibilities were redefined by the Education Reform Act, so too were its obligations in the sphere of assessment. The key document here was the TGAT Report. The LEA Advisory Service noted two of its assertions especially. First, assessment 'should be the servant, not the master, of the curriculum' (op. cit., para. 4). Second, 'an assessment system devised for formative purposes can meet all the needs of national assessment at ages before 16' (para. 26). I attend to the notion of formative assessment in Chapter 2 of this study. Here I merely indicate that, in alighting on these points, the Advisory Service consciously prioritised matters of teaching, learning and curriculum over other functions of assessment, and was thus with integrity disposed to accept the claim that a system could indeed be built on formative grounds.

When, therefore, I was invited to set up a working party - known internally as the Formative Assessment Working Group (FAWG) - to devise an in-service programme on assessment on TGAT lines for teachers in the LEA's primary

schools, I accepted with a mixture of caution and alacrity. My caution derived from reservations I had earlier developed about the work of the Assessment of Performance Unit (APU), with which I had also been connected through my advisory activities, and from the subsequent clarification of my own priorities in the course of an LEA curriculum development project on oracy which I jointly led. They are summed up in the following passage:

The [development] group's concern stems from its initially fruitful but more recent disenchantment with the work on the assessment of oracy conducted on behalf of the APU. We have come to view its instruments as tasks designed to elicit assessable talk, instruments which are indifferent to what the talk is about and to what the participants gain from it beyond the successful completion of communicative acts. We do not deny the importance of fostering communicative competence. Our point is rather that, without an at least equal concern for what gets talked about and in what circumstances, the promotion of communicative competence draws attention away from the contribution which talk might make to children's construction of meanings and from the values which might be placed on them. Our concern is thus with the contribution of talk to the desirable cognitive, affective, aesthetic, moral and spiritual development of children. In short, it is to relate talk to the wider aims of primary education (Burgess and Gulliver, 1988, p. 79).

My co-writer and I would have written similarly about assessment relating to writing and reading.

The TGAT proposals, as I first saw them, offered a way forward from the difficulties I had perceived in the APU's instruments. In particular, the recommendation that procedures should be developed in which 'teachers' assessments over time and *in normal learning contexts* play an important part' (DES, 1988a, para. 16: my emphasis) appeared to me like a warrant for the integration of at least part of assessment activity into everyday classroom curricular activity. Assessment could, indeed, be the servant, not the master, not only of curriculum, but also of teaching. With a committee drawn from all levels of primary education and a broad spectrum of curricular interests, we set to work with a will, but in the knowledge that material had to be produced quickly. The outcome was an in-service pack which

centred on a range of children's work relating to mathematics, science and English, as these were portrayed in the National Curriculum (NC). It included a statement of principles about assessment as we then saw them and an invitation to teachers to consider how the work might be assessed, first with a view to how the children's further development might be supported, and then, by calibrating their achievements against the NC descriptors, to establish how far their mastery of the subjects involved had been established. The material was then used as a focus for in-service activity, led by the members of the working group which had produced it, throughout the LEA.

In my view, our work bore some fruits. Teachers began to talk about formative assessment. They became more familiar with the NC's level descriptors. But the venture's success was only partial. Part of the problem stemmed from the strictly limited time available for the in-service work and part on the insufficient attention we paid to the principles on which formative assessment might be based. Four other factors, however, were of more immediate importance. One was that participants found greater difficulty in calibrating the achievements of the children, as they were evident in the examples of work put before them, against the NC level descriptors than any of us had anticipated. I came to appreciate, as I had not done formerly, why moderation, 'the process of bringing individual judgments [about pupils' everyday work] into line with general standards' (DES, 1988a, para. 64) was regarded as an essential part of a national assessment system. The other three were more fundamental, although I appreciated their significance only dimly at first.

First, many judgments teachers made about the work were too complex to be easily related to the level descriptors. In consequence, many felt that their calibrations were forced, even artificial, made, as it were, after the real work of judgment had already been done. Second, in discussing ways in which the children's further learning could be supported, participants made more use of their individual

perceptions of the children's work and what it might lead to than of the frameworks provided by the level descriptors. To my subsequent regret, I made no attempt to record the teachers' comments systematically. I recall, however, the consternation it caused me when so many referred to the difficulties they faced when they tried to relate their spontaneous judgments to the descriptors. In the light of their comments, I began to wonder whether using an external assessment framework for formative purposes was as straightforward as was anticipated.

The final point, however, was possibly the most important. Throughout the LEA, and regardless of whether they had found the approach helpful or not, teachers said that assessment was something that they did all the time. It was not until long after the conclusion of this venture that I began to consider what this observation might have implied.

Meanwhile, within and beyond the LEA, the focus of attention was changing. Questions of moderation and, behind them, of accountability, were coming to the fore. From the LEA's point of view, the approach of the working party, which, as outlined above, had prioritised the formative process, was insufficiently robust to deliver the reliable information needed for the purposes of accountability. In common with many other authorities, it set up an assessment unit with a full-time staff. Stiffening the processes of moderation was its first priority. Its approach was to build an approach to formative assessment on judgments about pupils' achievements already calibrated against national criteria. The work of the original working group, which I continued to chair, however, was allowed to continue.

With the assessment unit focusing on the establishment within the LEA of a National Curriculum-related assessment system and on the issues of moderation this entailed, the working party was permitted to focus on formative assessment in daily classroom life more thoroughly and without immediate attention to the requirements of the national system. Given the perceived pressures on the LEA, it

seems in hindsight remarkable that such facility was granted. It offered an opportunity to shape an approach that we believed would rest more firmly on well-articulated and defensible principles.

The outcome was *Working with the Grain* (FAWG, 1991), a brief but tightly worded document intended to serve as a basis for in-service work with teachers. It rested on a number of key assumptions to which all members of the group came to subscribe to in the course of our work to a greater or lesser degree. Indeed many of them had been exploring them for some time in shared curriculum development work before the committee was set up. It would be disingenuous, however, to deny that I had had any influence in bringing them to their attention through work that many of us had been involved in jointly over a number of years.

The ideas were thus not merely those which the committee came to share, but also reflected key elements in my own way of thinking about teaching at the time. I make this point here to alert the reader to some of the assumptions I brought to the initial stages of this study and which to a degree have continued to play a part in my thinking ever since. In this way I hope that others will be alert to biases that may be apparent in my work in spite of my attempts to transcend them. To make this easier, I enlarge on the more important of these assumptions below, as they were manifested in *Working with the Grain*, before going on to outline what led me into this study. I shall need to make some references to the literature that influenced me at the time. Since I have more to say about this and about further works that I have since come to regard as important in this field, I present these points here in outline only. And if some of what follows is offered according to my own lights, it is not to diminish those of the many colleagues who shared in the committee's work, but rather to take responsibility for what was achieved, with all the inadequacies of my own understanding this may reveal.

The approach rested on two assertions:

Teaching works through the meeting of minds. It begins with, and constantly returns to, teachers' moment by moment endeavours to comprehend how children 'know' their world ... (FAWG, 1991).

It was manifested in five key questions which teachers could systematically apply to children's immediate learning activities or their outcomes:

- In broad terms, what is going on that has educational potential?
- What aspect of the child's learning shall we focus on?
- What specifically is the child trying to do in relation to this focus?
- How does the child appear to see things now?
- How can I help this learning to go forward?

(ibid.)

Behind these questions were assumptions about four key issues. The first involved how children 'know' about themselves and their world. The suggestion that to 'know' was 'to possess ways of remembering, recognising and thinking about what [was] familiar and to have a basis for making sense of what [was] new' (ibid.) owed much to my interpretation of Piagetian constructivism. The claim that cultures offer ways of 'knowing' and that people come to 'know' 'by coming to share in the ways of knowing which the cultures they inhabit offer' and that 'each constructs his or her own version of the 'knowledge' that is on offer' (ibid.) reflected my understanding at the time of Bruner's social constructivism.

The second assumption was about how children learn. In declaring that '[children] are active in shaping what they know' and that they 'extend and reformulate their knowledge in the light of experience and reflection, and through their links with others whose circumstances they share' (ibid.), the influence of my engagements with the works of Piaget and Bruner was again apparent. The source of my belief that children 'learn best when they have a personal commitment to knowing', however, is less clear to me. Some of its roots, I suspect, lie in my early interest in 'progressive' education and my encounters with the writings of Susan Isaacs (eg., 1932) and Sybil Marshall (1963). Others stem from introspection: I was aware then of how much more tenaciously I approached a topic when my full curiosity was

aroused, and remain so to this day.

Alongside these perspectives were philosophical influences. Within the latter field, or, more precisely, ethics, I became interested in Langford's (1985) writing about the notion of personhood and its implications for the processes and goals of education. I was interested in how respect for children as children could be reconciled with the value I increasingly placed on critical, disciplined thinking as an educational goal, a development that marked a shift away from my earlier, less questioning enthusiasm for child-centredness. I became sympathetic, for instance, to the arguments of P.S. Wilson (1971) that the spontaneous interests of learners provided a starting point for education that was both feasible (in that, through them, the learners might be led into disciplined thinking) and necessary (in that, unless they came to see the intrinsic value of such thinking, they would not be transformed by it). I was intrigued by what Pring, considering this perspective, said about what the educator had to do with the children's beliefs in such an approach:

The first stage in educating these pupils with these beliefs and these ways of thinking will be to get them to reflect critically upon their beliefs and hidden assumptions. [This] will require the development of mental habits and capacities - to question, to seek out evidence, to respect the views and criticisms of others, to clarify and to articulate ... Such critical reflection, then, must soon draw the pupil into areas in which there is already a tradition of answering and coping with such questions (Pring, 1976, p. 95).

I was similarly interested in his assertion that the beginnings of such an education had not necessarily to be located within a subject-based curriculum. It could be open-ended, and indeed needed to be if it was to engage with children's interests. I warmed to his claim that what was required, nonetheless, was guidance by others who could see the possibilities and cul-de-sacs in different lines of enquiry. This implied the involvement of teachers steeped in traditions of disciplined enquiry which could be 'both a resource for the questioning pupil and an ideal to which he might aspire' (op. cit., p. 96). I saw that these traditions could not be exclusively

identified with subjects as they were represented in schools, a recognition that coloured my stance towards the National Curriculum as it was initially developed. I found much force, too, in a further, more personal, assertion by Pring: ‘there is a sense in which the child is not being educated by my music or Latin teaching if he does not come to see the value of it, if he remains bored and alienated, possibly even less capable of finding it valuable after my attempts’ (op. cit., pp. 55, 56).

As my reading developed, I saw the roots of such notions went back at least to Dewey. The ideas thrilled me when I first encountered them and delighted me when I met them once more in later works of a less ostensibly philosophical nature, as in Edwards and Mercer’s (1987) volume on the development of understanding in the classroom. They had their outcome in *Working with the Grain* in our claims about what constitutes worthwhile knowledge, our third key issue:

Knowledge that is worthwhile is meaningful and principled. It makes sense to and is valued by the knower. It involves the development by the knower of ideas about the world and how one might act in it. It is founded on attempts to comprehend and explain, rather than on arbitrary claims. Such knowledge is commonly provisional, consciously held by the knower, sharable and developed through discourse with others (FAWG, op. cit.).

I might now place greater emphasis on the disciplined mind, rather than on knowledge, as a goal. I suspect, but cannot be certain, that the weight given to knowledge in the National Curriculum exercised us all at the time and led us to consider how one might distinguish between what was worthwhile and what was not. I have no doubt, however, that Pring’s work influenced in my aspiration to ensure that the roots of *Working with the Grain* lay in soil that was independent of the particular National Curriculum with which we were faced. So, too, am I aware of its influence on the focus of my later research.

The final issue involved assumptions about teaching. What was portrayed drew on

the understanding I had made, and shared with the group, of two key ideas. One, drawn from commentaries on Piaget, rather than his writings directly, involved the significance of cognitive dissonance to learning. The other involved Vygotsky's 'zone of proximal development', which I had wrestled with directly in *Mind and Society* (1978, pp. 84-91 especially). In language as accessible as we could make it, this thinking was manifested in:

Teaching ... is most likely to be effective when it is directed at helping children to grasp more fully what they are on the verge of knowing already or when it offers a challenge to their current understanding which engenders a need to think about things differently (FAWG, op. cit.).

Both approaches, we contended, depended on teachers constructing informed hypotheses about children's intentions and knowledge and leading them from that point in educationally worthwhile directions. This was what we saw as working with the grain. At its heart was formative assessment, assessment whose function informed teaching decisions.

We were, I believe, quietly excited by what we had constructed. It was, so we thought, more sophisticated than anything we had seen elsewhere, more clearly based on defensible principles that we believed to be defensible and coherent. We used it as the basis for in-service activity with teachers. Wherever we did so, it met initially with a positive response. On reflection, I suspect that some of this may have reflected participants' fascination with the children's work that committee members had gathered for them to focus on and the work they had themselves brought in. Many, too, commented on how refreshing they found it to look through the work into the children's thinking in a way they had not done before.

Once again, I regret that I did not collect their comments systematically, for I then had no intention of engaging in formal research. But I did see how, in almost every case, their early excitement was not sustained. Part of this, they said, was because what we were doing was not meeting their felt needs, which were increasingly

generated by the obligations placed on them to assess children by the NC criteria with which they were still only partially familiar. Part of it, they said, reflected the expectations placed on them to build the outcomes of their NC-related assessments into their plans for their pupils' further work. We were not addressing their difficulties in doing this. Some, astutely, but very chasteningly, gently indicated that we were not working to our own principles, in that we were not attending to their intentions.

The most interesting comments, however, again regrettably not systematically recorded, were at first hearing curiously paradoxical. On the one hand, participants said that what they were asked to do for NC-related assessment and what we were showing them were impossible in the daily press of their classroom lives (even though they had to do the former in some way in order to satisfy those to whom they were responsible). On the other, they were assessing children all the time. As mentioned earlier, I had noted this latter comment in our first round of in-service activity. At the time, I gave it little thought. Now, as it resurfaced, this time in response to something into which we had poured so much energy, it increasingly perturbed me.

Initially, my response was to redouble my efforts. What we needed, it appeared, was better ways of engaging teachers with our material. Whatever we tried, however, met the same response. However interesting, what we suggested was not possible in daily practice. Nevertheless, they, the teachers, assessed all the time. Agonisingly slowly, for it was a painful process for me, two thoughts began to form. One was that what we were trying to do might be fundamentally flawed. We were trying to impose something on teachers that was a creation of my mind, albeit out of my reading of as much of the literature as I could reach. However sound the approach might be in my estimation, I had no warrant to believe that the principles I had espoused and encouraged others to espouse, and which I had imagined to have such impeccable pedigrees, could have direct application, individually or in

combination, to anything so complex as real classroom life. At the time, I had not encountered the writings of Schön, and was unaware that others had recognised the weakness of such assumptions long before.

The other was that there might be something in teachers' claims that they were assessing all the time. Having first ignored their claim and then rationalised it on the basis that it was either superficial or a means of avoiding engagement with the deeper issues to which we thought we were privy, I began to wonder what teachers meant. None I asked was able to tell me. They simply did it, describing their action as 'natural' or 'intuitive'.

By this time, I had retired from my LEA post and undertaken some lecturing work at the University of Plymouth. I wanted to engage in research in the field of formative assessment in which I was so interested and in which my own endeavours had ultimately borne so little fruit. When I made my first, uncertain proposals, however, I was a long way from articulating the one question that was begged by my wonderings: what is it that teachers do when they 'assess all the time'?

I knew that I wanted to study how teachers interpret and respond to pupils' learning in continuing classroom life. More particularly, I wanted to know how teachers form ideas about pupils' learning on which they build for teaching purposes. I wanted, too, to know how they attempt to turn these ideas to educative advantage and how their efforts influence pupils' learning. All these questions, except for the one posed in my previous paragraph, were entered on my proposal form without my recognising what a huge task they implied. Nor did I perceive how difficult it would be to gain answers to any of the questions, let alone the one that needed to be asked first.

I would now describe the whole venture, with its reading, false trails, tentative and

then more confident, but ultimately confounded, empirical activity and its constant efforts to make sense of all I encountered, as a journey towards understanding the significance of that apparently simple question: what is it that teachers do when they ‘assess all the time’? What follows is an account of what just one of these teachers does, of what I have come to understand about it and of why I believe that it may be of wider significance.

CHAPTER 1

ASSESSMENT, TEACHING AND LEARNING

1.1 A CONVENTIONAL WISDOM

It would be an error to assume that concern within and beyond the educational community for assessment, by which I mean the identification and appraisal, or evaluation, of pupils' abilities and personal characteristics, and of their learning activity and its outcomes, was particular to the final years of the 20th century. On the contrary, on both sides of the Atlantic, no part of the century was unmarked by assessment-related activity. What changed as the years passed, primarily in response to shifting educational and political priorities, was not so much its intensity as its purposes and instruments. Thus, in the UK, intelligence tests, as developed by Burt, Spearman and Thomson in the first decades of the century, were initially employed to identify 'subnormal' children. From the 1920s onwards, in conjunction with tests of arithmetic and English, such measures were increasingly used for 'eleven-plus' selection purposes (see Gipps, 1990). With concern growing in the 40s and 50s for individual backwardness in the 'basic subjects', the attainment and diagnostic testing of reading and arithmetic (see, for example, Schonell and Schonell, 1950) came to the fore, to be followed in and beyond the 1960s by the widespread use by schools and Local Education Authorities (LEAs) of screening devices like Young's *Group Reading Test* to identify pupils thought to be in need of remedial attention (see DES, 1975). To these were added in the 70s and 80s devices of a quite different kind. Developed by the Assessment of Performance Unit, newly constituted in 1974, they reflected growing calls for information about pupil performance at local and, especially, national level, calls which later, under the aegis of the National Curriculum, were directed in the name of accountability to schools themselves (see DES, 1987a, pp. 4-5).

These measures were accompanied at every point by an extensive professional and academic literature dealing with their development, validity, reliability, use and significance. In mid-century, for example, in articulating what they termed a 'short list of selected books' on testing (Schonell and Schonell, 1950, pp. 201-202), the Schonells cited 15 works which they believed required professionals' attention. The bibliography of a teachers' guide to assessment by Gipps (1990), published forty years later, lists 163. Meanwhile, following the appearance of the report of the Task Group on Assessment and Testing (DES, 1988a), a body established to make recommendations for a system of assessment that would form a foundation for the National Curriculum, and the publication of the latter's first subject papers, a massive programme of inservice training was set up by LEAs throughout the country. In 1990, for example, Devon, a typical large authority, set up whole-day training sessions for every teacher in its 450 primary schools. These sessions, and similar ones provided by other LEAs, were the precursors of development and dissemination programmes that were to run throughout the decade.

For Broadfoot, all this activity amounted to 'a tidal wave of development and evaluation' (Broadfoot, 1990, p. 199) that was sweeping through the educational system. Two years on, Desforges wrote in similar terms: a 'tide of assessment' was everywhere apparent (1992, p. 69). These commentators were referring to both the practical activity of the time and to published writings of all kinds that bore on assessment. Reference to even a small selection of the latter appearing at the time suggests that their metaphors were not inappropriate: Association for Science Education et al., 1990; Glaser, 1990; Horton (Ed.), 1990; Kelly, A.V., 1990; Schools Examinations and Assessment Council, 1990 and 1991; Brown 1991; Conner, 1991; DES, 1991; Harlen and Qualter, 1991; National Primary Centre, 1991. A further selection from the subsequent year hints that, keeping to the metaphor, the tide had yet to slacken: Drummond, 1993; Eisner, 1993; McCallum et al., 1993; Mitchell and Koshy, 1993; Wiliam, 1993; Willis, 1993.

Broadfoot and Desforbes, however, were less concerned about the extent of the literature and its associated activity than with its significance. For the former, much was ‘perilously atheoretical’ (op. cit., p. 199). For Desforbes, it amounted to an obsession that advanced on rhetoric:

Clichés have become self evident truths. ‘Teachers cannot teach without assessment’. ‘We have to be publicly accountable. Assessment is a means to this end’. ‘Assessment will drive up standards’ (Desforbes, 1992, p. 68).

Such bold charges need to be treated with caution, a matter that I take up later. For the moment, it is enough to point out that underlying much of what Broadfoot saw as atheoretical development and Desforbes as rhetoric-driven activity were assumed connections between assessment, teaching and learning. They were spelled out most conspicuously in a range of papers stemming from government-funded agencies (to be referred to from here, for convenience, as ‘policy’ declarations). Of these, one, emanating from TGAT, was seminal in its influence. In a few brief sentences, it set out two key propositions relating assessment to classroom practice and the promotion of learning. ‘Promoting children’s learning’, it firstly asserted, ‘is a principal aim of schools. Assessment lies at the heart of this process’ (DES, 1988a, para. 3). Secondly, assessment was integral to teaching, not a ‘bolt-on’. It was a process ‘to be incorporated systematically into teaching strategies and practices at all levels’ (para. 4). These propositions were subsequently echoed in policy-related prescriptions for educational practice practice at every level.

Thus, in the first of its *Curriculum Guidance* papers, the National Curriculum Council (NCC), an agency formed to coordinate national curriculum design, repeated the propositions that assessment was at the heart of the promotion of learning and integral to teaching, if not word for word, then with no more amendment than was needed to link them to the emerging national framework. Assessment, it said, was ‘always part of teaching’. It was ‘central to the effective implementation of the National Curriculum’ (NCC, 1989, p. 14). A similar thrust

was visible in publications for teacher guidance from the Schools Examinations and Assessment Council (SEAC), an organisation established to complement the NCC's work by overseeing assessment within the National Curriculum. One, produced for it by the STAIR Consortium, had as its stated aim, 'to help teachers to further the progress of all pupils' (SEAC, 1990, Foreword). 'Teaching, learning and assessment', it asserted, 'are interrelated. Assessment should form a natural part of teaching and learning activities' (op. cit., p. 9).

Two years later, in a publication intended to 'provide a concise and accurate introduction to the language, concepts and structure of the statutory curriculum' (NCC, 1992, Foreword), the NCC reaffirmed its position. Assessment, it asserted, was not a separate activity, but 'part of everyday teaching and learning'. Its main purpose was to enable teachers to:

build up a picture of pupils' achievements over each key stage in relation to the National Curriculum, *in order to take pupils forward in their learning*. (op. cit., p. 10; my emphasis).

In the same year, the Office for Standards in Education (OFSTED), set up to monitor and comment on the performance of all levels of school activity in the light of national policy, issued its *Handbook for the Inspection of Schools*, a manual dedicated to support the identification of 'strengths and weaknesses in schools in order that they may improve the quality of education offered and raise the standards achieved by their pupils' (OFSTED, 1992: Introduction, p.1). It articulated explicit criteria against which strengths were to be judged. Among other things, where practice was to be regarded as good, assessments would be 'systematically recorded and *used to support learning*' (op. cit., Part 4, p.24). More than this, it spelled out the assumptions on which this criterion was based. In-class assessment, it asserted, was 'part of teaching'. It contributed to judgments about '... pupils' *readiness to progress to new work*' (p. 22; both emphases). In such ways, by the early 90s, the primary engines of state educational policy - the

curriculum designers (the NCC); the assessors (SEAC); the monitors (OFSTED) - had become as one. In policy, assessment, teaching and learning were inextricably bound.

In the years that followed, the core policy was not so much amended as fleshed out, with broad assertions of principle giving way to detailed prescriptions for practice. For example, by July 1997, primary schools were required to assess and record pupils' attainments at the end of Key Stage 2 (i.e., for 11 year olds) against national criteria in English, mathematics and science. Secondary schools could use the outcomes for purposes ranging from '[finding the] relative strengths and weaknesses within a subject, both for cohorts of pupils and individuals' to '[planning] work at an appropriate level for each aspect of a subject ...' (SCAA, 1997, pp. 4,5). Assessment, record keeping and reporting, in short, were promoted as tools for smoothing pupils' passage between education's primary and secondary phases.

Meanwhile, through the activities of what was to become the Teacher Training Agency, the policy makers embraced teacher preparation. In this sphere, as in others, the new specificity of application was marked. To qualify, trainees had to demonstrate that they could 'assess and record each pupil's progress systematically, including through focused observation, questioning, testing and marking' (DfEE 1998, p. 15). They were required to show that they could use their records to 'check that pupils [had] understood and completed the work set' (ibid), and much more besides, all of a commensurate degree of specificity.

To these policy-driven prescriptions, a further dimension was to be added. In common with public services generally in the latter part of the decade and in the first years of the next, the education sector has increasingly been run on managerialist principles. Drawn from industry, planning and target setting were at the core. This has raised assessment to even greater prominence. Nowhere is this

more apparent than in the documentation associated with the National Literacy Strategy (NLS) and the National Numeracy Project (NNP), two of the policy makers' flagship projects. In a framework for teaching intended for application in all schools except those able to convince the monitoring bodies that they could meet its requirements by other means, a key paper makes the position clear: 'target setting, *linked to assessment*', (QCA, 1999, p. 6: my emphasis), is central. Two years on, no practising teacher can remain unaware of the requirements of this framework, nor any recruit to the classroom not hear that the outcomes of assessment serve purposes that range from informing teachers about the needs of individual children to enabling the national government to know how far the priorities of Local Education Authorities (LEAs) are being met (ibid, pp. 8,9).

Not the least noteworthy feature of such policy-related assertions over the years is the language in which they have been couched. Even TGAT's apparently measured propositions that assessment '*can* provide a framework in which educational objectives may be set' and '*can* yield a basis for planning the next educational steps in response to children's needs' (DES 1988a, para. 3: my emphases) have the status of declarations of fact, not mere possibility. Successive formulations, right up to the most recent, have echoed this magisterial stance. The NLS, for example, offers no warrant for its assertion (QCA 1999, p. 6) that target setting, linked to assessment, is central to teaching. When it states that assessment enables teachers to make learning objectives familiar to children and to help them monitor their own learning (ibid), and much more, the absence of any attempt at justification can be seen, not so much as oversight, as evidence of language used to declaim and persuade from a position of authority beyond challenge.

Such language betrays no hint that there might be anything problematic about assessment. On the contrary, that teachers can check that pupils make 'demonstrable progress in their acquisition of the knowledge, skills and understanding of [a] subject', that they can 'monitor strengths and weaknesses

and use the information gained as a basis for purposeful intervention in pupils' learning' (DfEE 1998, p. 15), and much more, are by implication advanced as taken-for-granted components of teaching. The possibility of challenge, whether conceptual or empirical, is not part of the discourse.

Given their common provenance in the Department of Education and Science and its successors, it is hardly surprising that the policy statements should be so consistent in their proclamations, or that they should be framed in terms so uniformly declarative. Nor, in view of the extensive provision of assessment-related in-service training for classroom and head teachers, and for local authority advisers and inspectors, is it surprising that, as the 90s advanced, the rhetoric of the central policy makers was increasingly echoed in the handbooks of LEAs and schools alike. By 1992, for instance, one authority was declaring that:

Assessment in its many forms must not be separated from the total process of teaching and learning (Devon Education, 1992),
and, just a year later, one of its schools was asserting with equal certainty that:

The primary purpose of assessment is to support children's learning (School handbook, 1993).

OFSTED, in its turn, could claim that, on many issues of primary practice, from which assessment was not excepted, a clear consensus had emerged (OFSTED, 1993, para. 21). How far this body had itself been a factor in creating this apparent consensus is not for discussion here. Nonetheless, at the level of rhetoric at least, its claim does not appear to have lacked basis.

By the early 90s, then, it was apparent that, in written declamation at least, a conventional wisdom about assessment, teaching and learning had taken root throughout the school system, a wisdom whose shoots would strengthen throughout the rest of the decade. This, moreover, was no dormant wisdom. On the contrary, it embodied a quasi-moral force. Learning was a desirable end and

teaching the primary means of promoting it. Assessment was integral to teaching. All in favour of promoting learning had therefore to concern themselves with it.

This wisdom was of no mere marginal significance. It legitimated a nationwide programme on the part of the public policy makers of assessment instrument development and dissemination. In its preeminence in the discourse, its calls on the funds of educational institutions and its demands on people's time and energy at national, local and school level, the programme was unprecedented in size. Even by the early 90s, it had cost, according to one authority, 'millions of pounds' (Gipps, 1992, p. 277). By the end of the decade, with no sign of it halting, the sums involved would have grown considerably.

It is not only within the domain of public policy, however, that so much attention has been paid to assessment. On the contrary, the centrally induced wave of activity has been matched by the increasingly extensive efforts of curriculum developers and academics.

Perhaps the most striking example of the former was the development by the former Inner London Education Authority of its Primary Language Record (Barrs et al., 1988). A package setting out an approach to assessment and record keeping, it formed the basis for extensive in-service activity for primary school teachers and teachers in training throughout the country. Curiously for a work developed in meticulous detail, it nowhere stipulated why assessment should be undertaken or records kept. Implicit in the work, however, were two propositions. Assessment was, or at least should be, integral to teaching. Its primary function was to provide information on which teachers could base decisions about the experiences to be offered to children to support their further learning. In thrust, then, even if not in the letter, it articulated an approach which conformed to the prevailing wisdom of the interconnectedness of assessment, teaching and learning.

Meanwhile, on a wider scale, the academics were not silent. As the earlier-cited writings of Broadfoot and Desforjes exemplify, their stance was more questioning. In the main, however, it was with detail that people were concerned. The basic assumption of interconnectedness remained, both here and on the other side of the Atlantic. For Glaser (1990), for example, effective assessment was assessment that supported learning: what was needed was greater understanding of how it operated. In Scotland, where, according to one writer,

the notion of assessment which is closely integrated with the curriculum, fosters learning, improves teaching, provides valid information about what has been achieved, and facilitates sensible decision-making by teachers and children was promoted enthusiastically [by the Scottish HM Inspectorate] (Brown, 1991, p. 223),

the link had long been seen as a proper focus for research. In England, Gipps could state that:

... assessment does not stand outside teaching and learning but stands in dynamic interaction with it (Gipps, 1994, p. 15).

At times, the tone was exhortatory:

... assessment should play a critical part in any educational process ... We would argue that good education, by definition, encompasses good assessment (Murphy and Torrance, 1990, p. 12);

Yet another writer, concerned with issues of professional responsibility, called for assessment to be seen within a moral framework:

... effective assessment requires educators to make choices, in the interests of children, that are based on a coherent set of principles, which are themselves an expression of each educator's core values. As these choices are made, and translated into daily classroom practice, the teachers are exercising ... their responsibility for children's learning ... (Drummond, 1993, pp. 187-188)

While it would be inappropriate to label the commitment of the academic communities as obsessive, the energies they devoted to this concern were

prodigious. The inauguration of a study group on assessment by the British Educational Research Association midway through the period under review served only to intensify them yet further.

Meanwhile, a further thread was added to the web. In 1992, the Department of Education and Science (DES) issued a discussion paper on curriculum organisation and classroom practice in primary schools (Alexander et al., 1992). It was a brief but wide-ranging publication, dealing with more than assessment. Nevertheless, it saw the development of more effective assessment practice as central to the improvement of teaching. Linking assessment practice to classroom management, it asserted that teachers had to:

... create, through efficient and economic classroom organisation, the time and opportunity for assessment and diagnosis to take place ... (para. 137).

Unusually for the DES, the authorship of this paper was explicitly acknowledged: Alexander, a university Professor of Primary Education; Rose, the Chief Inspector of Her Majesty's Inspectorate of the time; and Woodhead, then Chief Executive of the National Curriculum Council. The academic, the inspectorial and the advisory worlds, it appeared, were as one in their advocacy of what was required to improve standards in the education system.

With regard to policy, as revealed by central and avowedly authoritative forces, taken up with zeal by local authorities and schools, and investigated by the main stream of academics, Desforges's claim that there was an obsession with assessment was well founded and remains so today. That the focus of attention gradually shifted from broad statements of principle to detailed matters of practice might be seen primarily as evidence that, according to the conventional wisdom of the time, deeper questions about the relationships between assessment, teaching and learning were of little concern. That there were problems of a theoretical kind, as indicated by Broadfoot, let alone practical, remains to be considered.

1.2 THE CONVENTIONAL WISDOM CHALLENGED

Desforges's indication of the rhetorical status of this conventional wisdom, however, was not directed merely at the ubiquity of its assertion. Like Broadfoot, what exercised him was what he saw as its problematic nature:

The real truth is that the link between assessment and learning has yet to be empirically or even logically established (Desforges, 1992, p. 68).

This was a bolder claim. It created a curious situation. On the one hand, the conventional wisdom that underpinned the activities of central policy makers (at least in rhetoric), curriculum developers and many highly respected academics alike, linked assessment, teaching and learning. On the other, from the ranks of the academics themselves, challenges were being made to the foundations on which so many built. It would be easy to dismiss these challenges as idiosyncratic. There are, however, good reasons for taking them seriously.

Let us begin with the logical warrant, or, as Desforges would have it, its absence. The first thing to notice here is that, apart from any appraisals students may make of their own learning, assessment is an activity commonly seen to be part of teaching. To claim that assessment and learning are connected thus depends on the prior claim of a connection between teaching and learning, activities so commonly bracketed together that they are often regarded as two sides of the same coin.

The conception does not survive analysis. Learning, perhaps even a great deal of learning, occurs without teaching. However much of it may take place within a social context, in so far as it involves changes in the learner, it is an individual occurrence. Conceptually, moreover, it is independent of teaching. That it should

from time to time occur in conditions created by teaching is a merely contingent matter. The concept of teaching, on the other hand, is dependent on the concept of learning, for teaching is a social activity undertaken with a view to enabling others to learn. It involves engaging in a repertoire of activities like explaining and demonstrating which makes available to others something which they, in some way, can make their own. Without the possibility of learning, the concept of teaching is meaningless. Of itself, however, it does not entail learning. Teaching can fail, in so far as no learning may occur, but this is not to say that no teaching is done, only that it is unsuccessful. The logical distinction between teaching and learning remains.

More than this, assessment may occur entirely independently of teaching, and teaching may be undertaken without assessment. Whether such teaching is effective is again a merely contingent matter. Assessment is thus a possible component of the repertoire of teaching activity, not one logically entailed by it. And if there is no logical necessity for teaching to entail learning, and assessment is merely a possible component of teaching, then assessment and learning are not logically connected. At most, the connection is contingent. The parallel here is with racing and winning. To race is to act with an aspiration to win. To win, however, involves meeting a success criterion. Without the possibility of winning, one would not be racing at all. Unfortunately, where teaching is concerned, just one term must serve for both the aspiration and its occasional successful outcome. Desforges's denial of the logical warrant for a connection between assessment and learning is justified.

Although abstruse, this logical separation of assessment from learning is significant. It enables us to see the force of the assertions noted above about assessment being 'at the heart' of the promotion of learning or an 'integral part' of teaching. Lacking logical necessity, such declarations are either normative or categorical. In their implicitly normative guise, they assert that assessment *ought* to be part of

teaching. In their categorical thrust, they declare that assessment *is* part of it. More than this, they imply that assessment is part of *effective* teaching. Since these claims are demonstrably not logically necessary, the burden of justification must be taken up by those who make them. Such justification has to be empirical. It is in relation to this need for evidence, and therefore for research, that the particular significance of Desforges's assertion lies.

The thrust of the research, however, had to be settled. Sadler (1989), observing the domination of matters of validity and reliability in twenty-five years of publications about assessment, called for attention to be paid to formative assessment, a function of assessment we shall later see to be commonly linked to the promotion of learning. By the mid-90s, many saw that to be happening. Gipps, for example, pointed to 'a paradigm shift' in the culture of assessment thinking from psychometric concerns to what she termed 'educational assessment' (1994, p. 1).

Alongside this shift, however, but from a different quarter of the academic community, questions of a quite different kind were being asked. Substantial conceptual reservations about the TGAT framework began to be raised, for example, by Kelly (1990) and Davis (1990). Indeed, throughout the decade, but especially in a monograph towards its close, Davis (1998) subjected the notion of educational assessment to much needed philosophical examination. Between them, these and other works made it clear that more rigorous scrutiny of the conventional wisdom of the interconnectedness of assessment, teaching and learning was required.

Conventional wisdom is not necessarily without basis, nor are the pronouncements of academics always right. In the light of the widespread beliefs and assertions noted above, however, any indication of the problematic nature of current assumptions about assessment must be taken seriously, for much that relates to public policy, classroom practice and educational research hangs on their validity.

In the face of the still-growing influence of the central policy makers, Gipps's observations, along with the perspectives opened up by Davis, give Broadfoot and Desforges's assertions fresh and pressing relevance.

CHAPTER 2

THE PLACE OF FORMATIVE ASSESSMENT

2.1 CLAIMS FOR FORMATIVE ASSESSMENT

One way of examining a challenge to a conventional wisdom is to direct attention towards the grounds on which it is most insistently claimed. In the field with which I am concerned here, however, there is at once a problem. Assessment is not one thing, but many. It ranges in form from tests designed externally to the classroom to the informal observation by teachers of pupils' activities within it. It operates with complex and not necessarily compatible concepts like performance, achievement, schemas, progression and many more besides. Most importantly, it serves many purposes. I take Eisner's assertion that assessment should '... be regarded in the light of the educational functions it is intended to perform' (Eisner, 1993, p. 224) as my starting point and suggest that one of its claimed roles is linked to teaching and learning with particular directness. In this chapter and the one that follows, I further suggest that, in relation to this role, there is more that is problematic than is commonly recognised.

Many taxonomies for what assessment does have been proposed. Eisner himself, in a formulation he acknowledges as inexhaustive, outlines five broad functions: 'temperature-taking', by which he means ascertaining the educational health of a district or even a country; 'gate-keeping', which involves determining individual students' aptitudes for course placements; judging whether individual students have fulfilled course objectives; providing feedback on teaching; and 'programme evaluation', which he perceives to be about the quality of the educational 'diet' (his word) that is provided (op. cit., pp. 224, 225). In citing six functions, Gipps (1990, pp. 14-17), like Eisner, does not claim to be exhaustive. Her nominations range from screening and diagnosis, which she sees as professional activities, to

certification and selection, regarded as managerial and societal. In between come record-keeping and feedback on performance. These, she holds, may serve both professional and managerial ends. Her list of six is short by comparison with Dockrell's seventeen (see Dockrell, 1995a, p.293). Apart from suggesting that assessment can contribute to setting expectations for learning and to the motivation of pupils, however, his proposals add detail, rather than scope, to the formulations offered by Eisner and Gipps.

By contrast, 'policy' statements have leaned towards brevity. Of them, the four-way split (formative, diagnostic, summative and evaluative) considered by TGAT (DES, 1988a, para. 23) has been the most prominent. That it had problems is readily apparent. Diagnostic assessment, by which was meant the identification of pupils' difficulties with a view to the provision of appropriate help, is perhaps best seen as a subcategory of formative assessment (to be examined more fully later), whereby pupils' positive achievements are recognised and next steps planned. Summative assessment, through which, according to TGAT (*op. cit.*, para. 23), pupils' overall achievements are systematically acknowledged, is not so much a purpose as an indication of the chronology within which information about pupils is sought. Thus a summary of their achievements or capacities is made at some distinct point, as, for example, at the end of a unit of work or an academic year. The functions these summaries are intended to serve, however, are many and varied: they range from providing parents with information about the progress of their children to affording comparisons between schools and LEAs. Evaluative assessment, by contrast, whereby aspects of a discrete part of an educational service - a school or an LEA, for example - are subjected to review with a view to facilitating general improvement, is clearly a use to which assessment is put, to which the outcomes of summative records may well contribute.

That TGAT was aware of these difficulties is apparent in its explicit indication that consideration of this particular taxonomy was required of it by its terms of

reference (op. cit., para. 23), by its admission that it could not see a clear boundary between formative and diagnostic assessment (para. 27) and by its recognition that some ends could be served by drawing on the outcomes of assessments designed primarily for different purposes (para. 25). These weaknesses in categorisation, however, have not prevented the overall conception being absorbed into the system. In religious education, for example, it quickly found a place in a teacher handbook on assessment produced by the Midlands Regional R.E. Centre (see RREC, 1991, p. 8) and in the report of the Forms of Assessment in Religious Education Project (FARE, 1991), a university-led development venture undertaken in conjunction with teachers. Here is further evidence of a policy formulation about assessment colonising the wider educational community. It is not part of my purpose here to speculate on why.

Those functions of assessment labelled by Eisner as ‘temperature-taking’, ‘gate-keeping’ and judging whether individual students have fulfilled course objectives and ‘programme evaluation’, by Gipps as screening, selection and certification, and by TGAT as summative (I ignore the problems of this formulation at this point) and evaluative, have one thing in common. Their links to teaching and to learning are indirect, or operate at one or more remove. Through ‘gate-keeping’ and selection (both functions commonly served by ‘summative’ assessment), for example, pupils’ subsequent learning opportunities may be differently determined. The particular form these opportunities take, however, will relate to the outcomes of the assessment process only in the most general way. As for evaluative assessment, the connections may be even more remote. The effects, as in modifications to the curriculum or pedagogy, may not be felt by the pupils assessed, but rather by the cohorts who follow them.

From all these, formative assessment stands apart. Just why this is so may not be immediately apparent, for accounts of the purposes of formative assessment are varied. Some are deceptively simple. For Harlen and Qualter, it is undertaken ‘to

assist learning' (1991, p.142). For Brown, it is done 'to improve the educational process' (Brown, 1991, p. 234). For one curriculum development and research group, it is intended to 'help to inform every day decisions about what to do next' (NPC, 1991, p. 1).

Others are more overtly complex. For one writer, formative assessment involves 'forms of student evaluation carried out to monitor progress with a view, where appropriate, to altering the final outcome' (Black, 1986, p.7). For another, its role is to 'assist in the learning process by providing information on pupils' strengths and weaknesses' (Torrance, 1993, p. 333). According to Gipps, it 'takes place during the course of teaching and *is used essentially to feed back into the teaching/learning process* (Gipps, 1994, p.17: my emphasis). A more extended definition, implicitly incorporating notions of feedback and explicitly connecting assessment to learning, is offered by Sadler:

Formative assessment is concerned with how judgments about the quality of student responses (performances, pieces, or works) can be used to shape and improve the student's competence by short-circuiting the randomness and inefficiency of trial-and-error learning. (Sadler, 1989, p. 120)

Most widely acknowledged of all, however, at least in this country, is the 'policy' formulation embodied in TGAT's assertion that formative assessment is undertaken:

so that the positive achievements of a pupil may be recognised and discussed and the appropriate next steps may be planned (DES, 1988a, para. 23).

For all their apparent variety, these formulations have common characteristics. Each relates to teachers' roles in engaging with children's educational activities or the outcomes of those activities. Each has three elements: the observation of children's actions; the interpretation of these actions in terms of the state of pupils' knowledge, understanding or capacities; and the evaluation of such characteristics

in relation to preexisting notions of worth. Each loops back into the processes of teaching and learning. It is this third characteristic that distinguishes formative assessment from other assessment functions.

In this 'looping back', two elements are held to be involved. Each incorporates the notion of 'feedback', by which is meant the provision of evaluative information about learners' knowledge or performance to those concerned. On the one hand, such information is fed back to the learners as indications of the success of their efforts. In some accounts (eg., Sadler, 1989), this is taken further: by making judgment criteria explicit, it is said to support the development of pupils' capacity to monitor their own work and thus to become self-directing. On the other, it is used by the teacher in the determination of further support. This notably includes the assumed need for the close adjustment of challenges, tasks and explanations to pupils' assumed levels of functioning, a practice widely referred to in the wake of successive official reports from the late 1970s onwards (see, for example, DES, 1978) as 'matching'. The notion has a fairly long history. According to one writer (Desforges, 1985), the term appears to have been coined by Hunt in his work on the application of Piagetian ideas to education. It is implicit in Ausubel's well-known but, as we shall see later, problematic claim that all of educational psychology can be reduced to a single principle:

Find out what the learner already knows and teach her accordingly
(Ausubel, 1978, p. 82).

It continues to be influential in the widely advanced prescription, noted by Desforges (1985, p. 92), that 'the cognitive demand of school materials should be matched onto, or matched with, the cognitive stage of the learner' and in the further, wider, notion that 'matching work to children entails giving them those tasks which optimally sustain motivation, confidence and progress in learning' (op. cit., p. 92). Part of his purpose, of course, was to indicate what he saw as the unhelpfulness of exhortations about match unrelated to properly articulated

theories of learning. One merit of the proposals by Gipps and Torrance that assessment approaches can be grouped in terms of their underlying theories, which will be discussed below, is that they make it easier to address this lacuna and, if not to fill it, at least to subject the ground to critical examination.

For the moment, however, it is enough to note how formative assessment is seen to be linked to learning, either directly, as the substance of feedback to pupils about how they are doing and the grounds on which it is judged, or indirectly, as feedback into the teacher's decision-making about how further learning might be supported, or as both.

Held by one writer to be 'the prime purpose of assessment' (Brown, 1991, p. 234), assessment in this guise can thus be seen to have extensive claims, at least at a rhetorical level, to a connection with teaching and, through it, with learning. It is appropriate that a critical examination of the assumed links between assessment, teaching and learning should focus especially on assessment's claimed formative roles. That examination will have to attend to what is involved, amongst other things, in making and acting on evaluations of children's knowledge or performance and to the roles claimed for feedback in the interactions between teachers and pupils. In preparation for this, however, some further ground-clearing is required.

2.2 FORMATIVE ASSESSMENT: CLAIMS FOR THEORETICAL UNDERPINNING

Whether brief or extended, the definitions of formative assessment noted above turn out on inspection to be multi-faceted. In being held, for example, to 'assist in the learning process' (Torrance, 1993, p. 333) or to relate to 'altering [its] final outcome' (Black, 1986, p. 6), they deal with what formative assessment is said to do. In referring to 'feedback' and 'feedforward' (DES, 1988a, para. 4), they point

to how it is said to do it. In employing terms like ‘knowledge’, ‘understanding’, ‘mastery’, ‘achievements’, ‘strengths and weaknesses’, ‘performance’, ‘levels of attainment’, ‘mastery’ and ‘progress’, they indicate aspects of pupils’ learning that formative assessment is claimed to focus on.

Such formulations have been, and continue to be, widely visible in policy statements, albeit frequently in ways that imply formative assessment practice, rather than make it explicit. The guidance on how inspectors should judge teaching quality, offered in the original OFSTED handbook provides an example. Where it was good, it said, there was ‘regular feedback which [helped] pupils to make *progress*’ (OFSTED, 1992, p. 21). Assessment ‘[enabled] pupils to improve their *performance*’ (p. 22) and was ‘anchored by ... Statements of Attainment which [defined] what a pupil must be able to *know, understand and do ...*’ (p. 24: my emphases throughout). A later version required inspectors to consider the extent to which teachers ‘[assessed] pupils’ work thoroughly and constructively, and [used] assessments to inform teaching’ (OFSTED, 1995, p. 66). They then had to judge whether the teachers identified the ‘*level of challenge* in the content, activities and learning resources provided for pupils of *different attainment*’ (p. 68) and how far, in their day-to-day interventions with pupils, they ‘[recognised] and [handled] *misconceptions ...* and [steered] them towards *new learning or clearer understanding*’ (p. 71: my emphases). Three years on, its specifications for the award of Qualified Teacher Status, the DfEE required trainees to demonstrate that they could ‘assess and record each pupil’s progress systematically ... and use these records to ... monitor strengths and weaknesses and use the information gained as a basis for purposeful intervention in pupils’ learning ... [and to] inform planning’ (DfEE, 1998, p. 15). Later still, the National Literacy Strategy’s guidance for teachers referred to formative assessment, but did not define it. What it called ‘short term assessment’, by which it meant ‘informal, day to day assessment in the classroom’ (QCA, 1999, p. 12), however, appeared to serve functions that matched those more commonly labelled as ‘formative’. In particular, it was linked to

teaching on the grounds that ‘teachers [needed] to know whether or not children [had] *learnt a specific objective* in order to directly inform their next teaching’ (p. 7: my emphasis) and to ‘give feedback to children on what they [had] *achieved* and what they [needed] to do to improve’ (p. 14: my emphasis).

Three things should be noted about such formulations. The first is that, embedded in them are terms, highlighted by my emphases, that warrant critical attention. What, for instance, is it to ‘know’ something? Or to judge when a pupil is in this state? Or to identify a ‘level of challenge’? Or to ‘have learnt a specific objective’? Or to ‘steer’ pupils towards new learning? Or for an observer, such as an inspector, to recognise when this is happening? Such questions beg issues of an epistemological, psychological or pedagogical nature, are not easy to answer and will be taken up as this exploration proceeds.

Secondly, they differ in their depictions of how formative assessment promotes learning. The emphasis in the 1992 OFSTED formulation, for instance, was on teachers providing ‘regular feedback’ to pupils. In 1995 it was on task differentiation and the recognition and handling of pupils’ misconceptions. In the 1998 DfEE specification, the primary focus was on teachers using systematically gathered information about the progress of individual pupils as a basis for purposeful day to day intervention in their learning and to inform planning (DfEE, 1998, p. 15). The NLS also advocated a systematic approach, but tied it to judgments about whether pupils had met specific objectives with a view to the provision of feedback and the establishment of further targets.

The third is slightly paradoxical. Each of these formulations is couched in terms of certainty. Yet, as we have just seen, there are differences of emphasis and direction between them. No hint of awareness of such differences is betrayed, however, let alone of recognition that their existence might suggest that the practice of formative assessment is in any way problematic. A plausible explanation for this

phenomenon is hinted at by Torrance, albeit in the context of an observation made with wider issues in mind:

If assessment has an educational role to play it is a good deal more complex than even well-informed educational opinion would seem to believe, and we do ourselves a disservice to pretend otherwise (Torrance, 1993, p. 333).

It is not my intention here to suggest that those who formulate policy are unaware of the problematic nature of formative assessment. Instead, I accept Torrance's point about its complexity and turn instead to a consideration why such differences may have arisen.

A claim by Sadler that much of the literature about formative assessment was 'mostly hortatory, recipe-like and atheoretic' (Sadler, 1989, p. 122) offers a starting point. It was made before the appearance of the works noted above and is overstated, for even the simplest recipes or exhortations are based on assumptions of some kind, be they tacit or explicit. And in education, as in other practices, rival theories commonly coexist, or follow one another, while the foundations of their differences go unnoticed. Nonetheless, Sadler's claim invites consideration of what, if any, the theoretical underpinnings of formative assessment might be. It is to this that I now turn.

As Torrance indicates, there is no single theory of formative assessment (1993, p. 335). Nevertheless, many argue that accounts of it commonly relate to well-established (but, as Torrance points out, often unacknowledged) traditions of psychological enquiry. In particular, Torrance himself (*op. cit.*) and Gipps (1992, 1994) propose that most approaches reflect one or other of two main schools, behaviourism and constructivism. In what follows, I outline what behaviourism and constructivism mean to these writers as a step towards a more critical examination of their possible underpinning of formative assessment. However, I go beyond Gipps and Torrance by referring to information processing, a further tradition of enquiry omitted from either's scrutiny.

The accounts of these schools offered by Gipps and Torrance are sketchy and, at some points, formulated in a manner that suggests other influences. Nonetheless, a view of how they see their effects on approaches to formative assessment can be advanced with reasonable confidence. Thus, for Gipps, some approaches rest on assumptions drawn from behaviourism. First, complex competencies are made up of discrete skills learned separately (1994, pp. 18-19). Second, learning is shaped by feedback on performance. Third, since 'complex understandings [can] occur only when elemental prerequisite learnings are mastered' (op. cit., p. 19), learning is linear and sequential. For Torrance, who does not dissent from this account, it is implicated especially in the mastery learning tradition associated with Bloom (1974) and Popham (1978, 1987). Two key principles are involved, both implicitly addressed to teachers. First:

define your objectives and teach to them quite specifically, making sure that teachers and pupils alike know what behaviour is required of them, i.e. what counts as achieving the objective (Torrance, 1993, p. 336).

Second, provide:

short-term goals, clear assessment objectives, and detailed feedback to pupils on what they have or have not achieved and what they must do to improve next time (ibid.).

The implications for practice of this tradition, as Gipps and Torrance have viewed it, are clear. Desirable knowledge can be arranged in scales of increasing complexity. For individuals, educational development can be seen in terms of the acquisition of increasingly complex knowledge and skills. Learners' attainments are visible in their performance. Their progress can be calibrated by appropriate assessment techniques against relevant scales of complexity. For the learners, information thus gained can be fed back as confirmation of their successes or failures, or as indicators of what they have still to learn. For the teachers, the developmental scales identify what they must next teach. For Torrance, such tenets were visible in

the many records of achievement schemes of the mid-to-late 1980s which 'shared a basic structure of short-term goals with fairly brief feedback to pupils' (op. cit., p. 337). For both Gipps and Torrance, they underpinned TGAT's proposals, albeit in ways that were 'insufficiently elaborated' (Gipps, 1992, p. 279) and 'mechanistic' (Torrance, 1993, p. 336).

There are problems about these accounts. Gipps's use of the term 'understandings' presupposes consciousness, or mind. So, too, does pupils knowing what behaviour is required of them, or what they must do to improve. Consciousness and mind, however, are notions avoided by the behaviourists. Gipps's and Torrance's accounts of their influences seem to be shaded with notions drawn from elsewhere. Their language hints at information processing, an enquiry tradition concerned with how humans acquire, store and retrieve knowledge. Largely based on a metaphor - and sometimes, more strictly, a model - of mind as computer, it is claimed to represent a significant step forward from behaviourism, in that it holds that knowing involves active mental processing (eg., Meadows, 1993). The presence of these currents within Gipps's and Torrance's accounts of the influence of behaviourism on formative assessment may perhaps be taken as an example of the way in which assumptions drawn from rival theories sometimes coexist even in the minds of noted experts in the field.

A second basis for formative assessment, according to these observers, is located in constructivism. While both see this as richer in potential, Torrance claims that its possibilities are unlikely to be realised without a clearer delineation of its theoretical underpinnings (op. cit., 1993, p. 337). This at once raises a problem, for constructivism comes in many varieties. Even these writers emphasise different things. Some sorting of their claims is therefore desirable.

Gipps's conception of constructivism is not easy to pin down, for references to it, both direct and indirect, are dispersed through her work. At least two emphases,

however, are apparent. One is revealed in two explicitly stated assumptions. These embody, firstly, a view of how pupils conceive of their world:

pupils have their own theories - of how things work, why the sun comes up every morning, interpretations of history etc - and that real learning involves becoming dissatisfied with this existing belief and finding [some] new concept intelligible and plausible (1994, p. 23);

and, secondly, a notion of how these conceptions, or theories, are formed. In this, pupils are cast as:

active constructors of their own world view (op. cit., p. 22).

These assumptions match what von Glaserfeld (1989, p. 182) nominates as constructivism's first principle, namely that 'knowledge is not passively received, but actively built up by the cognizing subject'. Further, they conform to what Ernest (1997, p.74) claims as the prevailing metaphor of knowing and coming to know within this paradigm. This is one of carpentry, architecture or construction work, whereby the structures of the mind are actively built by the individual from preexisting pieces, which are themselves constructed (op. cit.).

This basically Piagetian account becomes diffused, however, as Gipps's focus shifts from learners to teachers. The latter's function is, among other things, to bring the attention of their pupils to what is new or unfamiliar, and assessment used formatively is charged with contributing, in the interest of 'match', to decisions about what this should be. How the 'new' or 'unfamiliar' is conceptualised, however, is problematic. For a Piagetian, it would be a matter of experience or experiences. Gipps, however, writes of 'new *information*' being of use to pupils only in so far as it can 'be linked to the knowledge structures, or schemata, already held in [their] *long-term memory*' (1994, p. 22: my emphases). There is a problem here. Just as we find with her account of the influences of behaviourism, so does her depiction of constructivism appear to use, at least in part, ideas drawn from

information processing. While, like constructivism, this tradition holds that active mental processes are involved in knowing, it differs from it, according to Ernest (1997, p. 78), by presupposing that some knowledge acquired by humans involves information admitted from the outside, not constructed within.

Nevertheless, if these problems of interpretation are put to one side, a number of approaches to formative assessment relating to this constructivist paradigm, as it is offered by Gipps, but with a caveat shortly to be noted, are visible in the wider field. They can be seen, for example, in the Primary SPACE Research Project (Black and Harlen, 1993) and in the Assessment in Primary Science Curriculum Development and Research Project (NPC, 1990). They are even visible in OFSTED's stipulation (OFSTED, 1995, p. 66) that teachers should be judged in the light of how they handle pupils' misconceptions. The teacher's task is to interpret pupils' actions in terms of the individually-held, and possibly idiosyncratic, hypotheses or schemas which lie behind them. It is to ask, not 'What are these children's attainments?' but rather - for instance, with regard to the daily rising of the sun - 'How, just now, do they conceptualise this phenomenon?'. Then, on the basis of their hypotheses about the pupils' meanings and with reference to desirable educational goals, it is to provide the conditions in which the pupils can further refine or even reconstruct their ideas accordingly. These conditions might include exposure to new and challenging experiences or to the alternative ideas of their peers, or to constructive questioning by the teachers themselves.

Here I enter a caveat. Each of these approaches allocates major importance to the elicitation of pupils' thinking as a necessary step towards its restructuring. Each attaches significance to the subsequent exploration of different possibilities through discourse between teachers and their pupils and between the pupils themselves. Such conceptions are built on what might be termed neo-Piagetian principles. That is to say, they combine a Piagetian view of the active construction of individually held meaning out of experience with post-Piagetian ideas about the

role of linguistic interaction in the process. It should be noted that I use the term ‘neo-Piagetian’ differently here from the way in which it is sometimes employed elsewhere. Gardner (1993, p. 30), for example, uses it to refer to those who continue to hold to the assumptions of stage-theory, but extend their application to fields unexamined by Piaget, such as emotional and artistic development. In the way that I use the term, Gipps’s account appears to be neo-Piagetian.

A second emphasis is visible in Gipps’s references to ‘scaffolded’ assessment (1994, p. 27), the potential of which is also recognised by Torrance (1993, p. 337). It is founded on a number of assumptions drawn from Vygotsky and Bruner. First, with the support of someone more knowledgeable or proficient, learners can perform in ways that are beyond their unassisted capabilities. Second, in this area of heightened performance, there is a particular potential for learners to turn the help of others to their own account: in short, to internalise it as learning. This is Vygotsky’s ‘zone of proximal development’:

the distance between the [learner’s] actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. (Vygotsky, 1978, p. 86).

A further assumption, taken from Bruner and lending its name to this version of formative assessment, involves the notion that, within this zone, the tutor has ‘the critical function of “scaffolding” the learning task’ (Bruner, 1985, p. 25) so that the child can take the help she is given and make out of it something that is for her own conscious use. It might be noted, in passing, that it is the child’s activity that is scaffolded, not the assessment as the name given to the approach appears to imply.

This further variant of constructivism is seen by Torrance to provide the most ambitious interpretation of the theoretical underpinning and potential of formative assessment. Its strength, in his estimation, lies in the particulars of its account of the

role of teacher-pupil interaction. In behaviourist accounts, as depicted above, the primary function of interaction is to provide feedback about successes and failures and to indicate fresh targets for the learner to aim at. In the neo-Piagetian constructivist account shown above, interaction's role is to elicit learners' individual perceptions and to open them up to the challenge of others. In this further, social constructivist variant, the potential of teacher-pupil dialogue, according to Torrance, rests in what it can do to help children:

to comprehend and engage with *new ideas and problems* (1993, p. 336; my emphasis).

This possibility is briefly discernible in a stipulation in OFSTED's 1995 handbook that inspectors should judge how teachers handle pupils' misconceptions and '*steer* them towards new learning' (OFSTED, 1995, p. 71: my emphasis).

Those new ideas and problems mentioned by Torrance derive, it would appear, from teachers' greater awareness of the intellectual possibilities of their culture. In this conception, the teacher is cast as an intermediary between the child and the ideas and ways of being and acting of the wider society which she is entering. Or, in Bruner's striking metaphor, it is a matter of their contribution to 'the manner in which aspirant members of a culture learn from their tutors, the vicars of their culture, how to understand the world' (1985, p. 32).

The differences between the previously outlined 'neo-Piagetian' account of the basis of formative assessment and this Vygotsky/Brunerian formulation are considerable. Central to the neo-Piagetian account is a concern for children's individual meanings, or schemas. The teacher's burden in this conception is to establish what these schemas are and to engineer discourse in which differing accounts of experience are brought to light. In the Vygotsky/Brunerian formulation, what matters is not learners' independently functioning schemas so much the highest pitch of performance in any given activity, mental or otherwise,

that they can sustain with outside help.

If formative assessment is to have a role in this, it appears to relate to tutors' need to ascertain where they can most usefully help learners to grasp and utilise the social capital which is just beyond their unassisted reach. The initial function of discourse in this conception is summed up by Wood (1987). It is to enable the teacher to ascertain:

the level of task that a child is ready to undertake on the basis of what he can already do, *as long as he receives the best possible help from an adult.* (Wood, 1987, p. 242, original emphasis).

To the best of my knowledge, little has been done to show how this aspiration might be realised. Of the few incursions into the area, perhaps the attempts by Brown and Ferrara (1985) to explore the implications of Vygotsky's theory of a zone of proximal development for the dynamic assessment of learning potential have been the most painstaking. How relevant they have been to classroom practice, however, remains to be seen.

Gipps and Torrance follow the common course of assigning the work of Piaget, Vygotsky and Bruner to constructivism. There is much to justify their stance. All three subscribe to von Glaserfeld's first principle of knowledge being actively built by the cognizing subject. Bruner shares with Piaget the notion of the learner's active involvement in the construction of personal schemas. Vygotsky shares with Bruner the notion of meaning as a cultural artifact, appropriated by the individual through social interaction with others. Nonetheless, as we have seen above, this link does not amount to complete identity. Where formative assessment is concerned, placing them together without qualification serves to blur the picture rather than to clarify it. For the initial purposes of this study, I go beyond Gipps and Torrance by postulating, not two theoretical underpinnings for formative assessment, but three. The first of these is the behaviourist account. The second is

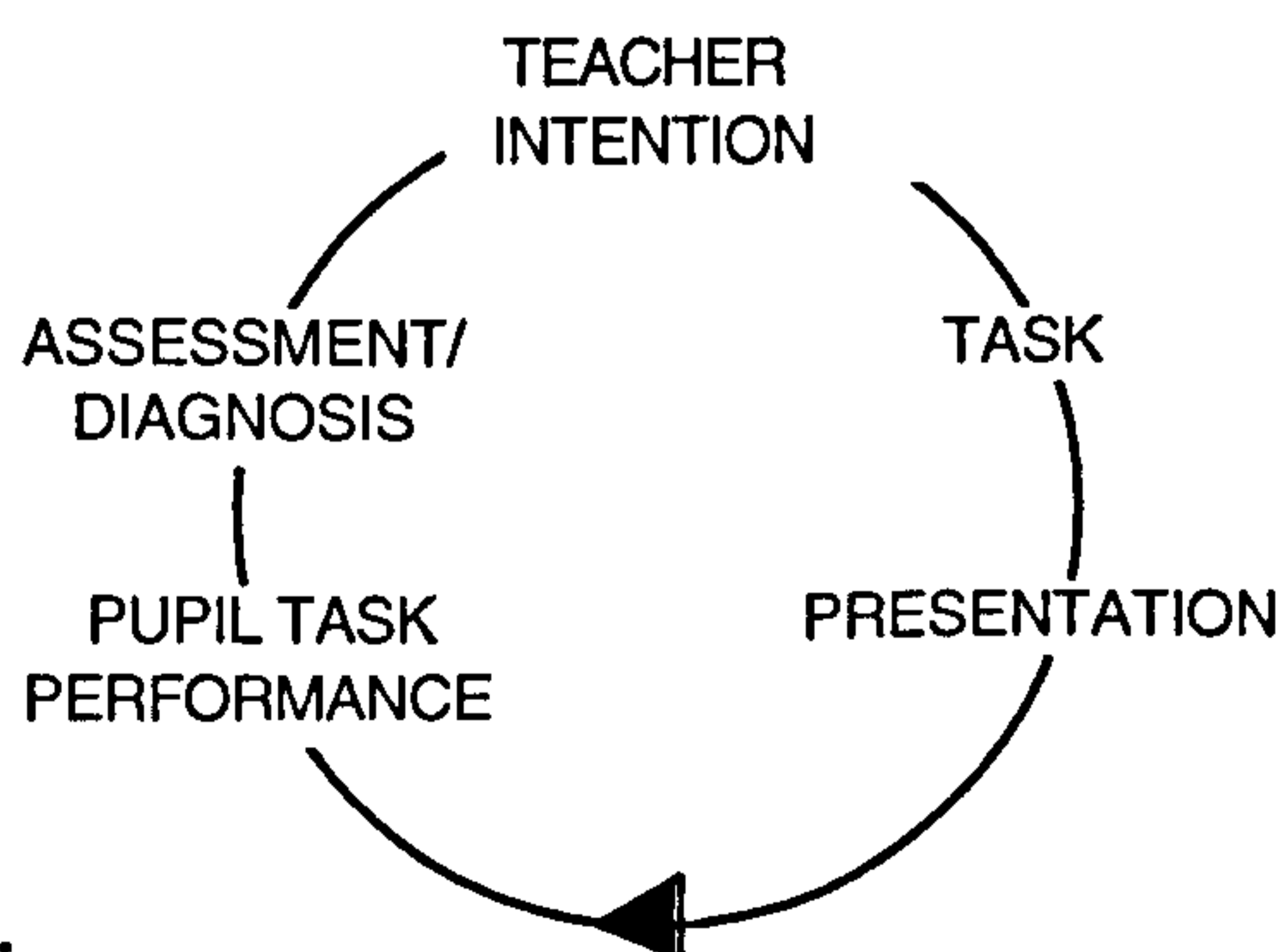
the neo-Piagetian formulation noted above. The third relates to Vygotsky and Bruner.

2.3 CONTRASTING FORMULATIONS

Torrance observes that formulations of formative assessment resting on quite different theoretical positions may nevertheless involve superficially similar practices and procedures (1993, p. 335). He does not suggest what these might be, but the claim implies a belief that, at a deeper level, significant differences obtain. In the expectation that such differences may be relevant to the development of a theoretical basis for formative assessment, I want to consider three possibilities. Each involves an aspect of formative assessment's claimed relationship to the dynamics of classroom teaching. Given the widespread insistence that the one is an integral part of the other, the matter may be seen to be of some importance.

This relationship is sometimes represented as a cycle of events. The closely similar models offered by Bennett and Dunne (1992) and Mitchell and Koshy (1993) exemplify this trend. I shall use the Bennett and Dunne model (Fig. 1, below) as a basis for my consideration of the differences implied by Torrance's observation.

Fig. 1 A simple teaching cycle (Bennett and Dunne, 1992, p. 7)



A simple teaching cycle
(Bennett and Dunne, 1992;
p.7, Figure 1.1)

The model has many strengths. It caters for the intentional nature of teaching. It accommodates teachers' activity-related judgments about pupils in their decision making. Its circular form allows for the process to be infinitely repeated. It offers an economical account of how assessment undertaken for formative purposes may be integrated within an overall teaching dynamic. Its economy, however, masks many indeterminacies. In the belief that these may harbour the deep-level differences of formative assessment practice hinted at by Torrance, and with particular reference to some of the formulations already cited, I want to point out where some of them lie. In one way or another, each involves the relationship between assessment activity and what teachers subsequently do.

The first involves the implied relationship, as it operates in classroom practice, between the focus of teachers' assessment activity and their further action. In most of the schemes noted above, the individual pupil is the object of teacher attention. This is demonstrably so in approaches (eg., DfEE, 1998) that explicitly interpose record-keeping between assessment and subsequent action. Others simply imply a focus on the individual child, or, as in OFSTED (1995), are silent about the matter. Such schemes appear to rest on three unstated assumptions. First, formative assessment is founded on judgments about individual children. Second, subsequent action involves processing these judgments with a view to the consequences for pupils, either directly as individuals or, by means unspecified, as members of groups. Such groups may, of course, include the whole class. A written comment in an exercise book or words spoken to an individual pupil would constitute examples of the former and the modification of a planned group activity one for the latter. Third, there is nothing problematic, either in principle or in practice, about proceeding from assessments of individual pupils to actions relating to groups or the whole class. Missing from all this is any conception that some, at least, of teachers' judgments may be about the 'collective child', or the group, or any consideration that, in practice, teachers might use judgments about groups for some purposes and about individuals for others. In this area, there is a gap in the

research.

The second area relates to the processes involved in translating these judgments into action. Unacknowledged in successive policy formulations, they form a second point at which superficial accounts of formative assessment appear to mask differences at a deeper level. Three examples, each related to the establishment of ‘matching’ teaching to the cognitive states of the learners, illustrate the point. One is provided by the early, essentially Piagetian, schemes of Harlen and her colleagues. Foreshadowing the Bennett and Dunne model, matching was seen to involve repeated cycles of decision making. In these, the teacher gathers feedback from her observations of how the child copes with learning tasks and:

uses it to adapt the learning environment (including her own approach) to suit the child as well as she can. The child interacts with this learning environment and the teacher notes the effects by gathering [further] feedback ... So the repeated cycles go on, with decisions being made which respond to the ever changing situation (Harlen et al., 1977, p. 113).

In neither principle nor practice are ‘gathering feedback’ and translating it into action presented as problematic.

Subsequently, however, some projects have implicitly assumed that teachers shoulder complex interpretive and decision-making burdens in working formatively and require carefully phased procedures to manage them. For example, the Constructive Teacher Assessment approach (NPC, 1991), based on neo-Piagetian principles (in that linguistic interaction plays a key part), offers a three-stage procedure. The first, ‘orientation’, involves giving children ‘time to familiarise themselves with materials related to chosen ‘big idea’ [e.g., ‘properties of materials’]’ (op. cit., p. 6). Then comes ‘elicitation/structuring’, which entails, among other things, selecting ‘significant or revealing actions or comments to record as part of an assessment of [the children’s] skills and understanding’ (ibid.). Finally, ‘intervention/restructuring’ is undertaken to provide ‘opportunities for

children to discuss each other's ideas' and challenge 'their ideas and suggest alternatives for consideration and testing' (ibid.). Again, the cyclical principle is apparent. The approach, however, is considerably more elaborate than anything represented in the Bennett and Dunne model or, before it, in the work of Harlen and her colleagues.

The third area relates to the time scale in which the formative process is depicted as occurring. Two polarities are apparent. One is exemplified by the already mentioned DfEE requirement for teacher trainees to show that they can use systematically recorded assessments to inform planning (DfEE, 1998, p. 15). No temporal stipulation is indicated. By definition, however, actions made on the basis of recorded judgments are removed from the circumstances in which the judgments are made. In that they involve the build up of evidential pressure over time before plans are formed or amended, they are more like the occasional but abrupt shifts of tectonic plates than the gradual accommodation to one another of more plastic bodies. The other is visible in OFSTED's ideal, noted above, of teachers who 'in their *day-to-day interventions* with pupils ... recognise and handle misconceptions ... and steer them towards ... clearer understanding' (1995, p. 71: my emphasis). Quite different from 'tectonic plate' adjustments, what is brought into focus here is the spontaneous adjustment of teachers' actions, in the flux of classroom teaching, to their changing perceptions of pupils' needs.

It is not my purpose to argue that one or other of these formulations has the greater claim. It is rather to observe, first, that, at policy level, they embody marked differences in how the temporal practices of formative assessment are conceived. Second, it is to note that, both within and beyond the policy formulations, the 'tectonic plate' shifts exemplified by the DfEE (1998) are altogether more widely represented than the more plastic, day-to-day adjustments envisaged by OFSTED (1995). This emphasis, it is suggested, has had two corollaries. One is that thinking about formative activity, in both the policy and academic spheres, has been

focused primarily on the initial phase of the teaching cycle. Second, the possible role of formative assessment in teachers' continuing action in the 'ever changing situation' (Harlen et al., 1977, p. 113) of classroom teaching has received scant attention.

The primary medium for this continuing action, as we have known from the early, but sharply contrasting, work by Flanders (1970) and Barnes et al. (1976), is talk. The most obvious characteristic of this talk is that there is so much of it (Edwards and Furlong, 1978, p. 10). A second characteristic, documented by Wells (1986) and Edwards and Mercer (1987), among others, is that it is primarily collaborative and dialogic. It involves talk by teachers and pupils in the form of conversations, the general rule-bound nature of which has been increasingly appreciated since the work of Grice (1975). More especially, it forms a particular sub-set of conversations, in that the distribution of speaking turns is controlled primarily by one participant, the teacher, who is formally responsible for promoting the learning of the others, the pupils.

According to one's view of schooling as a process, this dialogue facilitates the transmission of knowledge (see Edwards and Furlong, *op. cit.*, p. 10) or the collaborative construction of shared meaning (see Wells, 1986, p. 101). The former is consistent with behaviourist and information processing theory, and latter with social constructivism. Either way, there is sound warrant for regarding such dialogue, or conversation, as central to the promotion of learning. Indeed Bruner, from the social constructivist camp, has famously asserted that negotiation and renegotiation of meaning lie at the heart of the educational process (1986, p. 123)

In either account, one might assume that the teacher must be continually concerned with appraising pupils' contributions to the discourse. In neither, without evidence to the contrary, is there reason to think that the interpretive demands on teachers are identical to those they intermittently face in more

conventionally acknowledged contexts for assessment. Indeed, since the dynamics of the relationship between judgment and action differ between them so markedly, one might suspect that the demands differ substantially. Yet, while a number of studies (notably Edwards and Mercer, *op. cit.*) have revealed some of the complexities of classroom interaction, less attention has been paid to the interpretive and judgmental demands it places on teachers. Indeed, with one exception (Savage and Desforges, 1995), in which interaction was but one element of a wider investigation, I am unaware of research on the part played by formative assessment within it. If Bruner is right, or even if the behaviourist or information processing accounts are preferred, the scant attention given to the possible workings of teacher judgment within minute-by-minute classroom talk is serious. It is hoped that this study will make a modest contribution to filling it.

CHAPTER 3

PROBLEMS OF REALITY AND RATIONALE

3.1 FORMATIVE ASSESSMENT: QUESTIONS ABOUT REALITY AND RATIONALE

Sadler saw much of formative assessment literature as ‘hortatory, recipe-like and atheoretic’ (1989, p. 122). In Chapter 2, with particular reference to the U.K., I considered an apparent a counter-claim. This involved assertions by Torrance and Gipps that stipulations for formative assessment are commonly rooted in two schools of psychological enquiry. Locating some gaps in policy formulations, I suggested that, while such influences are visible, they connect only loosely with the theoretical ground and then in a manner that suggests that important matters of principle require attention.

Two conclusions might be drawn. One is that sound theory is available, but inadequately applied. The other is that such theory is unavailable. If the latter is correct, then the matter of its application is irrelevant. In what follows, I intend, therefore, to consider this second possibility. More precisely, I want to address Sadler’s claim that there is a ‘lack of a general theory of ... formative assessment *in complex settings*’ (op. cit., p. 119: my emphasis). By ‘complex settings’, I take Sadler to mean the realities of normal classroom life, as distinct from the contrived simplicity of the experimental psychology laboratory. My purpose is to ask if Sadler’s observation remains valid. I shall examine two key matters. One is about classroom life. The other involves the robustness of theoretic understandings of the kind noted in Chapter 2 to the task in hand. Behind my intention is an assumption that a sound rationale must be grounded in a view of reality of some kind.

3.2 FORMATIVE ASSESSMENT AND CLASSROOM REALITIES

In Chapter 2, I indicated ways in which apparent similarities between various recommendations for the practice of formative assessment mask deeper differences and leave key issues untouched. In the expectation that some of these issues relate to the ‘complex setting’ of the classroom, I want here to look at some practical issues and certain proposals for addressing them that have been advanced. I do this in the understanding that the notion of ‘classroom reality’ is itself problematic.

One way of conceiving of this reality is as a social network. From this perspective, it may be noted that the operation of any assessment system within a network involving one teacher and a large number of children must be sustained in the face of a massive problem of management. According to Doyle (1986), this stems from features intrinsic to everyday classroom life. A teacher must constantly make choices in a situation that is never simple. Things needing her attention do not just happen singly and sequentially, but often unpredictably, in multiple and simultaneously. Writing about USA elementary schools, Doyle (op. cit.) quotes Jackson’s estimation (1968) that teachers commonly have over 500 exchanges with individual students daily. Their responses may be noticed by all and become part of the reality itself.

In the face of such demands, it is unsurprising that Doyle should conclude that,

... the teacher’s management task is primarily one of establishing and maintaining work systems for classroom groups rather than ... maximising the engagement of individual students. (Doyle, 1986, p. 423)

Doyle’s work suggests that, for the teacher, the primary management imperatives relate to the functioning of the class. As seen, however, formative assessment, as commonly presented in both policy and academic formulations, revolves around the activities of individuals. Given the ideology of individualisation that many

commentators (eg., Bennett and Dunne, 1992; DES, 1992) have seen to be endemic to British primary practice, at least until fairly recently, this might not appear to present a problem. Ideological and assessment imperatives pull in the same direction. The conditions appear to be right for teachers to attend to their pupils' individual needs. Unfortunately, as Galton et al. (1980, p. 155 ff.) show, the management solution to the demands of reconciling individual and whole class needs pull in another. Engagements between teachers and children are truncated and dominated by low-level concerns. The consequences, according to Bennett and Dunne are stark:

[If] the individual child interacts with the teacher for a very small proportion of the time, then how can effective diagnosis be occurring? The short answer is that it probably isn't. (1992, p. 14)

According to this argument, the demands of individualisation are ultimately self-defeating. The management of practice shaped by an ideology of individualisation makes effective diagnosis, which may be regarded as an intensive manifestation of formative assessment, impossible.

I want to look at two ways out of this quandary offered in the literature, selected because each is addressed to the managerial and pedagogic problems of classroom practices of the kind noted above. In particular, they relate to the assumed psychological imperative for teachers to make detailed assessments of pupils for formative purposes.

The first, offered by Bennett and Dunne themselves on the basis of classroom-based development work, calls for practices associated with low-level, individualistic interaction to be set aside. In their place, greater use of cooperative group work is advocated:

Our work with teachers demonstrates the improvements that can be achieved both for their pupils and themselves. For pupils these

improvements are evident in enhanced levels of involvement ... ; for teachers it is shown in the creation of time; *time which is crucially needed for the diagnosis, assessment and recording of children's attainments.* (Bennett and Dunne, 1992, pp. 195-196; emphasis added)

Bennett and Dunne's general case for the extension of cooperative group teaching is persuasive. As they acknowledge, they are not alone in making it. Moreover, the case is addressed to the 'complex setting' of the everyday classroom. Their suggestions contribute constructively to thinking about how the time said to be required for intensive formative assessment encounters may be created. They do not of themselves, however, take us far in our search for how a general theory of formative assessment might be constructed. There are two reasons for this. First, the suggestions are about classroom organisation and the use of teacher time. Beyond indicating that more time is made available for assessment, they say nothing about what the nature of that activity might be and why. In short, they are managerial rather than psychological. The other is that, except for an implicit assumption about the existence of mind, the cyclical model (2.3, above) is free of psychological content. How teachers use the time released by cooperative activities for assessment work and what principles this might be based on are undefined. The proposal is thus at most only partially theoretic.

None of this implies that what is done in the time thus released could not be based on coherent theory. One widely canvassed option, indeed, might be seen to have an especially strong claim to teachers' attention. This is what has come to be known as 'conferencing', a practice advocated in the USA and Australia in the 1980s (eg., Walshe, 1981; Graves, 1983) and subsequently taken up in England in the ILEA Primary Language Record (Barrs et al., 1988) and strongly endorsed by the Cox Report (DES, 1988b). In essence, it involves teachers setting up intensive periods of close interaction with individual pupils about their work in progress. Originally explored as a device for supporting children's writing development, its recommended uses have expanded to embrace literacy generally. In principle, it could be applied to any focus of teaching endeavour. Wherever practised,

assessment is central to the activity, with its formative effects operating in two ways: directly, through feedback to the pupil; and indirectly, through the cumulative provision of information to the teacher to aid planning. Here, then, one might anticipate that some contribution to the development of relevant theory might be sought.

Several points, however, should be noted. First, conferencing itself is theory-neutral: while it fits easily into the teaching cycle depicted in 2.3, what goes on in the conference may be driven by principles drawn as easily from behaviourism as from constructivism or any other perspective. That said, since it lends itself to dialogue, it appears well suited to assessment practices that reflect neo-Piagetian and social constructivist thinking. More significantly still, Poulson's evidence (1992) suggests that planned teacher-pupil interactions informed by such thinking offer fertile ground for the assessment and enhancement of the metacognitive activity that commentators like Sadler regard as prerequisites of students' active shaping of their own learning.

Nevertheless, caveats are needed. One is that, far from eschewing individualism, conferencing builds it into a different structure of class management. The site of individualisation is shifted from the fleeting, low-level, but frequent encounters noted by Galton and Simon to the intensive, but necessarily widely spaced meetings of the assessment interview. From a managerial standpoint, it might be seen as a prime example of the 'tectonic shift' application of formative activity noted in 2.3, in that, through a succession of conferences, it feeds back into the teacher's future planning. One could also regard it as an effective solution to the problem of providing pupils with direct feedback on the course of their learning activities. Both functions, it should be noted, operate through the individual pupil. Any theory built around such operations would thus rest on an assumption of individualised assessment.

A second caveat is that conferencing turns its face away from the wider challenges

and the possibilities of class teaching, and in particular the consequences of large numbers of children needing their mentors' ministrations over the whole curriculum. This simple point indicates its basic status. It is but one device in the teacher's management repertoire. Whenever it is deployed, other possibilities are not utilised. There is always a trade-off between the gains which may ensue from a conference and all the other pedagogic demands - to say nothing of the problems of the maintenance of social order - of daily teaching a whole curriculum to a whole class. More importantly, in locating assessment activity in the planned but occasional meetings between the teacher and individual pupils, it diverts attention from the group, or even the class, as a focus of formative activity in its own right. In consequence, any theory built around the individual orientation of activities like conferencing would of necessity be incomplete. It would miss one of the salient features of the complex setting, namely, that much, perhaps even most, of classroom activity involves groups. More will be made of this later.

I shall attend to the second way out of the quandary of individualisation more briefly. It is typified by the 1992 DES discussion paper already cited (see 1.1). In this, the impediments are conceptualised as logistic, an unavoidable consequence of a broad curriculum and many children needing to be taught:

... the idea that at any one time learning tasks in nine subjects can be exactly matched to the needs and abilities of all pupils in a class is hopelessly unrealistic. Match and differentiation are critical to effective learning, but they are aspirations rather than absolutes ... (Alexander et al., 1992, para. 110)

In this, brisk pragmatism appears to override psychological demand. The complexity of the classroom setting is recognised, at least with regard to its curricular expectations and the variety of ways in which pupils commonly engage with them. But, while seen as aspirations rather than absolutes, the psychological imperatives of match and differentiation remain. What is meant by match or differentiation as 'aspirations', however, is unclear, as is whether the authors have

in mind all of the children or just some of them as the targets for teachers' endeavours. As with the more individualised approaches noted above, such claims do not touch the deeper issues involved, under any conception of assessment, in one person (the teacher) knowing the minds of others (the children) and supporting their development. Such issues need epistemological and psychological exploration, not merely managerial.

3.3 PROBLEMS OF EPISTEMOLOGY AND LOGIC

The three broad accounts of formative assessment identified above are all concerned with what may be involved in bringing about a match between the learning of the pupil and the actions of the teacher. If Ausubel's claim (see 2.1) is to be accepted, all this can be simply characterised in terms of finding out what the learner already knows and teaching her accordingly. His claim has the merit of identifying what appears to be a number of elements essential to any account of matching. It implicitly identifies two of the key actors: the teacher; and the child. It highlights two of the key processes involved. One is a matter of assessment: ascertaining what the child, or learner, knows or can do. The second is a matter of decision-making: determining what should be done to facilitate the child's further learning. Both processes, by implication, are undertaken by the teacher.

Put like this, the problem looks simple. As already shown, it can be construed as a matter of management, of bringing together the right actions at the right time. Such constructions are visible in policy statements. Thus a survey of practice in primary schools asserted that:

Good achievement by pupils was also associated with teachers who had high but realistic expectations and who planned thoroughly to achieve an effective match between the tasks set and the pupils' developing abilities. (OFSTED, 1994, para. 13)

It can be construed, as is common within the research community, as a problem of the pedagogical applications of psychology. Here the claim is that no teacher:

... can decide on the next optimal step for a child without a clear view of where they are now [and that it] is not possible to extend or modify schemas without knowledge of those schemas. (Bennett and Dunne, 1992, p.15)

Or, the issue can be seen in terms of both management and psychology, as indeed it appears to be regarded by Bennett and Dunne.

Whether approached as a managerial or a psychological issue, or as both, the path to resolution is commonly paved with an assumption that both the ascertainment of children's knowledge and the determination of further activity can be undertaken with precision. Indeed, recent publications offer numerous indications of the hold of this expectation. From academic sources, perhaps the most striking example is to be seen in research undertaken within the Vygotskian version of the constructivist paradigm on 'measuring' children's zones of proximal development (see Brown and Ferrara, 1985). In policy documents, such as the first tranche of the National Curriculum orders, this search for precision has commonly been expressed in endeavours to articulate unambiguous developmental criteria. Thus, for Attainment Target 9 (Earth and atmosphere), Level 2, in Science, it was proposed that pupils should 'know that there are patterns in the weather which are related to seasonal changes' (DES, 1988c, p. 33). Even where precision of match is seen to be impossibly demanding for the normal classroom, as in the statement by Alexander et al (see 3.2), the assumption remains that something approximating to it is desirable.

These things are claimed, however, without indication that notions of 'achievement' or 'pupils' developing abilities' might be problematic or that the idea of an 'effective match' between them and tasks subsequently set might be fraught with conceptual difficulties. Similarly, there is no acknowledgement that

there might be difficulties with the notion that one can have ‘knowledge of [children’s] schemas’ or a ‘view of where they are now’, or with the idea any next step might be regarded as ‘optimal’.

When such issues are acknowledged, however, one begins to see some of the questions Ausubel’s dictum begs. What is it for a learner to ‘know’ something? What is it for a person to ‘know’ what someone else knows? What kind of knowledge about someone else’s knowledge is relevant to teaching her ‘accordingly’? What is involved on the part of the teacher in finding this out? What is it to ‘teach her accordingly’? To recognise that these are epistemological and logical questions as well as psychological and managerial is not to denigrate the latter. Indeed, some of the psychological issues of matching will be addressed in 3.4. It is rather to indicate that psychological and managerial explorations on their own may be insufficient to shed a productive light on the concern. More precisely, it is to say that psychological accounts frequently beg epistemological and logical questions.

Such questions are ignored at our peril. Yet they are rarely asked. Nevertheless, it is becoming clear from the writings of a small but significant body of people that notions like those cited above are fraught with problems. Notably, Davis (1990, 1993) claims that assessment schemes based on such foundations are frequently not only impracticable, but also epistemologically flawed.

There are many planks to his argument. Here it will be sufficient to look at just two. Both relate to his perception of TGAT. Each focuses on the notion of matching. By extension, the first involves behaviourist conceptions of assessment in general and also constructivist schemes which call for precise ascertainment of children’s knowledge, schemas or levels of operation. The second relates by implication to schemes in which knowledge acquisition is seen as linear.

The first involves the assumption that precise assessments of pupils' knowledge can be formulated. In Davis's view, this is a false aspiration: assessment systems of the kind envisaged by TGAT embody a flawed vision of 'the *very nature of knowledge and understanding*' (1990, p. 246, original emphasis). He takes as an example a requirement for a child to know and to understand that the earth goes around the sun in about 365 days. To know and to understand this, he says, involves a familiarity with a cluster of related matters which concern, among other things, 'the Earth, the Sun, space, position, movement, and what a 'day' is' (ibid.). Each of these 'background' matters, he argues, is related to a whole set of others. No limit can be set to their extent:

The more background Hannah possesses, the more she is in a position to understand the proposition ... 'Knowledge' without any understanding at all is not proper knowledge, but evidently we do not understand all that we know in equal measure. (ibid., p. 246)

Knowledge as understanding, in Davis's account, is holistic. It is also individual. Pupils with different clusters of ideas relating to particular propositions, such as the one involving the time Earth needs to circle the sun, will know such 'facts' differently.

I know of no counters to Davis's critique beyond those which indicate that the way in which people know the world is socially mediated. Such conceptions clearly limit the slide into solipsism inherent in over-insistent claims that knowledge is individual. An acknowledgment of human creativity in meaning construction and the individuality of each person's biography nevertheless leaves the force of Davis's minor point intact. And if the main thrust of his critique is allowed, a number of points follow which bear on my concern for formative assessment.

First, we cannot know precisely what a child knows. Second, no sharp division can be made between a child knowing something like the fact about the sun noted above and not knowing it. Third, if no precise account can be given of her

knowledge, aspirations for the precise matching of a teacher's activity to what the child already knows are doomed to failure, not merely in practice, but also in principle. Fourth, since what learners know and how they know it must always be to some degree individual, there can be no one point from which all start in their quest for further knowledge. Similarly, there can be no single path which all can take towards its advancement. Precision matching, in this account, is not merely an impractical dream, but an illogical one.

The second problem relates to assumptions about development. More particularly, it concerns expectations that precise indications can be constructed about what teachers should do in response to their assessments of children's knowledge. Davis's critique relates to TGAT and TGAT-like constructions. In an observation close to those made by both Gipps and Torrance, he claims that the problem is visible in the TGAT conception of what is involved in the acquisition of further knowledge. This, he says, implies that, in the medium to long term, knowledge acquisition is linear and accumulative; that children learn things in the same order; and that, armed with a scheme of what this order is and the means of finding out how far along it particular children have come, the teacher can with certainty determine what their next steps should involve. Such a scheme, Davis indicates, depends on the assurance that:

One layer of knowledge may be deposited upon another, even as later sedimentary rock is laid down on earlier material without changing it. In the TGAT curriculum, we can spot, perhaps by means of a SAT [Standard Assessment Task], that such and such a layer has been deposited, and proceed to the next. Broadly speaking, *all learn things in the same order*. (1990, pp. 246, 247, original emphasis)

The structure of the TGAT position and the view of formative assessment it buttresses rest on this assumption of linearity. It is commonly seen as open to empirical verification. Davis cites Denvir and Brown's (1986) investigation of children's acquisition of number concepts as an example of the kind of study to which people appeal in its defence. In his view, however, appeals to evidence are

not enough. Where knowledge and understanding are concerned, he says, whether one layer is deposited prior to another is not just an empirical matter, but also an epistemological one. It is simplistic, for example, to require pupils to ‘understand the notion of angle’ for level 2 of the National Curriculum in mathematics and to ‘recognise rotational symmetry’ (DES, 1989b) for level 4. The two are interrelated:

You cannot properly recognise rotational symmetry unless you appreciate that an object may be *turned* so much, and look the same. If you understand this, you are at least half way to ‘understanding’ angle, which is ‘a measurement of rotation’. Knowledge and understanding of *either* level would enrich and transform the other. (1990, p. 248, original emphases)

The problem, he points out, is that knowledge and understanding are interconnected. Development is not merely a matter of accretion. It involves changes in the ways in which what is already known is perceived. Once this is recognised, we should be wary of excessively hierarchical notions of progress. We would also appear to be in difficulty over using a hierarchical scheme for formative purposes. This is not merely a problem for mathematics, nor one solved by the National Curriculum’s successive revisions. It is rather a matter inherent in any assessment framework built on an assumption that knowledge development is accumulative and linear.

It might be objected that Davis’s reservations relate to the initial phase of TGAT-inspired assessment measures and that subsequent National Curriculum developments make them irrelevant. Two kinds are involved. One involves a shift in focus from the assessment of knowledge to the assessment of performance. The second involves a move from the specification of inclusive criteria to their exemplification in behavioural terms. Expectations of the form that ‘pupils should know x or y’ are now conspicuously absent. In their place appear indicators of expected observable behaviour, as in the following criteria for Attainment Target 2: Life Processes and Living Things, Level 2, of the recent orders for Science:

Pupils use their knowledge about living things to describe basic conditions, such as a supply of food, water, air or light, that animals and plants need in order to survive. ... They recognise that different living things are found in different places ... (SCAA, 1994, Science, p. 52)

A brief examination of these shifts, however, reveals that they do not circumvent the logical problems of the kind to which Davis draws attention. Firstly, while such criteria focus attention on performance, they depend for their usefulness in formative assessment on an assumption that underlying the observable performance is some lasting capacity or competence. Were this not so, there would be no point in noting the performance, for it could not in itself serve as a basis for the teacher's subsequent action. Secondly, competence does not lie in a performance. It has, rather, to be inferred from performance. A child may well describe the basic conditions that plants need in order to survive. It does not follow from this that he or she knows in the sense that Davis uses the term anything significant about plants. One is therefore left with the conundrum posed by any competence-related assessment scheme:

The problem comes when you ask over what range of activities, settings and circumstances does a person have to act appropriately and effectively in order to be deemed competent. (Norris, 1991, p. 336)

If there is a way out of this problem, it would appear not to consist in the potentially limitless codification of circumstances in which tasks might be successfully accomplished or in the floating of ever more general competencies. It lies rather in a recognition of the inevitability of judgment having to be made in individual settings, backed by extensive teacher knowledge of background, circumstance and shared purposes. In other words, it is to locate the practice of formative assessment within webs of developing meaning held jointly by teachers and children. From a social constructivist standpoint, it will be noted that from what has been said before that these webs are constructed through interaction. Here is further evidence of the relevance of this pervasive feature of classroom life to considerations of formative assessment.

3.4 PSYCHOLOGICAL ISSUES

In terms of practicality, expectations that a single teacher can accurately assess the performance, knowledge or understanding of a large number of children in a wide range of subjects in order to match her responses precisely to their needs would, in the light of the above discussion, appear to be illusory. On epistemological and logical grounds, they would seem to be beyond the bounds of reason. That teachers spend much time assessing children ostensibly for formative purposes may thus be evidence, not so much of the necessity of their efforts, as of the hold of rhetoric, institutional expectation and socialisation over their actions. Such observations nevertheless raise serious questions about the conventional psychological justifications for formative assessment in pedagogical theory.

We have already noted the claims of Gipps and Torrance that schemes for formative assessment have their roots largely in behaviourism or constructivism. A more extended consideration of these psychological positions is required if their relevance to formative assessment is to be tested. This needs to address two matters. Each relates to the notion of feedback, which, for present purposes, I take to mean the provision of evaluative information to the learner or the teacher about the former's performance. Feedback, thus defined, is commonly seen as a key element in formative assessment (eg., Sadler, 1989, p. 120). The first is a matter of how feedback to the learner is supposed to influence his or her learning. The second involves how teachers use their evaluations of learners' activities to inform their subsequent teaching. Of particular importance to the latter is the question of how feedback is employed in matching.

I begin with behaviourism. As a psychological theory, this rests on two major philosophical assumptions. One is that what can be known about the activities of living organisms, including humans, is confined to what is observable; that is to say,

to their behaviour. The second is that the proper way to study behaviour is through its analysis in carefully controlled environments, on the basis of which the relationship between behaviour and environment can be formulated. Within these limits, behaviourism has been concerned with accounting for what organisms do and how they come to do what they do. I shall concentrate on its later manifestations in the work of B.F. Skinner, in which he is specifically concerned with human behaviour and its acquisition.

According to Skinner, the kinds of behaviour that distinguish humans as persons and the ways in which they are acquired stem from the interaction of genetic inheritance and environmental circumstance:

A person is first of all an organism, a member of a species and a subspecies, possessing a genetic endowment of anatomical and physiological characteristics, which are the product of contingencies of survival to which the species has been exposed in the process of evolution. The organism becomes a person as it acquires a repertoire of behaviour under the contingencies of reinforcement to which it exposed in its lifetime. (Skinner, 1974, p. 207)

This process is gradual and accumulative:

Through the reinforcement of slightly exceptional instances of his behaviour, a child learns to raise himself, to stand, to walk, to grasp objects, and to move about. Later on, through the same process, he learns to talk, to sing, to dance, to play games - in short, to exhibit the enormous repertoire characteristic of the normal adult. (Skinner, 1953, p. 93)

These two quotations, taken from works separated by two decades, provide the clues to the main features of Skinnerian behaviourism, commonly referred to as 'operant' or 'instrumental conditioning'. First, there is an organism genetically endowed with possibilities for behaviour, or operating, in the environment (which may include the human environment). It can move its head, make noises, and so on. Second, the environment provides feedback to the organism on the consequences of its actions (even no consequence is feedback of a kind). Third, some behaviour

becomes habitual and characteristic, stamped in, as it were, by feedback of a particular kind. Fourth, these new additions to the repertoire are superimposed on the old, or modify it in one way or another.

The key explanatory device resides in the notion of ‘contingencies of reinforcement’, by which is meant anything which makes the repetition or extinction of particular behaviour more, or less, likely. The agency of other humans is not necessarily involved in its provision. For example, a mirror is all that a person needs to gain feedback on his efforts to wiggle his ears (1974, p. 179). Other behaviour, somewhat more significant to educational development, such as speech (to Skinner, ‘verbal behaviour’), is dependent on feedback from human sources. Superimposed on already existing genetic possibilities, this process of behaviour reinforcement, manifested in countless (but in principle observable) contingencies, accounts, in this version of behaviourism, for the whole repertoire of the child’s behaviour, and in time for that of the adult as well.

The relevance of the Skinnerian account of learning to some versions of formative assessment is readily visible. The identification of slightly exceptional instances of behaviour as the locus for potential change lends itself to the notion that teaching is effective where it breaks the learner’s task down into small advances, each proceeding a little beyond ground already secured. The idea of positively reinforcing this behaviour where it is seen to be heading in the direction desired leads to an assertion of the significance of the feedback of information to the learner on his or her performance. The possibility inherent in this scheme that awareness of the learner’s present performance might facilitate further goal-setting indicates the parallel relevance of feedback to the teacher.

In this light, formative assessment must involve in the first instance the careful ascertainment and evaluation of learners’ present behaviour. The information so gained must be fed back to them as positive reinforcement in the case of desired

behaviour in order to increase the likelihood of its recurrence, or, where unwanted behaviour occurs, as negative reinforcement to make its repetition less likely. The more closely this feedback to the learners relates to their actual performance, the greater should be its potential influence on their subsequent behaviour. For the teachers, such evaluation would facilitate further goal-setting. And since the object of the exercise is to modify current behaviour, the more precisely the new goals are related to it, the more feasible such modification would be.

The dominant theme is precision. Teachers are charged with accurately assessing learners' current behaviour, providing swift and accurate reinforcement (either positive or negative) and setting further activities which build squarely on the behaviour already observed. This requirement has a striking implication. Since behaviour is individual and it is individual behaviour that must be modified, it must be individual behaviour that is evaluated and responded to. The thrust of the model points inexorably towards the individualisation of teaching.

Unfortunately, as Skinner himself recognises, efficiency of this order is not easily obtained. Even in the laboratory, it overtaxes unaided human agency:

In the experimental study of learning it has been found that the contingencies of reinforcement which are most efficient in controlling the organism cannot be arranged through the personal mediation of the experimenter. An organism is affected by subtle details of contingencies which are beyond the capacities of the human organism to arrange ... Personal arrangements of the contingencies and personal observation of the results are quite unthinkable. (Skinner, quoted in Stones, 1966, p. 229)

If Skinner is right in indicating that ideal contingencies of reinforcement are difficult to maintain even in experimental conditions, their achievement in the more complex setting of the classroom would appear to be beyond all bounds of possibility. It is small wonder that, having reached this impasse, he should have concluded that, 'as a mere reinforcing mechanism, the teacher is out of date' (*ibid*), and turned to programmed learning mediated by mechanical and electrical devices

as sources of the direct and immediate contingencies of reinforcement required within this scheme.

What emerges from this brief examination of Skinner's work is not so much that behaviourism is inadequate in principle, as that its application in practice to pedagogy is fraught with difficulties. The pragmatic limitations on the teacher's information-processing, decision-making and managerial capabilities noted earlier suggest that, as a basis for formative assessment, such ideas are misleading in the face of the realities of classroom life. In a reformulation of the theory, where substantial responsibility for the monitoring of progress and goal-setting are handed over to the learners themselves, as, for example, in a variety of schemes for pupil self-assessment, they might have some bearing. Such schemes, however, demand metacognitive activity on the part of the learners, not least with regard to their holding or coming to hold goals which match those of their teachers. This is manifestly to move the theoretic basis for action some way beyond the bounds of behaviourism. For now, though, it is enough to indicate that, as a basis for action in classrooms as they are presently constituted, the behaviourist formulation appears to be distinctly problematic. With regard to the need to arrive at a secure theoretical basis for formative assessment in particular, it seems to offer only a blind alley.

While the hopes invested in behaviourism as a basis for underpinning formative assessment wane, enthusiasm for the possibilities of constructivism waxes (eg., Torrance, 1993; Gipps, 1994). Nevertheless, a satisfactory account from this perspective has still to be articulated. In what follows, I look at some of the difficulties which have to be surmounted.

We have already seen that constructivism as a psychological theory has taken more than one form. For all their differences, however, these forms rest on a number of common philosophical assumptions, each of which contrasts markedly with the

underpinnings of behaviourism. Whereas behaviourists see learning as the outcome of interaction between the organism and the environment, constructivists assert that what humans know is essentially the product of their own active minds, working either individually or, in more recent versions of the theory, through social interaction. They accept that there is a world to be apprehended through the senses. Unlike the behaviourists, however, they hold that human learning involves going beyond the information that the senses give. That is to say, humans make of experience more than experience alone provides. What they make of it is meaning: inner constructions, working hypotheses, integrated and more or less provisional, and held in common with others, about what the world, and they themselves and others, are like.

Neo-Piagetian constructivism, the second basis for formative assessment noted above, starts from this basis of regarding people as meaning-makers. They create and constantly test out, confirm and revise their meanings through their encounters with the world. Within this conception, feedback to the learner has a clear role. It starts from the idea that the actions of individuals in the world are based on their ideas of what the world is like (by 'action' here, I follow James (1899, p. 13): 'I mean action in its widest sense. I mean speech, I mean writing, I mean yeses and noes, and tendencies 'from' things and tendencies 'toward' things, and emotional determinations; and I mean them in the future as well as in the immediate present ...'). It is the loop by which the consequences of individuals' actions in the world and, by extension, the adequacy of the hypotheses on which their actions are based are fed back for their perpetrators' inspection. Without such feedback, according to this theory, hypothesis confirmation or revision is not possible.

These constructive processes are not contradicted by a recognition that verbal interaction with others as well as concrete experience may challenge individuals' developing ideas and lead to their reconstruction. As already seen, the conceptions

of pedagogy which underpin ventures like the SPACE project and the National Primary Centre's *Assessment in Primary Science* scheme prioritise the careful elicitation of children's schemas as a first step towards supporting their reconstruction. But, as seen from Davis's critique, there are grounds for regarding this burden as overwhelming in practice and nonsensical in principle. One is thus left with a conundrum. Is the underlying theory (of neo-Piagetian constructivism) inadequate, or is it a matter of misapplication? There are grounds for holding that it is the latter. This may be seen from a brief rehearsal of this form of constructivism's central tenets. For this, I build on Desforges (1988) and Wood (1988).

The first of these tenets is the Piagetian point that children are active and constructive in developing their understanding of the world (Wood, 1988, p.19). Second, in this conception, experience is not stored as a basket of facts, but is organised in schemas (Desforges, 1988, p. 14). These are sets of interconnected, and therefore meaningful, ideas or ways of acting. Third, these schemas are active. They shape the way people construe experience. They may be modified in its light. Fourth, since different learners have different histories, the schemas they bring to any particular experience will be different (here the psychological and the epistemological analyses coincide). In consequence, fifth, each will make his or her own sense of it. Thus what they bring to new experience, and what they make of it, is in psychological terms the responsibility of the learners themselves.

The consequences for a pedagogy involving conventional ideas about formative assessment of this account of constructivism are profound:

The concepts of schema, action and responsibility allow the constructivist, indeed demand of the constructivist, to avoid this dreadful treadmill [of teachers' unceasing obligation to match their actions to the needs of individual learners]. Schemas are flexible: input can profitably be interpreted in different ways and will be reinterpreted in the light of subsequent experience. Different interpretations can be seen as legitimate and shared. So long as the learner knows broadly the direction of learning and shares (i.e., values) the goals, they can (and will) interact with the learning experiences to make what movement they can construct in their own schemas. *There is no need, in this view, to find out where precisely*

everyone is in schema development. From the constructivist point of view this would be a largely futile exercise even if it were possible. There will of course, be different end products. But each will be soundly based on understanding. (Desforges, 1988, pp. 14-15; emphasis added)

The notion of 'responsibility' employed here must be treated with caution. It signifies a psychological rather than a moral imperative. At the very least, it requires from the learner an active commitment to sense-making, a commitment that demands the application of her existing schemas to the problem of the new. Without this, new experience cannot be made significant. With it, the meaningful revision of existing schemas becomes a possibility. In short, it is an indication that, within this conception of constructivism, what is made of any given experience is ultimately in the hands of the learner, not the teacher.

In the light of this conception, the commonly expressed need for the precise targeting of teachers' actions to children's existing schemas, whether as feedback or in presenting further opportunities for learning, is wide of the mark. It is the child that makes the match between present understanding and new experience, not the teacher. In consequence, as Desforges indicates, the press on teachers to find out exactly where each and every child is, is misplaced. Within this version of constructivism, if formative assessment is essential to effective teaching, it is not essential in this form. That is to say, the precise determination of children's schemas does not appear to be an essential preliminary to the provision of effective further support for their learning. Instead, what the teacher would appear to need is a clear conception of the goals she is holding out for the children's learning, an awareness of the elements which make them up and a working hypothesis about the pupils' ways of thinking which is just robust enough to enable her to articulate these elements in forms with which they can connect according to their individual needs. Since this hypothesis will necessarily be provisional, both it and what she subsequently offers can be open to amendment in the light of the children's responses.

There is, however, one further point to be noted about this resolution of the problem of match-making. The term 'input', as used by Desforges, could mean more than one thing. It might involve the provision of further practical experiences for children, as, for example, in the setting up of activities in science. It could also mean bringing together children whose interpretations of observed phenomena might be at odds and inviting them to resolve their differences. Either way, the intention of the teacher might be to provoke the restructuring of the children's schemas. In neither instance would it be necessary for the teacher to know precisely where the children are. It would be enough for her to bank on the probability that their prior understandings and subsequent interpretations would differ and that a need for the resolution of cognitive dissonance would be created. In this essentially Piagetian account, her concern might well be for the manifestation of quasi-moral dispositions in her pupils, such as a willingness to look squarely at evidence or to attend to other people's ideas, rather than to know just how they see things. Such expectations, if valid, would place a further burden on the task of theory construction, which hitherto appears to have been confined to cognitive matters. I am aware of no instance where this has been recognised.

Such interpretations, however, do not exhaust the ways in which 'input' might be conceived. Although not explicitly adumbrated in Desforges's paper, it might also be seen in terms of what the teacher offers to the children by verbal or other means, as, for example, in the demonstration of modes of procedure or the articulation of conceptual frameworks relevant to their needs. This would be to shift the ground markedly towards the social variants of constructivism, for they would clearly be the products of a more advanced and, most importantly, socially-constructed, understanding that would be on offer. What therefore needs to be examined is the extent to which the kind of latitude offered to the teacher in a Piagetian account of assessment practice is also afforded by social constructivist underpinnings.

At first sight, the publications of the preeminent workers in this tradition appear to be demanding. Vygotsky, for instance, asserts that it is:

[a] well known and empirically established fact ... that learning should be matched in some manner with the child's developmental level. (Vygotsky, 1978, p. 85)

And Bruner, acknowledging his debt to Vygotsky and writing about language acquisition as an analogue for all those aspects of learning which are distinctly human, hypothesises that:

any innate Language Acquisition Device, LAD, that helps members of our species to penetrate language could not possibly succeed but for the presence of a Language Acquisition Support System, LASS, provided by the social world, that is matched to LAD in some regular way. (Bruner, 1986, p. 77)

In the texts from which these passages are taken, both Vygotsky and Bruner are concerned with more than pedagogy, let alone the particular matters of formative assessment which are the focus of this study. Nevertheless, the interest currently being shown in the articulation of a social constructivist account of the place of formative assessment in teaching demands that such assertions are noted, not least because they could be regarded as justifications for prescriptions for procedures as demanding as those associated with behaviourism. Hence there is a need to consider whether such strictures are inevitable. This calls for a brief identification of social constructivism's main tenets, as developed by Vygotsky and further built upon by Bruner, and as they might be applied to the processes of education.

First, as a tradition of enquiry, social constructivism is seen by its main protagonists to have grown out of 'an all-out effort to establish *meaning* as the central concept of psychology' (Bruner, 1992, p.2; emphasis added). Second, it rests on an assumption that the distinguishing feature of human psychology, in contrast to the psychology of other species, is that meaning is based on 'socially rooted and historically developed activities' (Vygotsky, 1978, p. 57). It is, in short, a theory of

social cognition, according to which culture, rather than individual experience, is 'the major factor in giving form to the minds of those living under its sway' (Bruner, op. cit., p. 12).

Third, within this framework, there is a dynamic relationship between a culture and the meanings its members live by. That is to say, the shared assumptions, beliefs, ways of seeing, possibilities for action and so on which go to make up a culture are constantly renewed by its members. In this view, a culture:

is as much a *forum* for negotiating and renegotiating meaning and for explicating action as it is a set of rules or specifications for action (Bruner, 1986, p. 123; emphasis in original).

Within this forum, whatever people can accept as a basis for agreement about the object of their attention is thus what constitutes meaning. In this one sees both the fourth characteristic of this form of constructivism, namely the centrality accorded to human interaction and negotiation, and the fifth, in which cognition and social activity are seen as language-dependent. This goes not only for those aspects of social life which are obviously shaped through speech acts, such as betrothals and divorces, but also for our encounters with the external world:

Even our direct experiences, so called, are assigned for interpretation to ideas about cause and consequence, and the world that emerges is a conceptual world. When we are puzzled about what we encounter, we renegotiate its meaning in a manner that is concordant with what those around us believe. (ibid)

As such, meaning is not fixed so much as ever prone to negotiation. What matters, sixth point, is convergence of meaning through negotiation, not identity.

The seventh point is that, as a theory of cognitive *development*, social constructivism is built around an idea about the relationship between culture and and the growth of individual consciousness:

Human learning presupposes a specific social nature and a process by which children *grow into the intellectual life of those around them*. (Vygotsky, 1978, p. 88; emphasis added)

The leading actors in this drama are the learners, usually children, and more knowledgeable others, usually (but not essentially) adults, elegantly described by Bruner as the ‘vicars of their culture’. The key concept here, and the subject of my seventh point, is that of internalisation, a series of transformations whereby the learner appropriates cultural awareness for her own use. It is summed up in Vygotsky’s assertion that:

every function in the child’s cultural development appears twice: first, on the social level, and later, on the individual level: first, *between* people (*interpsychological*), and then *inside* the child (*intrapsychological*) (1978, p. 57; original emphases).

A more recent contribution shows how this may happen:

the adult [gives] the child a set of grammars and scripts for making sense, either directly or through the ways in which the child’s own behaviours and utterances are afforded legitimacy (Bruner and Haste, 1987, p. 20)

or, as Bruner individually puts it, the adult offering the child a “loan of consciousness” (1986, p.76). This further involves the adult scaffolding the child’s struggles to make sense, typically by pacing her problem-solving (Bruner and Haste, op. cit., p. 22) through the provision of ‘cognitive climbing frames’ (Edwards and Mercer, 1987, p. 167). This scaffolding is neatly illustrated in Bruner’s own description of the activity of a tutoring pair, where one, the tutor, in possession of knowledge about how to build a pyramid out of interlocking wooden blocks, was attempting to pass it on to another, a three year old, who did not possess it:

[The tutor] was indeed “consciousness for two”. To begin with, it was she who controlled the focus of attention. It was she who, by slow and often

dramatised presentation, demonstrated the task to be possible. She was the one with a monopoly of foresight. She kept the segments of the task on which the child worked to a size and complexity appropriate to the child's powers. She set up things in such a way that that the child could *recognise* a solution and perform it later even though the child could neither do it on his own nor follow the solution when it was simply *told* to him. In this respect, she made capital out of the "zone" that exists between what people can recognise or comprehend when present before them, and what they can generate on their own ... In general, what the tutor did was what the child could *not* do. For the rest, she made things such that the child could do *with* her what he could plainly not do *without* her. And as the tutoring proceeded, the child took over from her parts of the task that he was not able to do at first but, with mastery, became consciously able to do under his own control. And she gladly handed those over. (Bruner, 1986, pp. 75-76; original emphases)

As well as scaffolding and loan of consciousness, two other key ideas are visible in this account. One is the notion of zone of proximal development, which we have already met. The other is the notion of handover, a term signifying the process by which the teacher, the initially more knowledgeable other, passes responsibility for functions to the learner as she establishes intellectual control over them for herself.

The next point is that this form of constructivism, as it continues to be developed by Bruner and his associates, retains the Piagetian view of the child or learner as an active meaning-maker,

constructing hypotheses about the world, reflecting on experience, interacting with the physical world and formulating increasingly complex structures of thought (Bruner and Haste, 1987, p. 1),

but reconceptualises the child as an intelligent social operator, increasingly able to make use of the interpretive frameworks of his culture.

What matters here is whether there is anything in this overall conception which makes the precise ascertainment by teachers of their pupils' consciousness and the accurate determination of subsequent responses necessary conditions *in principle* for effective support to further learning. It is to this issue that I now turn.

Dealing with it, however, is made difficult by some complexities in Vygotsky's writings. They can be seen in the quotation used above to raise the question about the need for 'match' ('A well known and empirically established fact is that learning should be matched in some manner with the child's developmental level' (1978, p. 85)). One relates to Vygotsky's use of the term 'learning'. The other involves the qualification introduced by the phrase 'in some manner'.

In the immediate context in which it is employed, the meaning of the term 'learning' is elusive. The assertion quoted above is at once followed by an exemplification: 'for example, it has been established that the teaching of reading, writing and arithmetic should be initiated at a specific age level.' (ibid.). This suggests that Vygotsky could be using the term 'learning' as a synonym for teaching. Such a reading, however, does not accommodate the way in which he uses the term elsewhere in *Mind in Society*, where it seems to refer to activities which may well have been set up by the teacher, but which are essentially undertaken by the pupil. This latter interpretation would anticipate a proposal for a term 'studenting' to denote a 'parallel concept' to 'teaching' that is more appropriate than 'learning' (Fenstermacher, 1986, p. 39). Thus teachers may 'explain, describe, define, refer, correct and encourage', while students may 'recite, practise, seek assistance, review, check' and so on in the anticipation of learning (ibid.).

Construing Vygotsky's term 'learning' as 'studenting', as the latter is understood by Fenstermacher (albeit not with reference to Vygotsky), facilitates a coherent theoretic reading of an otherwise elusive element of Vygotsky's work. For example, it enables us to make sense of his claim that:

... in normal children, learning which is oriented toward developmental levels that have already been reached is ineffective from the viewpoint of a child's overall development (Vygotsky, 1978, p. 89)

and to see the pedagogical implications of his assertion of the significance of the notion of ZPD. It makes it possible, he says,

to propound a new formula, namely that the only “good learning” is that which is ahead of development (ibid).

In this light, if independent development is the goal, then pupils’ reciting, practising, reviewing and so on must be undertaken at levels they cannot sustain without the assistance of some more knowledgeable other. It equally means that teachers’ explanations, descriptions, definitions and so forth must prop up pupils’ reciting, practising and reviewing at these as yet not independently sustainable levels.

Such an interpretation makes it quite clear that, from a Vygotskian perspective, the teacher must have some sense of where the pupils are if she is to match her support to their need. More particularly, it calls for her to have a sense of what they can sustain with her help, but would fall down on in its absence. But there is nothing in this to suggest that such an alignment needs to be brought about with absolute precision. Convergence, or approximation, in participants’ meaning is enough.

Secondly, and of central importance to my argument, it moves some of the onus of matching from the teacher to the learner. Desforges’s neo-Piagetian claim that ‘so long as the learner knows broadly the direction of learning and shares ... the goals, they can (and will) interact with the learning experiences to make what movement they can construct from their own schemas’ (1988, p. 15), is equally valid for the Vygotskian account. So, too, is his conclusion that there is no need to find out precisely where everyone is.

3.5 SOME REQUIREMENTS FOR A THEORY FOR CLASSROOM SETTINGS

In the light of what has been said in the past two chapters, a number of observations can be made about the adequacy of currently available theoretic underpinnings for formative assessment practice in the complex setting of the normal classroom and about further development that might be needed.

First, clarification is needed about the place of formative activity, which includes both assessment and action intended to support learning, in the dynamic unfolding of classroom life. The prevailing formulation of such activity as intermittent, with assessment linked to action at some remove, as in the 'tectonic plate' adjustments noted above, might be complemented by a further conception of a more immediate link in the context of dialogue. The theory would have both to accommodate this second possibility and to allow for the prospect that not all assessment activity is focused on the individual pupil.

Second, behaviourism's inherent limitations suggest that one must look elsewhere for a basis for the foundations of a theory that is relevant to the classroom. Constructivism, on the other hand, appears to have more to offer. In this respect, the expectations of writers like Gipps and Torrance seem to be justified. More particularly, the social variant appears to be relevant to showing how the accumulated learning of the culture is handed over through the processes of education to its initiates, the pupils. The theory must account for how this happens in the complex setting of the classroom and, in particular, how this happens through dialogue, its dominant medium.

Third, it is likely that the theory would have to accommodate a flexible notion of 'matching'. Given the negotiative approach to the educative process envisaged by Bruner, it would have to allow for a more dynamic contribution to be made to it by

the pupils than has commonly been accepted, and be driven by notions of approximation or convergence of meaning, rather than identity. Fourth, it is likely that relevant theory would need to accommodate, not only cognition, but also affect.

How such relevant theory may be constructed must now be faced.

CHAPTER 4

METHODOLOGICAL FOUNDATIONS

4.1 AN ENQUIRY IN THE INTERPRETIVE TRADITION

This study is about the social process of teaching. It is concerned with how, on a moment-by-moment basis, and in normal classroom life, teachers seek to relate their actions to what they regard as the learning needs of the children in their care. Its purpose is not merely to describe what they do, but also to understand it. The goal of creating understanding of an element of normal classroom life has been the central factor in shaping the study's course. It meant, most obviously, that normal classroom life had to be studied, not some element of it extracted for consideration under experimental conditions. It meant, too, that teachers' perceptions of what happened would be the starting points for the construction of this understanding. It further entailed that these perceptions had to be gathered in a manner fine-grained enough to admit of the development of understanding.

These considerations determined my central research strategy. It would be based on case study. Following Golby (1994), I choose my words carefully:

case study is not the name of a method of educational research ... [on the contrary, case study] refers only to the determination to relate a single phenomenon to the collective understanding by means of systematic study (op. cit., p. 15).

This conception suited me well. It left questions of method open. I could use quantitative or qualitative measures, either exclusively or in combination, according to my needs, and, while my investigation has been primarily qualitative, it has not eschewed quantitative analysis. Most importantly, however, it accommodated my overarching aim:

Case study's promise is ... that practical problems can be investigated in ways which might allow us to reconceptualise [them], understand more fully [their] wider significance and act more intelligently in resolving [them] (Golby, op. cit., p. 16).

As initially conceived, this enquiry was to involve two case studies, each involving field work by the researcher as a non-participant observer of normal classroom curricular activity in separate English primary schools. Each would involve a pilot phase and a main phase. As it happened, work in one had to be halted when the teacher involved was promoted elsewhere. Activity within the other continued unhindered and was completed as anticipated.

The goal of creating understanding of the social process of teaching occurring in these natural settings, the way in which I went about creating it and, especially, the centrality afforded in its main phase to the perceptions of the teacher involved, locate the study within the broad tradition of interpretive social enquiry. Such enquiry rests on the assumption that human social phenomena are characteristically different from natural phenomena (Hammersley and Atkinson, 1983, pp. 6-7). The latter are typically thought of in mechanical, chemical and biological terms. Given identical circumstances, it is assumed, identical billiard balls behave identically. Neither the balls nor their circumstances are created by the balls themselves, but by forces beyond them or of which they are a part. Claims to understanding their behaviour rest on relating what they do to laws assumed for the moment to be universal. The validity of such laws rests in the end on observation in principle open to all. Social phenomena, of which teaching is an instance, are not regarded in this way. They involve human beings:

coming into contact with, *and creating*, their surroundings as well as themselves through the actions in which they engage. (Wertsch, 1991, p. 8: emphasis added)

Their actions relate to how they perceive these surroundings and their relationship

to others who share them, and to what they make of the actions of those others. I look more closely at the concept of 'action' later in this section. For the moment, it is enough to note that it involves meaning. To the understanding of social phenomena, meaning is central.

In all enquiry, the scope for error is large. It is especially so where social enquiry is concerned, for meanings are elusive entities, particularly when those involved are other people's, and where the primary routes to finding out what they are themselves involve social action. As if that were not enough, one must also recognise that, while all social happenings are particular, their significance to a researcher lies in the degree to which they are typical. The best of intentions can be undermined by inappropriate sampling, even before the problems of data collection and analysis are faced. Given these difficulties, Maxwell's assertion (1992, p. 282) that most workers in the field agree that not all possible accounts of social phenomena are equally useful, credible or legitimate occasions no surprise.

Save for a brief indication of the kinds of understanding it is intended to generate, the claims of this study to usefulness I leave until later. Here I want to set out my grounds for holding that this account of a particular dimension of the teaching process, as realised in the situations studied, is credible and valid. I thus face a key question:

All field work done by a single field worker invites the question, Why should we believe it? (Bosk, 1979, p. 193; quoted in Maxwell, 1992, p. 279)

With this in mind, I aim here to do two things. One is to enlarge on the assumptions on which the study is based. The other is to explain the processes by which it has been conducted and the assumptions that underpinned them. These have evolved over the course of the enquiry. What I present here is an account of them as I write. It would be disingenuous to claim that these ideas were fully formed when I first embarked on the study. I hope, however, that, by presenting them in detail,

readers will acknowledge why I have done certain things at certain times in certain ways. The adequacy of the assumptions and the success of my attempts to work to them, and hence the claims of my account to credibility and legitimacy, will then be for readers to judge.

4.2 ETHICAL FOUNDATIONS

Any inquiry begs ethical questions. Chief among them are those that relate to a commitment to truth. These have their negative side, in that they involve a conscious imperative not to make claims which one knows to be false, not to invent data or bury uncomfortable evidence. On the positive, they involve obligations to give honest accounts of facts, to interpret them in a manner not knowingly distorted and to make both one's argument and one's conclusions available to others for scrutiny and possible challenge. Implicit in this is a readiness to employ, in a disciplined manner and to the best of one's ability, the accepted means of verification of the tradition of inquiry within which one operates. This has its visible outcome in the steps one takes to ensure, so far as is possible, that one's claims are valid and reliable.

There is a further ethical dimension, however, which assumes particular importance in any inquiry that works within the interpretive tradition and depends for its primary data on the perceptions of its participants. It is firstly a matter of the researcher's willingness to regard the participants as moral agents in their own right, that is to say, as people able and willing to shape the course of their activities according to their own lights and to be held responsible for what transpires. I have tried to recognise this imperative in my study by involving the teachers concerned wherever possible in considering the purposes and methodology of the research. There was an insistence, moreover, that there was something in it for them as well as for me (summed up in an observation by one of the participants: 'There's more

formative assessment going on in my classroom than most people realise - except other teachers, that is - but I wish I knew what it was!').

There is a further imperative not to abuse those participating as moral subjects, that is to say, as people who have a right to maintain their own integrity, dignity and, if wanted, professional privacy. I tried to uphold this in a number of ways. From the beginning, participants had the right to see all the data I collected and to veto the use of any they thought might be to their personal disadvantage. While neither did, they had the right to exclude me from their classrooms, either permanently or temporarily. They had the right to insist at any point that I stop recording data, and indeed one did briefly. Part of my attempt to honour this agreement is that I give no hint of who or what was involved.

These measures involved the participants to a degree as collaborators. This was to my advantage as well as, I trust, to theirs. I do not claim that it was done with my needs alone in mind, for that would be to undermine the ethical basis of the approach, but do assert that, where two or more parties agree to a course that is of mutual interest and are open about their possibly differing motivations, then it is ethically justifiable for either to benefit from it. Later I claim that this collaborative approach contributed to the validity of the project, for it meant that the participants, like me, had stakes in its outcomes.

4.3 NAMING AND FRAMING THE PROBLEM

Any inquiry into a problematic situation must be founded on a clear resolution of two key issues. The nature of its subject matter must be determined. Appropriate means of investigating it require to be identified. It is a matter of 'naming and framing' (Schön, 1987, p. 4), of selecting things for attention and treating them in a manner appropriate to the subject matter and the nature of the problem. As I see it,

the subject matter of this enquiry is, in broad terms, the human mind and its operation in those parts of classroom interaction which are intendedly educative. More particularly, it involves the means by which teachers tailor what they do to the apparent needs of the pupils. It is thus an instance of what Bruner has termed ‘calibration’ (1987, p. 92), a facility that he argues begins:

as a biological readiness based on a primitive appreciation of other minds [and] is then reinforced and enriched by the calibration powers that language bestows (ibid).

Any enquiry into this topic must encompass a view of mind and a conception of how it operates. My subject matter and its investigation are thus interrelated.

Both raise philosophical problems. Further, the way in which I frame them calls for attention to complex issues in social and cognitive science, of how one may understand and explain human action, which themselves have philosophical components. In what follows, I outline the key issues I faced and the steps I took to overcome them.

4.4 SUBJECT MATTER OF INQUIRY

The underlying nature of my subject matter, as it pertains to this inquiry, may be appreciated by considering how blinking and winking, as they occur in humans, may be distinguished. The first involves an eyelid movement. It is primarily involuntary, as in a twitch or a response to a minor irritation or the swift and unexpected movement of an object across the face, which places it on a par with the opening of a flower’s petals to the morning sunlight, a matter of biological or physiological reaction. A wink, on the other hand, is deliberate. It implies agency on the part of the winker: in human terms, knowing that what happens ‘happens because [she chooses] to make it happen, knowing what [she is] doing and being

aware of the possibility of acting otherwise' (Langford, 1985, p. 54). More than this, it is meaningful and symbolic: an invitation to collusion, couched in a sign that is part of the common currency of both instigator and recipient. Finally, it implies consciousness on the perpetrator's part, along with a willingness to attribute consciousness to another and an assumption that the communication of meaning by signs between them is possible. In short, it is a social, meaningful and conscious act, symbolically mediated.

To all this, I see two things are central. One is action, with its constituents, as nominated by Bruner (1985, p.14), of agent, intention and situation, as distinguished above from mere reaction or behaviour. The other is consciousness: '... what those involved in the action know, think, or feel, or do not know, think, or feel' (ibid). The subject matter of this inquiry, at base, has two elements: social, meaningful action, on the one hand, and the consciousness to which it relates on the other: two 'landscapes' which, if one accepts Bruner's metaphor and framework (I do only in part: see 4.5) are conceptually distinct. More particularly, since I am concerned with classrooms, it is about the consciousness of the teacher as it relates to his own and the pupils' actions within everyday classroom discourse. More particularly still, it is about the teacher's consciousness of his pupils' consciousness, as manifested in the intendedly educative (as distinct from the managerial) elements of this interaction. Mindful of both Bruner's claim for the distinctiveness of these two 'landscapes' and an earlier philosophical critique by Ryle of the 'dogma of the ghost in the machine' (1949), which to an extent clashes with Bruner's thesis and which I shall draw on later, I choose my words here with particular care.

These considerations, which are primarily philosophical, lead me to form two alignments. To both, mind and meaning are central. Each involves the notion of action outlined above, that is to say, action that is characteristically social, meaningful and symbolically mediated. The first involves the advances in cognitive science which stem from the sociocultural approach advocated by Bruner (1986,

1990), Wertsch (1991) and others. To this, a particular view of ‘mind’ is central, one that sees it in terms of ‘intentional states like believing, desiring, intending, grasping a meaning’ (Bruner, 1990, p. 8). In it, ‘agency’ and ‘action’ are key concepts, with the former implying ‘the conduct of action under the sway of intentional states’ (op. cit., p. 9). More specifically, it is concerned with ‘*situated action* - action situated in a cultural setting, and in the mutually interacting intentional states of the participants’ (ibid., emphasis as in original).

The second, with a social science perspective, is taken from Weber, whose goal was to understand and explain ‘social action’, by which he meant, firstly, ‘... human behaviour when and insofar as the acting individual attaches a subjective meaning to it ...’ (Weber, 1968, p. 88), and then, adding the social dimension:

Action is social insofar as, by virtue of the subjective meaning attached to it by the acting individual ... it takes account of the behaviour of others (ibid).

My interest here is in the possibility that, in taking account of the behaviour of others, the actor may in turn attribute intentionality, desire, belief, and so on to them. In short, it is in the reciprocity of the arrangement.

The congruence of these notions drawn from a particular tradition within social science with those offered by Bruner’s cognitive studies is apparent. Save for the issue of the claimed conceptual separateness of the ‘landscapes’ of consciousness and action, so, too, is the fit of both conceptions to the philosophical framework with which this section opened. Together, the three perspectives offer promising tools for conceiving of the immediate subject of my enquiry, which is the teacher’s consciousness of the minds of the pupils in his care, which I assume to be a significant factor in shaping his intendedly educative actions on their behalf.

4.5 INVESTIGATING THE SUBJECT

The above account of this study's subject matter is avowedly mentalist in conception. That is to say, it assumes that the phenomena of 'mind' have substance. It is also to presuppose that the workings of the mind and their relationship to action, as defined in section 4.4, are open to investigation. Such a statement is not made lightly. It involves taking sides in centuries-old controversies about how one may arrive at knowledge of one's world.

Chief among them has been the opposition between rationalism and empiricism. By the former, following Descartes, is usually meant the doctrine that one can arrive at knowledge by pure reasoning. By empiricism, in the light of the long tradition laid down especially by Locke, Hume and Mill, is meant the theory that all knowledge is derived from experience. I include within this framework empiricism's important offshoot in the first half of the last century of logical positivism, the central premise of which is that propositions are meaningful only if they are analytic (as in those of logic) or empirically verifiable (see, for example, Ayer, 1936 and 1956). I recognise that, where investigation of the world is at issue, including the activities of humans within it, it is the empirical tradition, manifested in one form or another under the name of 'science', that has long held sway.

I note, however, the shifts that have taken place even within this tradition. Following Kant, I see just how far we have come from believing that experience comes to us unadorned, that there can ever be naïve or innocent observation. On the contrary, with Whewell, I accept that one must work with the assumption that 'there is a mask of theory over the whole face of nature,' (Whewell, 1847, quoted in Medawar, 1984, p. 130) and concur with Medawar's own, more recent, assertion that:

No one now seriously believes that the mind is a clean slate upon which the

senses inscribe their record of the world around us: that we take delivery of the evidence of the senses as we take delivery of the post (op. cit., p. 89).

I recognise, too, that within the empirical tradition, there have been, and continue to be, many tensions. With this study in mind, the most important have been between the claims of natural science, by which is meant the study of the physical or 'natural' world, and those sometimes referred to as the 'human sciences' (eg., Bruner, 1990, p. 1). I have long been wary of the claims for an underlying unity in the methodology of all sciences, even when presented in qualified form, as in Mill's distinction between exact sciences, such as astronomy, and others, like the science of human nature, which differ, he claims, from their more manageable counterparts only in that what they deal with is too complex, varied and singular ever to admit to valid universal propositions (see Mill, 1843). It seems to me that contemporary scientific endeavour, on the contrary, is characterised by increasing diversification. Within medicine, for example, the differences between epidemiology and stem cell research may be as great as the similarities. So, too, am I cautious about attempts to set the the physical and the human in necessary opposition. This arises from three considerations especially.

First, such claims make too little of the possibility that hypothesis and deduction play key roles in investigations across the board. In this, I follow Popper's claim that:

... every observation is preceded by a problem, a hypothesis ... at any rate by something theoretical or speculative. This is why observations are always selective, and why they presuppose something like a principle of selection (1972, p. 343).

I do not think that the data for this study would have been gathered had I not been steered towards them by a principle of selection, a theory, a speculation, however primitive, that what I was looking for had some bearing on my chosen problem. Second, again following Popper, I acknowledge that exposing ideas to

the possibility of refutation, or falsification (op. cit., pp. 12-14), embodies a procedural principle applicable to all empirical enquiry. Third, claims for difference ignore the role of the imagination that many see to be crucial to hypothesis generation and testing in all scientific activity (eg., Medawar, 1984). The more urgent consideration, I maintain, involves recognising the need for fitness to subject matter and purpose as the key issue in shaping investigative means.

Nevertheless, these questions of underlying unity come to a head when one sets out, as I do in this study, to investigate facets of human action. Here, I take particular note of the problem identified by Lesnoff (1974): how are empiricists to deal with the phenomena of the human mind when they appear to lack the characteristics that empiricists consider the only ones science can take note of? They are impaled, he implies, on the horns of a dilemma:

Either they may accept that mental phenomena are not empirically observable, and draw the conclusion that social science must completely ignore them, building up its own forms of description and classification on a genuinely scientific (i.e., empirical) basis; or they may hold that an empiricist social science *can* study mental phenomena, because they *correspond* to overt phenomena ... which are open to empirical observation (op. cit., p. 181: emphasis as in original).

The first alternative is steeped in Durkheimian positivism, which sees the social world in terms of external social facts and seeks to explain human behaviour (as distinct from action) causally, in the manner of the natural sciences. It is consistent with the common assumption, visible, for example, in the major review of research on teachers' thought processes by Clark and Peterson (1986), that thinking occurs 'inside people's heads' (ibid., p. 257), and that much of what is important about action is thus not observable (see, for instance, Feiman-Nemser and Floden, 1986, p. 506; Calderhead, 1996, p. 711). The position was elegantly summed up earlier (for subsequent critical examination) by Ryle:

... one person has no direct access of any sort to the events of the inner life

of another. He cannot do better than make problematic inferences from the observed behaviour of the other person's body to the states of mind which, by analogy from his own conduct, he supposes to be signalled by that behaviour. Direct access to the workings of a mind is the privilege of that mind itself; in default of such privileged access, the workings of one mind are inevitably occult to everyone else (1949, p. 16).

The difficulties posed by this challenge, should it be valid, bear hard on those who attach importance to the procedural principle of seeking verification for hypotheses - or, rather, in the more recent light shed on scientific methodology by Popper, to exposing them to the possibility of falsification, as they would on all conceptions of empirical enquiry: where valid data are unobtainable, the work of science is halted.

In my view, this formulation is unduly pessimistic. It stems from a tendency, identified by Ryle, for many theorists to suppose that the silence in which most of us have learned to think is a defining property of thought. Its consequence is that thought comes to be seen as necessarily private and separate from action. The model of the relationship between teacher thinking and action employed by Clark and Peterson as a basis for their review (*op. cit.*, p. 257) presumes this bifurcation. I prefer to follow Ryle's lead in recognising that, for many purposes, they may be one and the same thing. With this study in view, it has particular relevance to how one conceives of the relationship between thought and utterance:

To say something significant, in awareness of its significance, is not to do two things, namely to say something aloud or in one's head and at the same time, or shortly before, to go through some other shadowy move. It is to do one thing ... in a certain frame of mind, not by rote, chattily, recklessly, histrionically, absent-mindedly, or deliriously, but on purpose, with a method, carefully, seriously and on the *qui vive*. Saying something in this frame of mind, whether aloud or in one's head, *is* thinking the thought (Ryle, *op. cit.*, p. 279).

This conception of the relationship between thought and action (Ryle offers a clown's deliberate tumbling as a non-linguistic example: the thinking is inherent in the tumbling, not apart from it) implies a unified landscape of consciousness and

deed, rather than the dual one offered by Bruner. It offers an escape from the more extreme manifestations of positivism implied by the first of Lesnoff's alternatives. Moreover, it enables me to override the caution of his second alternative, namely that social science '*can* study mental phenomena', since such happenings '*correspond* to overt phenomena' (op. cit., p. 181: emphases in original).

This limitation is inherent in the requirement for the mental terms used to describe such phenomena to be translated into others that refer to the corresponding physical behaviour. Such devices are extensively used by novelists, as in Proulx's *The Shipping News*:

In the morning she glared at him, but he said nothing, stumbled around the kitchen with the juice pitcher. He sat at the table, the cup shook in his hand (Proulx, 1993, p. 16).

Attributing mental significance to such behavioural description is part and parcel of reading such works. The reader, however, will be aware that the protagonist's anguish might have been betrayed by a host of other signs and his stumbling and shaking might have had quite different antecedents, and be ever ready to revise her interpretation of the text, including the part already encountered, as it evolves. For philosophical analysis, such allusions are inappropriate. Instead, conceptual clarity and the elimination of ambiguity are needed. Mindful of how such imperatives led many logical positivists in particular into self-defeating mazes, not least in their pursuit of formulae which would enable them to translate mental statements into indisputably clear behavioural ones, I am wary of this approach. For this study, I need to attempt a partial synthesis of the possibilities offered by Ryle and by Bruner. From the former, I take the potential unity of thought and action. This allows me to regard teachers' (and pupils') interactive utterances as thought in its own right, rather than merely as its consequences. In particular, it makes it possible for me to see the utterances of teachers in their interactions with pupils as thinking in action (I shall later distinguish this from thinking on action).

These manifestations of thinking in action or, to use Schön's term, 'knowing-in-action' (1983, p. 49ff), constitute the body of phenomena which must be explained or, more precisely, understood. I can now, at last, pose the key question that drives this study: what shapes their course?

In attempting to answer it, I make an assumption that builds on a claim by Erickson about the nature of causation in social life (1986, p. 127). It rests on the belief that human beings, unlike billiard balls and other purely physical entities, interpret their environment, and that different humans interpret their environment differently. The actions of others are part of this environment. Humans impute meaning to these actions and 'take their own actions in accord with the meaning interpretations they have made' (ibid.). In this view, as elucidated by Erickson, 'meaning-interpretations ... are causal for humans' (ibid.).

I start from Erickson's assertion. My study is about how teachers interpret and respond to the actions of children. But three refinements of his claim are called for. One stems from a recognition that actions do not stand still, but follow one upon another. Each invites interpretation. Each interpretation may be influenced by interpretations already made. Each may reflect back on and modify earlier interpretations. In consequence, interpretation may be seen as 'continually under revision as events unfold' (Hammersley and Atkinson, 1983, p. 7). Meaning interpretation, in short, is a dynamic activity. Within interaction, the particular focus of my investigation, its dynamic nature may especially prevail. The parallel with reading a text is thus far from inappropriate.

Second, there is no one-to-one relationship between action and its interpretation. Choice is possible. Prediction of meaning-interpretation can never be guaranteed. This means that Erickson's claim for a causal link between meaning interpretation and action is inappropriate. The notion appears to stem from the physical sciences. It is out of place in the human. Third, actors do not operate only in the light of their

interpretations of other people's actions. They have intentions, beliefs, and so on, of their own. What they do reflects their positions as well as their readings of the actions of others. Meaning-interpretation might thus better be regarded as contributory to the course of action, rather than its single cause.

This argument suggests that one needs to go beyond the bald assertion that meaning interpretations are causal for human action. Human action might better be regarded as involving both interpretation - of context and of the meanings of others within it - and the intentionality (and all that lies behind it by way of values, beliefs, and attitudes) and capacity to make choices of the agents involved. This, at any rate, is how I see it in this study. Describing and explaining such complex phenomena falls within the broad enterprise of what Wertsch (1991, p. 8) sees as the fundamental task for a sociocultural approach to mind. It is a formidable undertaking.

Whether the link between meaning-interpretation and action is regarded as causative or, as in my less mechanistic preference, contributory, Erickson's claim enables me to give greater definition to this investigation, for it points to where my focus should be: on teachers' meaning-interpretations, as they are embedded in continuing interaction. It leaves me, however, with the problem of how I might gain access to such interpretations. My insistence on regarding teachers' (and children's) contributions to these interactions as thinking-in-action in their own right provides a partial answer. I move towards Bruner by accepting that such manifestations do not comprise the whole of what is meant by teachers' consciousness. The legitimacy of this point is not denied by Ryle, who acknowledged that much of our ordinary thinking is conducted 'in internal monologue or silent soliloquy' (op. cit., p. 18). But I do not conclude from this that one must look to this internal monologue for evidence of meaning-interpretation.

On the contrary, I follow Ryle in supposing that this internal monologue is not

merely unessential to intelligent action, but that it is logically impossible that it could be. The point requires careful attention to the consequences of his distinction between 'knowing how', by which he means being able to undertake particular activities successfully (teaching could be one) and 'knowing that', by which he means propositional knowledge (op. cit., p. 28 ff). What must be abandoned, he argues, is the notion that intelligent, or knowing performance, depends on the agent inwardly rehearsing certain propositions about what is to be done prior to its being done: 'the chef must recite his recipes to himself before he can cook ... the chess-player must run over in his head all the relevant rules and tactical maxims of the game before he can make correct and simple moves' (op. cit., p. 30); and so on. He must, in short, 'do a bit of theory and then do a bit of practice' (ibid.).

The crucial objection to this 'intellectualist legend', Ryle argues, is that the consideration of propositions is itself a more - or less - intelligent operation:

... if, for any operation to be intelligently executed, a prior theoretical operation had first to be performed and performed intelligently, it would be a logical impossibility for anyone ever to break out of the circle (p. 31).

To undertake an activity, such as teaching, more or less intelligently, according to this argument, is not first to inwardly rehearse it and then to enact it, but rather to do it in a - more or less - intelligent manner. What marks it out as - more or less - intelligent is, among other things, what the teacher is disposed to notice in the course of the activity and what use she makes of it in pursuit of her educative aspirations. And what she is disposed to notice, one might anticipate, is what time, practice and reflection have taught her to be significant.

I take this argument as a warrant to shift the direction of my enquiry away from any attempt to uncover teachers' thinking in action, if, by thinking in action, one means some inner activity that takes place prior to or alongside their teaching

actions. Instead, my attention goes to what teachers are disposed to notice about their pupils in the course of their interactions with them and what they make of what they notice. In short, to use Erickson's term, it is to their 'meaning-interpretations'.

How to discern teachers' meaning-interpretations is thus my central problem. For a solution, I look to a reconciliation between the strictures laid down by Ryle, outlined above, and the possibilities offered by Bruner. In particular, I take from the latter the injunction that the primary source of information about the mental states - beliefs, desires, intentions, and so on - of participants in interactive life is the participants themselves:

A culturally sensitive psychology ... is and must be based not only on what people actually *do*, but what they *say* they do and what they say caused them to do what they did. It is also concerned with what people *say* others did and why. And above all, it is concerned with what people *say* their worlds are like (Bruner, 1990, p. 16; emphases in original).

The implication for my study is that an understanding of teachers' actions within classroom interaction must be founded on their perceptions. In short, it involves seeing interaction through their eyes.

4.6 DATA COLLECTION

I used two major sources of data for the main phase of this study. One involved records of classroom interaction. The other comprised teacher commentary on the interaction. Gathering the second was essential to my goal of seeing the interaction through the teachers' eyes. Its requirements determined the way in which I gathered the first. Since these two exercises in data gathering form the foundation on which the enquiry rests, I set out here the thinking behind them in some detail. The further matters of the extent of the data and the validity of what I make of

them, I deal with later.

Determining the means by which I might gain access to teachers' perceptions of their part in interaction was thus my primary task. I was aware of many techniques for eliciting teachers' self-reports on their thinking. Most were unsuited to my needs. The repertory grid technique (Kelly, 1955), which is based on the twin assumptions that human beings understand their environment in terms of their construct systems and that these systems can be represented in terms of bipolar dimensions, I rejected on the grounds that it was insufficiently flexible to deal with the detailed unfolding of interaction, as opposed to teachers' implicit theories at a more general level. I believed that concept mapping (see, eg., Morinne-Dersheimer et al., 1992) had the same weakness. Journal keeping was also rejected. I had long been an advocate of it as a heuristic device for pupils and interested in its possibilities (see, eg., Holly, 1984) for enabling teachers to externalise and reflect on their teaching. I was aware of how it had been used for research on teachers' planning processes and personal theories (Elbaz, 1983; Tann, 1993). Like the repertory grid technique, however, it appeared to be ill-suited to dealing with the dynamics of interaction. A fourth approach, policy capturing, appeared to suffer from the same defect and was, moreover, open to the criticism that the authenticity of participants' responses could not be guaranteed. Think-aloud commentaries (e.g., Yinger, 1980), a fifth possibility, in which teachers comment on their activity as it unfolds, could only be done at the cost of interrupting interaction. This I wanted to avoid.

Stimulated recall commentary, in which audio or videotapes of teaching episodes are played back to the teachers concerned in order, it is claimed, to prompt recollection of their thinking in the course of the episodes appeared to offer more robust possibilities. In selecting it in the early days of this investigation as my primary technique for collecting data on teachers' thinking, I was influenced by the review by Clark and Peterson (1986) of twelve studies of teachers' interactive

decision making conducted in the 1960s, 70s and 80s. I saw that, like the think aloud technique, it involved teacher commentary on action as it unfolded which could be audiotaped, transcribed and analysed, but that it had the advantage of avoiding disruption of the course of events. Thus it met the key conditions for my approach.

I was aware that research on teacher thinking was becoming more diverse (eg. Kagan, 1990; Day et al., 1990) and that stimulated recall was being used for new purposes, as in the study of the metaphors used by teachers in relation to their teaching (Munby, 1986) and narrative approaches (eg., Connelly and Clandinin, 1990). At the time I opted to use stimulus recall for my own purposes, I did not know about the criticisms of this technique in the 80s, especially by Yinger (1986) and Calderhead (1987), later reviewed by Calderhead (1996). These were directed, I have subsequently learned, at two key assumptions underpinning research using the technique from the time of Bloom (1953) onwards. One was that, by the presentation of audio or videotaped records of classroom events, the teacher:

... may be enabled to relive an original situation with vividness and accuracy
... (Bloom, 1953, p. 161; quoted in Yinger, 1986, p. 267).

The second was that such 'reliving' enabled the teacher to recall his or her thinking, as it occurred in the course of the events. By enabling the subject to articulate these 'recollections', the researcher could acquire representations of the teacher's thinking as it occurred in the course of interaction. A lesser assumption, drawn from an information processing perspective, was that the limitations of short-term memory made such recollections unstable. The greater the time between the event and attempts at its recollection, the more likely it was that the event was either lost to memory or transformed through storage in long-term memory. The methodological consequence was that recall had to be stimulated as quickly as possible after the events themselves. The greater the interval, the less effective the technique.

Perhaps the most important criticism was offered by Yinger (op. cit.). Teachers watching videos of their activities were not so much reliving the activities, as responding to the cues offered by the videos as events in their own right. Their role in relation to the action was thus different. Freed from the role of orchestrating the teaching and learning activities, they became watchers of the events in which they had earlier taken part. One might anticipate that, in consequence, what they noted would differ from what they saw and thought in the course of the events themselves. The second was closely related. In not having to direct action, they were at liberty to comment on events, including recollections of thoughts occurring inwardly, rather than merely to recall them. No longer in the participant role, teachers could adopt a distanced, more measured stance. In consequence, what researchers got from teachers' responses was not thinking recalled, but commentary on events, including their own parts in them.

This interpretation is consistent with the common finding, reported in Calderhead (1996, p. 711), that teachers' verbal reports involve an amalgam of justifications, explanations, recollections and partial descriptions. It is also consistent with a report in an earlier review of research on teachers' interactive thoughts that between 40% and 50% of teachers' comments were about instructional objectives, subject matter and the instructional process (Clark and Peterson, 1986, p. 269: authors' figures for the three categories combined to aid exposition). Each of these categories may be regarded as explanatory or justificatory in function. As for the relationship between short-term and long-term memory, a third focus for criticism, it was argued by Yinger (1986) that, so limited was the capacity of the former, the greater part of what was 'recalled' was reconstructed from long-term storage and inevitably changed in the process. The implication was that such 'recollections' differed to a greater or lesser degree from the original occurrences.

These critiques have two significant themes. First, as a means for facilitating the recollection of thoughts that accompanied action, the technique of stimulated

recall is seriously wanting. What is 'recalled' is not what was earlier thought, but a version of it transformed by the limitations of human memory or the new, non-teaching, context in which 'recollection' is stimulated. Second, 'recollections' prompted in this way differ significantly from what went on initially. One might draw a parallel here between this interpretation of the springs of teacher commentary and the distinction developed earlier by the Schools Council Writing Research Unit (Schools Council, 1974) between language used in participant and spectator roles. In watching video recordings - or listening to audiotapes - of events, teachers became spectators of the events, rather than participants in them. Using language in the spectator role -which may be done through speech as well as in writing - teachers savour events, turn them over in their minds, making sense of them in ways that differ from those of their earlier, participatory interpretations. I would sum this up by suggesting that what stimulated recall evokes is not the recollection of thinking-in-action, but rather reflection-on-action or, more accurately, reflection on thinking-in-action.

I owe the notion of reflection-on-action to Schön (1983). The key point about it is that it happens after, rather than during, action:

Sometimes, in the relative tranquillity of a postmortem, [practitioners] think back on a project they have undertaken, a situation they have lived through, and they explore the understandings they have brought to their handling of the case. They may do this in a moment of idle speculation, or in a deliberate effort to prepare themselves for future cases (op. cit., p. 61).

I acknowledge Schön's assertion that reflection may also accompany action ('reflection-in-action'; p. 49ff), but note two things about how he depicts it. One is that his most detailed examples relate to non-verbal action, as in baseball playing and jazz improvisation, which may well allow for accompanying verbalisation, silent or otherwise. Second, where they do involve verbal activity, as in psychotherapy or legal advocacy, they relate to action that may take place over a lengthy time span and may, moreover, be open to pauses for reflection in its course.

It may well be that classroom interaction allows such pauses and that, within them, there are opportunities for reflection-in-action on the part of the teachers. The press of such interaction would suggest, however, that such pauses are relatively rare. Moreover, teachers' recollections of what went on in them would be recollections of reflection-in-action, not thinking-in-action.

These criticisms of stimulated recall threaten the validity of investigations that assume that the technique affords researchers access to teachers' thinking-in-action. With my own in view, I take them seriously. A key point about this study, however, is that it does not rest on such an assumption. On the contrary, as set out earlier, it argues that thinking-in-action does not have to be recalled, or even reconstructed. It is available, in part, even if not in whole, in the video records and transcripts of the classroom interactions. My fundamental assumption is that attempts to understand this thinking-in-action must begin with the commentaries of the teachers involved. No better means of gaining such commentaries is available than that prompted by audio- or video records of the classroom interaction in which the thinking-in-action occurs. When the relationship between the interactions and the subsequent, prompted commentary is conceived in this way, the threat to validity noted by Yinger, Calderhead and others is not so much diminished as negated. I claim no prescience in this matter, however. It is rather a serendipitous consequence of my original scheme, greatly influenced by the earlier writings of Ryle, and formed before I was aware of the criticisms of the more usual claims for the stimulated recall technique. All this means that I am confident about the main basis of my approach. Since it does not involve recall, however, it does entail that I should more accurately entitle it as 'stimulated commentary'.

4.7 QUESTIONS OF VALIDITY AND RELIABILITY

I attend now to some further crucial matters of validity and reliability, each of

which required attention in my plans. By validity, I mean the study's warrant for representing the world it claims to represent. By reliability, I mean the extent that claims made on the basis of the investigation can be applied to other settings. Reliability in this sense may thus be seen as a particular dimension of validity. I have addressed some crucial matters about the former in the earlier section on the subject matter of the enquiry and, earlier still, have pointed to the ethical necessity of such concerns. Here I have more to say about the imperative of validity especially, before returning to it in the final chapter. In this way, I continue to address the central question for any account of this kind: why should anyone believe it?

One could argue that, if my story were well enough told, it would be eminently believable. I could depict its setting, fill it with characters and involve them in events so recognisable that all to whom schools are familiar places would admit to its credibility. I do not doubt the necessity of this call. Indeed, unless I meet it, readers would have little incentive to consider its claims. But, in itself, this would not be enough. It would be to confuse life-like qualities with the qualities of particular lives actually lived: to make, in short, a novelist's claims, not a researcher's.

My priority is to write as a researcher, but in a manner that allows the reader:

to experience vicariously the setting that is described ...to survey the full range of evidence on which the author's interpretive analysis is based ... to consider the theoretical and personal grounds of the author's perspective as it change[s] during the course of the study ... [and] to function as a coanalyst of the case reported (Erickson, 1986, p. 145).

With this in mind, my first obligation is to assure readers that the events that form the basis of this study are not merely products of my imagination and that what I make of them is not mere whim. Without this assurance, the integrity of my position

collapses. Mere assertions of integrity, however, are not enough. Readers need to be able to judge for themselves whether mine are copper-bottomed. To do this, they must at the very least be able to see how I have worked. But how might this possibility be afforded? Einstein's admonition, while related to a quite different tradition of enquiry, points the way:

If you want to find out anything from theoretical physicists about the methods they use, I advise you to stick to one principle: don't listen to their words, fix your attention on their deeds (Einstein, cited in Medawar, 1982, pp. 79-80).

Readers must be able to see what I did. Making my account and how it was arrived at transparent would appear be basic requirements. Hence the ways in which I have worked are depicted in detail throughout this account. In this way I hope that readers are furnished with enough detail to make their own judgments about the integrity of what I have done.

Integrity is a quality that I try to imbue my actions with as I shape and present this account, and that I hope marked all that preceded it. The effort is thus implicit in my actions and the account itself. Recognition of its presence may give the reader confidence in my intentions. But it cannot of itself merit belief. For that, something else is needed. I take this to be a matter of what is commonly referred to as 'validity'.

Had this study been in the positivistic tradition, the points of concern would have been clear. They would have centred around a particular conception of validity and the tests would have been primarily procedural. One could have delineated its field of concern, laid out its hypotheses, located its samples, identified its interventions, considered the steps it took to set up controls, shown the means by which quantitative measurements were made, and so on. Step by step, one could have shown how the generalisations which formed its conclusions had been established. The chains of reasoning which led to them could have been subjected to the tests of validity customarily accepted by the community of experimental

researchers. The conclusions could then have been regarded as ‘sound’ (or not). Any doubts could have been resolved by a reconsideration of the logic of the overall argument or by the simple replication of the procedures involved.

This, however, has been an interpretive endeavour. Many, working within this tradition, have argued that validation procedures drawn from quantitative enquiry are not relevant to their concerns (eg., Maxwell, 1992, p. 280). Others, like Wolcott, argue that it is not validity so much as understanding that is central (1990, p. 146). As seen in 3.3, the notion of ‘understanding’ begs epistemological and psychological issues. Nonetheless, I am sympathetic to Wolcott’s view. I accept that accounts of aspects of classroom practice of the kind which are the focus of this study are useful in so far as they have potential for practical or critical outcomes. I see the development of understanding to be a necessary condition for such outcomes, for without it, practice is blind and criticism arbitrary.

The espousal of useful understanding as my goal, however, does not dispose of the issue of validity. It rather shifts the question to what is entailed by validity in an account that claims to offer a critical understanding of particular, but typical, social phenomena. The key issue, as I see it, relates to the relationship between the account and the object of its enquiry. Just what sense one might make of the existence independently of ourselves of such an object reflects questions about mind and reality that have occupied philosophers over the centuries. It would be inappropriate to go into them here. Instead, I shall curtail discussion by asserting that I work from a position of ‘critical realism’. That is to say, I assume that there is - or was - something beyond my account that existed independently of it, but do not claim that only one account of it is possible. My position thus matches Maxwell’s:

Validity, in a broad sense, pertains to [the] relationship between an account and something outside that account, whether this something is construed as objective reality, the constructions of actors, or a variety of other possible

interpretations. (Maxwell, 1992, p. 282)

The crucial point is that, for any account to be valid and convincing, there must be connections between it and the reality to which it refers which are not arbitrary, and those connections must be demonstrated.

To this end, not any connections will do. What matters is that they should relate to the kind or kinds of understanding of these actions which I seek. These, I take it, are the kinds of understanding which are relevant to critical practical theorising. In identifying them, I again follow Maxwell, whose proposals build on Runciman's (1983) analysis of the types of understanding involved in social theory. They involve five broad categories:

descriptive, interpretive, theoretical, generalisation and evaluative (Maxwell, 1992, pp. 284, 285).

This typology, Maxwell claims, at once codifies commonsense conceptual structures and reflects what many qualitative researchers actually do. For me, it has two further merits. In positing successive layers of understanding, it offers a framework for the critique which give an account of this kind potential worth. More immediately, it offers a structure for the study's warrants to validity. On the grounds that weaknesses at base entail the rejection of all that is built on it, I begin with its claims to descriptive validity.

Descriptive validity involves fidelity to acts rather than actions. That is to say, it involves 'what the researcher reports as having seen or heard (or touched, smelled, and so on)' (Maxwell, *op. cit.*, p. 286) rather than the meanings that might be attached to it. All subsequent categories of validity depend on it. With this in mind, I adopted a number of devices intended to ensure that my account was not made up or distorted. They are described in detail in Chapters 5 and 6, in relation to the pilot and the main phases of the study respectively. Here I indicate my belief that,

on the basis of what I learned from the pilot phase, the steps taken to maximise descriptive validity in the main phase were notably more rigorous.

My concern, however, only begins with description. The fidelity of that description is simply an initial requirement of the greater task of building interpretive understanding of what the events described mean to the teacher involved. By meaning, again I follow Maxwell:

intention, cognition, affect, belief, evaluation and anything else that could be encompassed by what is broadly termed the “participants’ perspective” (op. cit., p. 288).

Understanding the subject’s meanings differs from description in two fundamental ways. First, it is inherently ideational or mental. Second, while it employs the initial description as its building blocks, its construction is formed by the researcher. In consequence, the nature of the understanding arrived at, its validity and the threats to its validity, are themselves fundamentally different.

Interpretive validity demands two things especially. First, phenomena must be comprehended, ‘not on the basis of the researcher’s perspective and categories, but from those of the participants in the situations studied’ (Maxwell, op. cit., p. 289). Second, in going beyond description, nothing must be introduced that is an unwarranted creation of the researcher’s fantasy. It was primarily in its main phase that my work became interpretive. I describe this in detail Chapter 6, including the steps taken to maximise its validity. I foreshadow it here only to show in outline how I endeavoured to meet the two demands identified above.

Again following Maxwell, to comprehend something from the participant’s perspective requires two things. First, interpretation must be grounded in the accounts of the subject involved and rely as much as possible on his words and concepts. In ways detailed later, I set out to gather such accounts and to use the

participant's own language directly in analysing them (see 6.6.2). Where I could not draw directly from this source, I used words or phrases as close to ordinary language as possible, such as 'relationships', 'judgments' and 'resolving'. Such terms, I hold, are demonstrably 'experience-near' (Geertz, 1974, cited in Maxwell, *op. cit.*, p. 289), that is to say, based on the subject's immediate concepts, rather than on theoretical abstractions. Second, the dominant concern must be the fidelity of what is said to the participant's perspective. I set out to fulfil the latter requirement by referring my accounts back to the participant, posing the questions: 'How accurately does this reflect what you have said and believe?' and 'How comfortable are you with the way in which I put it?' Only as long as his answers were positive could I be confident of the validity of my account.

With regard to trying to ensure that my account was not a product of my own fantasy, I invited a second person, a colleague not involved in the investigation, but familiar with classroom life, to check my analysis of the participant's accounts, a technique sometimes referred to as inter-judge comparison. It has its dangers. They are akin to those associated with interviewing. For a variety of reasons, people may tell you what they think you want. At least two safeguards are available. One is to seek a second, and even a third, opinion. The weakness of this is that the process may be repeated to infinity without guaranteeing certainty. The other is to invite, even impress on, whoever is involved to be unflinching in revealing difficulties and what lies behind them. I chose the latter path. In hindsight, I believe that the choice was right on grounds of principle and practicality, but also in terms of the outcomes of the constructively critical stance adopted by my colleague. Details are offered in 6.6.2.2.

Theoretical understanding differs from descriptive and interpretive understanding by being more abstract and by having explanation as its goal. Following Maxwell (*op. cit.*, p.291), I accept that theoretical validity relates to an account's validity as an explanation, or theory, of a phenomenon. Further, since a theory has two

elements, its concepts and the relationships postulated between them, I recognise that its validity depends on the validity of each of the elements that form it. To use Maxwell's metaphor, both the building blocks and the way they are put together must be sound.

I admit at once to a possible threat to the validity of the concepts, or 'constructs' as they are frequently named, I use in my attempt to build theoretical understanding. As already indicated, my original intention to gather data from case studies of two teachers was not realised. In consequence, I have had no means of finding out whether the constructs I arrived at on the basis of my analysis of one teacher's thinking had their parallels in the thought of the other. Since there was no way of putting this right within the timescale available, I am therefore especially cautious about the claims that I make.

That acknowledged, sufficient other safeguards were built into the process to make me think that a reasonable degree of concept validity was reached. I regard three as especially important. First, I gathered my data from two distinct sources: the videotapes of classroom interaction; and the interview commentaries on the interaction by the teacher involved. Second, as indicated above, I asked the teacher to corroborate the data and to verify my interpretation of it. Third, also as indicated above, at significant points in the process, I subjected my interpretation to a third party's examination and, where needed, amended it in the light of what transpired.

I deal with the relational aspect of theoretical validity in 9.2.4.

Generalisability refers to the extent to which one can extend an account of a particular phenomenon to others not directly studied. Following Maxwell (*op. cit.*, p. 293), but with my own investigation in mind, I see this to have two aspects: internal generalisability, by which is meant the degree to which one can generalise

from the situation studied to others involving the same person, but not studied; and external generalisability, by which is meant the extent to which one can generalise the study's findings to other teachers.

I approached the issue of internal generalisability in a number of ways. First, I made it clear to participants that I wanted to study what was typical about their teaching. Second, I asked if I could observe typical sequences of activity prior to the main study so that I could form an idea of their shape. Both teachers afforded me this facility, and we agreed on the basis of these pilot studies on the broad features that I might expect to see in the study proper. As noted above, the study proper was conducted only in one of the classrooms involved. In it, to further ensure that what I was observing was typical, I sought and gained the assurance that, at a general level, what would happen (by which I mean the interrelationship and sequencing of whole class, small group and individual activity, as well as the curriculum itself) accorded with customary practice.

Such assurances, while necessary, are in themselves insufficient guarantees of internal generalisability. I had also to consider the possibility, even the likelihood, that, however committed the teacher might be to ensuring that what I observed was typical, the research process itself might cause distortion. From my own professional experience, I am aware that the entry of a new person into a teaching situation changes the situation and may change what is done within it as well, especially when the entrant is accompanied by the paraphernalia of data recording. I know of no final guarantee that such changes will not happen, and do not believe that one could exist. In its absence, the best I could do was to be conscious of the possibility of such effects (usually referred to as the 'reactivity factor') and to do all I could to minimise them. Thus I tried to become accepted as a familiar person in the classroom by entering it gradually and engaging in some of its ancillary activities, such as preparing paint. Similarly, my recording activities, initially with a notebook, later primarily with a video camera, were introduced

gradually, and prior to the data-gathering sessions themselves. Anticipating that the children would be curious about, and might react to, the latter especially, I asked the teacher to explain to the children what I was about and to ask them not to converse with me while I was recording. So far as I could see and, more importantly, so far as the teacher could see, this worked well. Indeed, I was surprised at how quickly the children came to ignore the camera and me on such occasions.

I do not think that any teacher could be oblivious to the presence of an observer in the same way. What matters, therefore, is whether my presence affected what this teacher did. I cannot guarantee that it did not, but believe that any changes would have been insignificant. He knew me beforehand. He had been a member of the working party on assessment I had chaired. Before that, he had participated in many in-service ventures for which I had been responsible (the other participant in this project had been recruited in the same way). We knew where each other's interests lay. I recognise that this foreknowledge carried with it the possibility that, by intention or otherwise, he might incline his teaching towards his perception of my interests. Further, such accommodation might also have taken place at the interview stage.

In my view, our mutually-interacting experience minimised this possibility. As a co-worker on the assessment working party, the teacher was aware of many of my intellectual doubts, had shared in its exploratory activities and contributed significantly to its progress. He was committed to the non-judgmental stance that we adopted to one another's activity and I was at pains to ensure that the research was done in the same spirit. Above all, his own commitment to understanding the teaching process more fully, in the cause of which he saw himself as a collaborator rather than as merely the subject of a research project, was the soundest warrant one could have for the authenticity of the classroom activity I recorded and for the integrity of his commentary on it.

I would claim sufficient warrant on the above grounds that what I noted of the teacher's work was typical of his practice and of how he thought about it. Its internal generalisability could therefore be seen as valid, provided that my analysis was properly done. Its external generalisability, however, raises different issues. Not the least relate to its role in qualitative research. The crucial point is that generalisability in such research is normally based on an assumption that its theories may be useful in making sense of similar persons or settings, rather than on an explicit sampling process and the formation of conclusions about a specified population through statistical inference (Yin, 1984; cited in Maxwell, *op. cit.*, p. 293). In short, there must be a possibility that the setting and events studied are in some way typical of others.

I consider this, together with evaluative validity, in Chapter 9.

CHAPTER 5

DATA COLLECTION AND ANALYSIS: PILOT PHASE

5.1 STRATEGY

This study had two phases: a pilot project and the main venture that evolved from it. This chapter is concerned primarily with the former. My account is limited to what is needed to show how its outcomes influenced the main venture, depicted in full in Chapter 6. For economy, I deal here one with some matters common to both.

In both phases, my conduct was informed by two ethical concerns: the respect for truth proper to any investigation; and an imperative to respect everyone involved as persons. More is said about this later in this chapter. The concern for the integrity of those involved was codified in an ethics protocol (Appendix 1.1). The rationale for my ethical stance appears in 4.2.

Beyond these concerns, four further strategic decisions were made. Two related to both phases. First, I determined to focus on the work of teachers in primary schools. My main reason was pragmatic. Most of my professional experience and teaching contacts were with people working in them. I was more likely to be granted access to classrooms there than elsewhere. Further, my intellectual and emotional interests lay in this field especially.

Second, I focused on the humanities. My reasons for this related to my wish to find out how teachers judge children in the course of normal classroom activity. Noting the long history of assessment activity in relation to English and mathematics and the extensive in-service attention given to these fields, especially in the National Curriculum's early days, I assumed that it would be difficult for teachers to talk about formative activity in these areas other than in terms that were traditional or associated with the National Curriculum itself. I anticipated similar difficulties in

relation to science. The humanities I regarded as different.

For many years they had been a relatively neglected area of the primary curriculum (DES, 1978; Kinder et al., 1995). Curriculum development work (eg., Blyth et al., 1976) had focused largely on the middle, rather than the primary years of schooling. Within the primary phase, their relative lack of definition and contentious content (Ross et al., 1993) appeared to be advantageous, for it suggested that teachers would more than usually be thrown back on their own resources when discussing their work. More particularly, assessment in the humanities had received little attention, especially in relation to primary education. Of the available literature (eg., Blyth 1990), I had seen little sign of its influence in the schools I knew. Finally, following Pring (1976), I acknowledged that the structures of the humanities depended less on constellations of logically interrelated concepts than mathematics or science, and assumed that they would be less amenable to the tightly-defined cycles of activity which typified specifications for activity in the core areas. In short, they offered a potentially fruitful location for exploring the issues which concerned me.

Third, taking writing as a medium for thinking, I assumed that children's writing in progress would offer a significant location for teachers' formative interventions in children's learning. Hence teacher-pupil interaction in relation to writing in the humanities would afford insights into the formative activity, if it existed, that I wanted to investigate. Finally, my interest in how teachers attempt to relate their actions to the course of children's learning led me to assume that focusing on classrooms in which learning happened would add a desirable, even if not essential, element to the project.

I approached prospective participants with three main things in mind. First, they needed to be interested, not only in teaching the humanities, but also in investigating it. My primary concern here was ethical. I believed that it was

improper for me to work with anyone who did not anticipate that participation would offer personal satisfaction. At the same time, such interest was potentially beneficial to me, for it made cooperation and honesty of response more likely. Second, to gain a comparative perspective, I set out to work with people teaching different age groups within the primary phase. To enable me to consider their work in depth, I limited them to two. Of these, one worked with six to seven year olds and the other with seven to eleven year olds. One's entry to teaching had coincided with the introduction of the National Curriculum. The other's predated this by some years. These differing entry points themselves held out possibilities of differing perspectives.

Finally, seeking a common focus, I provided each participant with a definition, taken from the pre-National Curriculum literature, of the concerns of the humanities:

The main focus ...is (ideally) upon understanding what is distinctively humane about man or woman - exploring the feelings and emotions, seeing man's development through history, coming to grips with the culture that both shapes and is shaped by persons, gaining insight into human motivation, identifying ways in which people interact with their physical and social environment, fathoming the ways in which man finds meaning in life (through religion, philosophy or the arts), and appreciating the basis of the social framework and the institutions created by man (Pring, 1984, p. 119).

I requested each participant to select from normal classroom work two projects, units of work or series of activities which reflected his or her approach to the humanities which I could observe. With each teacher, the initial project would be the focus for the pilot phase of the venture. The second, to take place in the following school year, would constitute the main phase. For each phase, I made it clear that I would see elements of the projects concerned rather than the whole.

Unexpectedly, work with one participant had to be halted before the second phase could be started, but too late to involve another person. In what follows, I

concentrate on the remaining teacher and his work with the six to seven year olds. To preserve his anonymity, I refer to him as 'T' in all that follows. Similarly, I use pseudonyms for the children involved and the fictitious names of 'Western Primary' and 'Rivermouth' for the school and location that provided the setting.

I now emphasise a final strategic matter. In relation to all my classroom data-gathering, and to the investigations associated with it, I impressed on those concerned that, so far as was consciously possible, no departures from normal practice should be made for my sake. By this, I meant everything from the content of the projects and the teaching approaches employed to the ways in which things were fitted into the wider structures of the school and classroom timetables. I saw this as not only a methodological imperative, but also as an ethical one.

5.2 THE SETTING

Western is a large primary school on the edge of Rivermouth, a large town in one of England's south western counties. It had recently been formed by the amalgamation under one head teacher of two geographically and organisationally separate schools, one infant and one junior. Until its new buildings were completed, what was known as the Key Stage 1 section continued to function in the former infant school's premises. It was there that most of my field work was done.

Opened initially in a stone Victorian building and with a new wing added in the 1920s, its capacity was further extended by the provision of more recent mobile classrooms to meet the needs of the growing population it served. T's class was housed in the 1920s extension in one of three rooms linked by an enclosed corridor wide enough to display work and other artifacts, but not for children to work in other than briefly.

My work there spread over two years, a matter necessitated by the imperative of accommodating my research activities to the curricular patterns of T and his school. T's class, referred to increasingly as 'Year 2' in the wake of the growing use of National Curriculum nomenclature, was made up of 30 six to seven year old children in my first year at Western and 32 in the second. While the area was socially diverse, the relatively small proportion of children registered for free school meals suggested that the extremes of poverty met in some inner city and rural areas were not in evidence. T saw most of the children as cooperative and felt that he enjoyed 'good parental support, something built up over several years'. His work was supported by a full-time classroom assistant shared with another teacher.

5.3 PILOT PHASE

5.3.1 Purposes and strategy

The pilot phase had five main purposes. I wanted: (i) to know, in broad terms, how T's approach to teaching fitted into the philosophical traditions of English primary education; (ii) to arrive at an awareness of the overall pattern of classroom activity in his class in relation to the humanities; (iii) to ascertain where, if at all, formative assessment activity was occurring; (iv), to arrive at a preliminary sense of the nature of this activity; (v) to determine where learning was taking place with a view to relating it to formative assessment. I anticipated that the first item could be settled with reasonable confidence with the first phase of the project. What I found about the others would receive more detailed attention in the second phase in the light of what I learned.

Before starting, I had to form a strategy that would enable me to obtain the data I wanted without breaching the ethical principles I had espoused. Having already

informally discussed the possibility of an investigation with T on a number of occasions and noted his interest, I formally approached the head teacher for permission to proceed. We met at the school, where I explained the purpose and nature of what I hoped to do. He was supportive and interested, while reminding me of the need to be aware of pressures on T.

I told the head about the expected time-span of this initial phase of my research (to be spread over two terms, with visits over short spells within them). I emphasised my wish to conduct the investigation in a way that would bring benefit to the children involved, to T and, if others became interested, to the school as a whole. On a further visit, we agreed the ethical principles to which I would work.

T was already familiar with the broad thrust of the investigation. Indeed, through his association with LEA's Formative Assessment Working Group, he was deeply interested in its possibilities. I had not gone to the school, however, with a fully-formed strategy for its course. For ethical and motivational reasons, I wanted him to be involved in key decisions wherever possible. With this in mind, I outlined two possibilities with a view to eliciting his views about which could be managed:

- Tape-recording what T regarded as significant teaching episodes, written up as anecdotes, with copies of children's writing retained. Such notes would not call for my classroom presence, but opportunities for me to talk or correspond with him about the interpretation of the data would be needed;
- Allowing me to be in the classroom, as a non-participant observer, recording its events. These might be audio-recorded, although much might only be captured in field-notes. All this, too, would involve joint interpretation.

T seemed happy to support the first approach, but indicated that it would rarely be possible for more than the sketchiest of notes to be made in the press of classroom

action, since teaching and the needs of the children had to take priority. I heeded this ethical stance. It did, however, rule out the approach, for it meant that sufficient data would be hard to come by. While clearly interested in the second approach, T pointed out that the acoustics of the room would hinder tape recording. Aware of how radio microphones had been used by other researchers (notably Tizard and Hughes, 1984), I was keen to take T's interest in this further. My aspirations were blunted, however, when I saw that the recording equipment available to me required the assistance of two adults, one of whom needed to be a van driver, to move it to the school. I was thus left with the second option, albeit without the realistic possibility of using radio microphones. I determined to leave voice-recording to the second phase.

Beyond this, I evolved three further tactics, each related to my involvement in the life of the classroom and its associated curricular activity. One involved helping the children and adults associated with the class, as far as was possible in the time available, to see me as a familiar part of the classroom landscape. A second was to develop a way of existence in the classroom that was consistent with my role of non-participant observer but which still enabled me to contribute to its operation. The third was to show T how I intended to collect data - especially through my field notes - in the course of its activity. Anything that threatened to disturb proceedings could thus be eliminated or modified before the main phase began. All three were consistent with the ethical principles that would inform my activities.

5.3.2 Approach to observing and recording curricular activity

What follows is an account of how I observed and recorded the curricular activity for the pilot phase. The activity involved, in T's words, 'a short local history project'. Spread over a fortnight, by no means all of which was devoted to the venture, for it had to take its place within the context of the curriculum as a whole, it was, he said, typical of the projects he built into each school year. I was not

present for the whole of it. T, however, provided an outline for me of what happened in my absence. By combining this with what I saw, I gained a picture of the project's overall course. My account of it is not intended to be exhaustive, but rather to provide enough detail to allow me to do three things:

- show how I gathered my data;
- show what I learned about how T worked;
- indicate the conclusions I drew from this phase for the main phase of the investigation.

Thus, at times negotiated with T, I made three one-day visits to observe how the project evolved. While there, as well as trying to capture in broad terms the course of activities of the class as a whole, I focused especially on six children, nominated by T as a typical sub-group of the kind that he tried to nurture: in his words, one that, 'got along well and constructively together'. I recorded in photographs and hand-written notes as much as possible of the activity that was relevant to my concerns. I paid particular heed to what received attention and what was said, written or otherwise represented about it. I made copies of what the children had written or drawn. All this was done as unobtrusively as possible, in accordance with my stance as non-participant observer. Most of my notes, for instance, were made as I sat near the back of the room, close enough to the small group to be able to see and hear what went on. My only departure from this was when I accompanied the class on an outside visit (see 5.3.3), where, to help T, I worked as one of the adult helpers to ensure the children's safety and to respond to their questions. Even here, I made my notes discreetly. In the lunch times and after school, I helped T with the minor tasks that ensure the smooth running of a class: cutting paper and card; preparing paint; and so on.

I typed up the notes up as soon as possible afterwards, usually the next day, in the form of narratives of proceedings, interspersed with teacher-pupil dialogues reconstructed from what I had recorded in my notes (for economy, I refer to these

as ‘transcripts’ from here on, even though they fell short of the normal expectations of this term). Where appropriate, typed versions of the children’s writing were also included, along with copies of their drawings. Copies of the ‘transcripts’ and narratives were subsequently passed to T for his verification and amended in the light of his comments. What follows draws on this resulting accumulation of data. I present it, not as an exhaustive report of what transpired, but selectively, with enough detail to illustrate its variety, the ways in which I noted it and some of the difficulties I encountered. At various junctures, I draw on my notes directly. At others, I refer the reader to the relevant point in the appendices.

5.3.3 Course of project and emergence of pattern

In describing what I saw and heard, I make use of five terms: *project*, *episode*, *discourse*, *exchange* and *turn*. The first came from T himself with his reference to ‘a short local history project’, by which is meant a complete unit of work spread over time with a single overarching theme that marks it out from other curricular activities such as mathematics or physical education. The others I arrived at as I made sense of my data. I do not claim originality for them. Most have been extensively used from the time of Sinclair and Coulthard (1975) at least. For clarity, I introduce and explain them as the need arises.

The project, I saw, was realised through a succession of *episodes*, by which I mean stretches of continuing curricular activity bounded by the fixed points of the academic day, such as the beginning and end of afternoon school, or by timetabling constraints like those engendered by the scheduling of PE space. I was not present for the inaugural episode. From notes made in conversation with T, I saw, nonetheless, how it had begun within the classroom with T and the children talking about their experiences of a hill-top close to the school that would provide

the site for a class visit. My direct observations started with the second episode, a major part of which involved a site visit. For a full account of this episode and what preceded and followed it, I refer the reader to Appendix 1.2.1. This contains my written-up notes on what happened and my transcriptions of exchanges between the children themselves and between them and T. For ease of reference, all the items are numbered sequentially. In what follows, I draw on them selectively.

I begin with T's explanation of the context and purposes of the visit. It was, he said, 'part of a project on growth, with particular reference to the growth of towns in history. The children ... had generated a range of questions relating to the [site] ... he encouraged us all to support the children's speculations wherever we could' (Appendix 1.2.1, Item 3). The tone of the visit was set. I saw that what the children were interested in mattered.

I saw how the episode unfolded as a succession of *discourses*, by which I mean stretches of talk marked out from one another by changes in the number of participants and in the manner of T's involvement in them. For example, once at the site, T gathered the children around and told them, among other things, that '... the city in front of them had not always been there ... Most of what they could now see of the city would have been farm or woodland and the people there in the main Saxons ...' (Appendix 1.2.1, Item 8). This peroration could be seen as a distinct discourse, involving the whole class, with T taking the main speaking part.

It was distinct from the next, in which the children worked individually or in small groups, with a range of conversations taking place concurrently around the site. I could not record all that went on, but believe that the following incident was typical:

Tom, ... talking to Wayne, was drawing the memorial. He had chosen it, he

said, because he “[liked] monuments and it [was] nice to sketch.” Tom and Wayne discussed the positioning of the items in their respective drawings ... Wayne expressed concern about whether he was getting things in the right places. “It doesn’t matter if it’s really in front of it,” said Tom, “that’s what artists do” (Appendix 1.2.1, Item 12).

Briefer stretches of talk like this I regarded as *exchanges*, components of the wider discourse.

A new discourse was initiated:

T once more drew the children around to take them on to the memorial enclosure ... Bit by bit ... they began to attend to the names on the bronze plaques and to ask T and the adults about who they were. In response to a question from David, T said that people weren’t buried under the memorial. Many were buried in places where their families had wanted it ...’ (Appendix 1.2.1, Items 14, 15).

In this, the whole class was involved, but the exchanges were between T and individual children. There was an expectation, however, that all were listening and that, by volunteering questions, each was a potential exchange initiator. The mode of the discourse was different.

Back in classroom, a new discourse began. With the children sitting on the floor around him, T talked about how they could represent their experience, emphasising choice (Appendix 1.2.1, Item 25). I tried to note what was said, an endeavour that exposed my lack of knowledge of the children’s names and the difficulty of recording such exchanges verbatim. What I put together subsequently, an excerpt from which I set out below (with pauses marked by forward slashes), was at most an approximation of what had occurred. The incorporation in it of an amendment subsequently suggested by T buttresses my confidence in its fidelity.

T: Would anyone like to offer any ideas?

Wayne: We could write down things we remember

T: Any ideas about ways we could write? maybe about some of the things you could remember / maybe explain what you saw / what you were thinking about / maybe a story / a poem / any other suggestions?

Child: Pictures

T: Can you suggest different ways?

Selina: Paint

Various: Pencil / crayon

T: You could work from your sketches / any other ways?

Various: Model (various suggestions, too rapid for me to record)
(Appendix 1.2.1, Item 26)

Here was a further variant of whole class discourse. The turns were brief and evenly distributed, but the T was at its centre, eliciting the children's suggestions. By contrast, in the following discourse exchange, the roles were reversed:

Selina: I saw two ships going out / and aeroplanes / I thought they were going to collide / ...

Child: Why were the ships there?

T: Why were the ships there? / so they could be loaded up / Rivermouth isn't an important trading port / it's more to do with the Navy / it used to be a trading port / but not now
(Appendix 1.2.1, Item 27)

In this exchange, one sees the penultimate level of analysis: the speaking *turn*. Three are apparent. Two are by children (one of whom I could not name). The third, longer than the other two, was by T. The final level is *utterance*. T's last turn involves several. They include statements and questions.

A further episode had two main elements. On the one hand, the greater part of the class, supported by the classroom assistant, worked further at their representations. On the other, T worked closely with a small group of children. In this, I observed a further discourse variant that I increasingly saw as a prominent feature of T's

teaching. I present part of it here in order to demonstrate its distinguishing features. Of these, the most obvious involved the number of its participants (T and six children), its form (dialogic) and its length (about 20 minutes). It is also notable for its reflective tone, a feature that I saw to be common to a number of small group discourses in which T was involved.

T. What I know about the Battle of Hastings is / the Normans met Harold's army outside a place called Battle / Harold's army had just rushed back from Scotland / they were very tired / even then they nearly won it / but he made a mistake

Tom What would the Normans have done when they won?

Selina Cheer

T What more would they have done?

Laura Make everyone agree with you

Tom You could give things to make them

T You mean give presents and bribes? / it might work / how long do you think it would take them to get control?

Child About five years

Alice You could have a meeting and talk about it

T I see / you could have a meeting and talk about it / does that sort of thing still go on?

(Appendix 1.2.2, Item 4)

Events like these provided me with sufficient data to establish an overall picture of the salient features of T's approach. This may be summed up using the terms already introduced. It was episodic in structure. Each episode was made up of a number of discourses, the course and nature of which depended on choices open to T. That is to say, they reflected his ability to move from whole class to small group or individual activity, to engage with the children in a sustained or an intermittent manner, to switch between monologue and more reciprocal interactions, and to set up situations which involved talk between the children in which he took no part or, alternatively, he was closely involved. Except for one

item, they closely matched the variants commonly seen in traditional classrooms:

1. Teacher talking to silent audience, requiring everyone's attention;
2. Teacher talking to one pupil, but assuming everyone else is taking notice;
3. Pupil talking to teacher, with rest of class as audience;
4. Teacher talking to one or more pupils when others are not expected to listen;
5. Pupils discussing among themselves with teacher as chairman;
6. Pupils discussing among themselves, with the teacher absent.

Edwards and Furlong (1981, p. 15; summarised)

The fifth item provided the exception: I did not see T chairing discussions between pupils. This apart, I felt that I could regard the congruence between what I saw and the picture painted by Edwards and Furlong as evidence that what was happening in T's classroom was by no means atypical, a point that bears importantly on any claims I might make to its wider significance.

5.3.4 The location of formative activity and its relationship to learning

Identifying the typical location of formative activity and relating it to learning were two of my primary aims for this pilot phase. As noted in 5.1, I had set out expecting that such activity would relate to children's writing in progress. I imagined, further, that it would be manifested in exchanges between T and individual pupils. I anticipated that I would see a number of these and that, by recording them, I would be able to see how T judged what he saw and turned it to the advantage of the children's learning. My perception of the project as a sequence of activities that could be regarded at a number of levels, offered a framework for testing out my expectations. I could examine the discourses, looking for signs of anything that appeared to involve formative activity as I then understood it.

In the transcripts, I found few such signs. The following example is taken from a discourse in which groups of children were invited to present their representations of the site visit to the rest of the class:

Tom we're not happy about the ending

T I like the horses and riders coming in / sounds threatening / ominous / as it would have been in Norman times

Tom we forgot the fuses

T do you want to play it again?

(Appendix 1.2.1, Item 31)

I do not claim that these were the only occurrences of explicit judgment. As noted, I was not present for all its episodes, nor, even when I was in attendance, was I able to record everything that happened. I am aware, too, of the devices teachers employ that may be interpreted by pupils in evaluative terms, even though no judgment is made explicit. I can say, however, that the explicit evaluation by T of the children's contributions seemed to be rare. More importantly, I found no evidence of it where I had most anticipated that it would occur, namely in exchanges in which T deliberately and overtly approached individual children with appraisal in mind. The instances I recorded involved the activities of small groups of children. They were enacted with an expectation that the rest of the class was listening, rather than as transactions between T and individuals or groups apart from the rest of the children. All, moreover, were brief, with exchanges of no more than four or five turns, including those by T himself. In short, my expectations of where I would find assessment was being used for formative purposes turned out to be wrong.

This puzzled me, for, while I had failed to pin-point the location of formative assessment activity, I was fairly certain that, over the course of the project, the children were learning. My evidence for this was based on two things. First, I

analysed the transcripts for their content, identifying initially particular utterances according to their topic and then categorising them under general headings. Second, I compared the children's later utterances with their earlier ones.

The key question for the first part of this analysis was straightforward: what, in general terms, was being talked (or written, or drawn) about? For example, the following featured in the course of a discussion between a group of the children and T about a reversal in the circumstances of Robin Hood and the Sheriff of Nottingham:

- 4.65 T Did that change anything?
- 4.66 Laura The Sheriff got poor and Robin Hood got rich
- 4.67 Tom They seem to have swapped places
- 4.68 Laura The Sheriff learned his lesson / he had to work / he only got two shillings an hour for his work / so he could see what it was like to be poor
- 4.69 Tom Do you think Robin Hood was good or bad?
- 4.70 Laura Good in some ways / I expect he wanted money for the poor / whenever he was in battle / he wanted the poor to be for him

(Appendix 1.2.3, Item 9)

I characterised utterance 4.68 initially as '*evaluation of consequences - moral - just deserts*', 4.69 as '*invitation to consider actors as moral beings*' and 4.70 as '*actor's intentions and motivation taken into account in judgment of morality of action*'. I then subsumed all three (and others like them) under the more general heading of '*morality*'. The reliability of these interpretations was then tested by supplying, first T himself, and then a further teacher, with my typed 'transcripts', but without knowledge of my interpretation. I also provided the second teacher with the definition of the humanities I had given to T. I invited both to categorise excerpts from the transcripts accordingly. T categorised 4.68 as '*justice*' and 4.69 and 4.70 as '*ethics*'. The second teacher categorised 4.68 and 4.69 as '*morality*'

(derived from *'learning your lesson'*) and 4.70 as *'values'* (from subject's *'honourable and less honourable intentions'*).

The amount of data on this was small. I weigh it cautiously. Nonetheless, over the whole transcript, the match between the teachers' categorisations and mine was consistent enough for me to have confidence in the reliability of what I did. This allowed me to proceed to the next stage of this analysis, the purpose of which was to compare the objects of joint attention in the earliest episode I recorded with those occurring later.

Three things emerged. One was the appearance in the later episode of utterances by the children subsumed under categories evident in the earlier work only in the voice of the teacher. For example, it contained instances of children speaking of intentionality, as in Lana's account of why the Scots played the bagpipes for the English invaders: 'they'd rather do that than be killed'. Second, other categories having few entries in the earlier episode had more later. For example, under 'consciousness' there was one utterance initially (Tim's written line: 'buildings fall [the inhabitants] think it's a nightmare'). The later episode had five. Third, these shifts were in areas central to the humanities, such as beliefs, morality, the effect of human action and the intentionality that lies behind it. I took them as evidence that the children learned.

There was nothing in my data, however, that allowed me to pinpoint where that learning occurred. At most, I could say where I first recorded utterances of particular kinds. I could not know whether I had missed others. More importantly, I could not assume that the processes involved in learning were contiguous with what I saw. They might equally have been linked to the children's earlier exposure to T's references to beliefs, morality and other concepts central to the humanities or to their inner mulling over of such ideas elsewhere. The problem, I began to see, was not merely the absence of data, but the lack of a methodology that would

enable me to address the issues involved.

Nonetheless, I continued to think that I had grounds for believing that learning had occurred. That it appeared to have happened without overt signs of the activity commonly associated with formative assessment left me with two problems. First, without such signs, there appeared to be no way in which I could relate formative assessment activity to the children's learning, even if I could identify where the latter occurred. Second, if such assessment was not occurring where I had expected it, was it not occurring at all or was it occurring somewhere else?

I had other data that allowed me to look elsewhere. T commented in writing on the following excerpt, for example:

1. T What I know about the Battle of Hastings is / the Normans met Harold's army outside a place called Battle / Harold's army had just rushed back from Scotland / they were very tired / even then they nearly won it / but he made a mistake
2. Tom What would the Normans have done when they won?
3. Selina Cheer
4. T What more would they have done?
5. Laura Make everyone agree with you
6. Tom You could give things to make them
7. T You mean give presents and bribes? / it might work / how long do you think it would take them to get control?
8. Child About five years
9. Alice: You could have a meeting and talk about it
10. T I see / you could have a meeting and talk about it / does that sort of thing still go on?

(Appendix 1.2.2, Item 4)

About Laura's comment (5, above), he wrote that it 'showed that the children did

have some ideas as to what an invader might do to consolidate an invasion'. Comments like Tom's and Alice's (6 and 9) suggested '... that the children already possess some kind of embryonic framework through which they are making sense of 'invasion' in its widest sense. Embryonic notions of 'power' and 'control', 'negotiation' etc'' (Appendix 1.3.1). Then he wrote that:

what might help the children ... to move forward would be the opportunity to apply such embryonic general principles to a specific instance, i.e., have a look at what the Normans actually did do after the invasion and then look at this in the light of some of the ideas the children had. e.g., in relation to Tom's idea about bribery we could ask whether the Normans did indeed indulge in this practice and how did they do it? (Appendix 1.3.1)

In clauses like 'the children did have some ideas as to ...' and 'the children already possess some kind of embryonic framework', T noted what the pupils understood or were coming to understand. In relating it to the goals of developing notions of power, control and negotiation, he implicitly placed a value on their understanding. By indicating that applying such embryonic general principles to a specific instance might help them to advance, he linked judgment to further teaching. In short, he was thinking formatively.

I noted three things. These comments were complex. They related mainly to spoken discourse. They involved T and groups of children or the whole class. From them, it was clear that talk needed to be my focus.

The analysis was limited. Nonetheless, these assessment-related comments could be tentatively classified under three broad headings, *ascertainment*, *evaluative* and *self-regarding*. By *ascertainment* I meant comments on the children that appeared to be non-judgmental. These were of two kinds: *accounts* of children's actions, eg., 'the invitation was not taken up by the children'; and *interpretations*

of children's actions, eg., 'these comments suggest that the children already possess some kind of embryonic framework through which they are making sense of 'invasion''. What I saw as *evaluative* references related the children's schemas to public versions (eg., '[Laura] appears at the threshold of powerful ideas about Negotiation, Treaty ...'). By *self-regarding* I meant comments that embodied awareness of T's consciousness, such as, 'I had heard this often and I was interested in finding out where this perception came from' (all Appendix 1.3.1).

In hindsight, I recognised that T's comments involved thinking on, rather than in, action. Moreover, I became aware of weaknesses in my categorisation of his utterances. For example, I came to see how an assertion like 'these comments suggest that the children already possess some kind of embryonic framework through which they are making sense of 'invasion'' could be inherently evaluative. The fault was mine: I had not evolved sufficiently rigorous criteria for distinguishing between my categories. With regard to the development of my own thinking, what matters is the impact they had on my belief about where I needed to look for formative assessment. I could not confine my attention to the discrete assessment encounters I had anticipated. Rather, I needed to look at a wider arena, to which extended talk was essential. No lesson from the pilot phase was more important to me than this.

5.3.5 T's educational philosophy

By 'educational philosophy', I mean what is 'more or less implicitly contained in the common-sense assumptions, values and beliefs underlying [teachers'] everyday practical activities' (Carr, 1995, p. 53). My concern for it stems from my original intention to study the formative assessment practice of two teachers working with different age groups. Anticipating that similarities and differences between them might involve more than the age of the children in their care, I had sought the

participation of two teachers who had entered the profession at very different times (see 5.1).

As related earlier, my aspiration to incorporate a comparative element in the study was thwarted. Nonetheless, I have maintained a concern for the remaining participant's underlying philosophy throughout. I saw this initially in terms of the imperative to be clear about what his work was typical of, and surmised that typicality could be viewed on many levels. As I show in 8.4.5, however, one of the outcomes of this study is the proposal that, in T's case at least, formative assessment is ultimately to be understood by reference to his philosophy of education.

I do not pretend that I anticipated this outcome, nor did I make special arrangements to collect data for the original issue. Instead, I anticipated that information gathered for my more immediate purposes would also meet the wider need. This was of two kinds: the records of my observations and T's written and spoken commentaries. What follows is based on such data. Later it will be seen that it is sufficient for the broader issue as well as my initial purpose.

Thus, in my field observations, I recorded the importance T attached to the 'generation of ... questions by the children themselves' and how this '... was in line with his emphasis on encouraging investigations that were child-initiated.' (Appendix 1.2.1, Item 4). I saw how, in preparation for the site visit, he '... sought people's help in providing ... answers ...' and how he '.... encouraged us all to support the children's speculations wherever we could' (Appendix 1.2.1, Item 3). Such observations pointed, I thought, to T's location within what has variously been called the 'developmental', 'progressive', 'liberal progressive' or 'liberal romantic' tradition in primary education, one that 'celebrates self-expression, individual autonomy, first-hand experience, discovery learning and personal growth' (Richards, 1988, p. 11) and which sees the teacher as a 'facilitator,

enabling pupils to learn from personal experience' (Carr, op. cit., p. 55).

The broad thrust of this inference was confirmed by T's spoken and written comments. For example, in commenting on my observation of how often he emphasised to the children that they were free to choose what to focus on and how to represent it, he wrote:

It seems to me that to invite children to respond to their experience in the hope that this will help them to make sense of it and then to dictate how they should do this will result, in all probability, in the experience being in some way taken away from them. Without their personal commitment very little will happen (Appendix 1.3.2, Item 5).

Moreover, what T said was echoed in what he encouraged the children to do and in the responses they made. My notes show how

... Laura began to sketch the quarry which could be seen stretching across the view in the middle distance. Responding to my question about her focus, she said that she had chosen it because she had been there and had seen a lot of wild-life in it, including, she said, a wild-cat ... (Appendix 1.2.1, Item 11).

I saw, however, that this licence did not preclude T telling the children things. Thus, on the site visit, before setting them to work, he had gathered them round and told them that:

... the city in front of them had not always been there. A thousand years ago ... what they could now see ... would have been farm or woodland and the people there in the main Saxons ... Rivermouth itself was then just a tiny village, down by the gasworks which the children could see beyond the water ...' (Appendix 1.2.1, Item 8).

This excerpt represents but a fraction of what T related to these six year old children. I saw that the commitment he made to such telling could not be fully squared with my typifying his approach in terms of progressivism alone. Here were elements of what Richards (op. cit., p. 11: emphases added) sees as 'liberal pragmatism', an approach characterised by, among other things, a belief that '...

children learn through both first-hand *and* second-hand experiences' and a readiness to employ 'a *variety* of teaching and learning styles'. Other elements, however, such as 'a concern for planning at school and local authority level ... and for systematic progression and continuity between and within schools' (ibid.) were not in evidence, either in these passages or in anything noted subsequently.

I remain cautious about this interpretation. My evidence was limited. Such conceptions, moreover, relate to general types. In individuals, elements of more than one may coexist. Thus I see nothing contradictory in regarding T's approach as steeped in progressivism, but with added elements of liberal pragmatism. I should add that I use terms like 'progressivism' and 'pragmatism' solely for classificatory purposes, not to convey approval (or disapproval).

5.4 LESSONS FROM PILOT PHASE FOR MAIN PHASE OF STUDY

In 5.3.4, I indicate how I ascertained that discrete assessment encounters in T's work were rare. My hope that I could shape a detailed account of '... how teachers use routine observation and questioning of pupils in assessment, how pupils respond, and how particular assessment 'incidents' or 'events' are actually accomplished through teacher-pupil interaction' (Torrance, 1993, p. 341) was thwarted. Since T assured me that what I had seen was typical of his approach, I could not expect to find anything significantly different in the main phase. To find formative assessment activity in his practice, I needed to look elsewhere.

I saw in the first phase how much talk there was between T and his pupils. I saw, too, how the 'transcripts' of them prompted commentary, embedded in which were observations of an evaluative, or at least interpretive, nature. In this way, it became clear that I had to focus on these discourses. My attention, however, could not be random, for I had also seen how they involved groups that varied in size, in

duration and in mode. What mattered was that I should seek T's commentary on this discourse activity.

This shift of focus had implications for my ways of working. Most obviously, it exposed the weakness of my data collection. My approach to recording speech fell short of what was required. T recognised the problem. 'The first thing that is obvious when I look at this transcript,' he wrote, 'is that the richness of the conversation is watered down because it is not possible to record from written notes all that is going on' (Appendix 1.3.1, Item 4).

More was involved than the inadequacy of my shorthand the loss of the richness of the transactions. I was offeringw T for comment my reconstruction of what had happened. He could confirm its broad fidelity to the original, but neither of us could tell how much had been lost or whether distortions had crept in unnoticed. I was asking T to comment on a version of the events, not the events themselves. Audio recording of some kind was essential. I have indicated why I rejected radio microphones. T's comment, however, gave me leave to suggest that a video camera and cable microphone might be used for the second phase. To this, he readily agreed.

Within limits (for even a video camera can produce only a version of events), electronic recording could allow proceedings to be captured more fully than hitherto. It would, moreover, enable me to offer T material undistorted by my perceptions for his comment. This was important, for his comments were central to the second phase. Meanwhile, I identified two further limitations to my approach that required attention .

First, the primary medium I had offered to T for responding to the 'transcripts' was writing. This, I reasoned, had the advantage of enabling him to comment at his leisure, away from the press of school life and without the possibly distorting

exposure of my presence. What it produced was helpful, but brief. His spoken comments were much more extensive. Future commentaries needed to be oral.

The second involved my data analysis. In particular, I began to see that my approach was impressionistic rather than systematic. I needed to be able to deal with all the data in a manner that avoided the weaknesses in categorisation noted in 5.3.3. In Chapter 6, I show how this was done.

Meanwhile, I came to see how, within the time available for my enquiry, there was a trade-off between breadth and depth. In the first phase, I had undertaken more than I could manage. My methodology was inadequate for my purpose. Greater analytical rigour was essential. That, however, could not be achieved without restricting my focus. Some of my initial aspirations had to be abandoned. Having seen that accounting for the course of the children's learning was problem enough even when unrelated to T's formative activity, I set that goal aside. Meanwhile, my growing awareness of the complexity and significance of T's interpretive activity within interaction, coupled with the realisation that little about this that bore on formative assessment seemed to be available in the literature, led me to see this as my proper focus.

CHAPTER 6

DATA COLLECTION AND ANALYSIS, PHASE 2: PART 1

6.1 RELATIONSHIP TO PILOT PHASE

The second, main, phase of this study bore many similarities to the first. It took place in the same setting (see 5.2). It involved the work of the same teacher, again with a class of Top Infants (Key Stage 1, Year 2) children. It focused on a humanities project, with ‘humanities’ and ‘project’ defined as in 5.1 and 5.3.3 respectively. As in the pilot, the project was part of the normal curriculum, with T requested to avoid conscious changes to his practice for the sake of the research.

There were also differences. Some had no bearing on the study. Undertaken in a new school year, the main phase involved a new class, with 32 children in it, rather than the 30 of the pilot. The topic of the project was different (its content and course are introduced briefly in 6.4.1, then in greater detail in Chapter 7). Two others, shaped by the outcomes of the pilot phase, were substantial. My purposes were narrower and more sharply focused. My data collection and analysis procedures were more rigorous. Both are dealt with in what follows.

6.2 PHASE 2: INVESTIGATIVE PURPOSES

The broad purpose of the first phase was carried forward to the second: to build an understanding of the nature of any formative assessment practice that was integral to T’s work in the humanities. It had, however, been refined. I had seen that, if T made formative judgments anywhere, it was not through discrete engagements with the children as I had initially anticipated, but rather as part and parcel of the larger spoken discourse of the classroom (see 5.3.4). In short, such practice

appeared to be embedded within continuous classroom interaction. How assessments were made within this interaction now needed to be understood.

The more particular purposes were shaped by my encounter with Clark and Peterson's review (1986, p. 268ff.) of six investigations of teachers' interactive thinking. Noting the high proportion (39 to 50%) reported as being concerned with the learner and to involve a range of cognitive processes, I heeded the suggestion that further advances might be made by relating such processes to their content. I anticipated that I could build on their lead in two ways. The first was by considering how far, if at all, such cognitive processes involved assessment. The second was by considering whether there was any relationship between the different kinds of discourse I had noted in T's work and the assessments - if any - that he made. Neither, so far as I had been able to discover, had been investigated before.

Of the other concerns that shaped the pilot phase, I elected not to pursue my attempt to determine where learning took place, a quest I had originally embarked on in the expectation that I would be able to relate it to T's assessment activity. There were two reasons for this, both methodological. First, I realised that I had no means of distinguishing, within classroom discourse, between the processes and the outcomes of learning. Such means, I believed, might be evolved, but the problems involved could only divert me from my primary purpose. Second, my task was challenge enough in its own right.

6.3 PHASE 2: DATA COLLECTION AND ANALYSIS STRATEGY

Although its focus had sharpened, I saw no reason to change the investigation's strategy. This rested on four assumptions. First, T's formative assessment activity appeared to be integral to his thinking in interaction. Second, an understanding of

T's thinking had to be based on his own commentaries on these interactions. Third, eliciting commentaries sufficiently rich for my purposes was thus central to my task. Fourth, the stimulated recall technique would elicit these commentaries. Its potential was not, I believed, undermined by the particular stance I had adopted towards it (see 4.5). On the contrary, regarding teachers' interactive utterances as thinking in action and their responses to the tapes as thinking on action, rather than as thinking recalled, placed the approach on a sounder philosophical footing.

My strategy therefore involved collecting two levels of data: recordings of classroom events, made by me as a non-participant observer, with particular reference to the spoken interactions between T and his pupils; and recordings of T's thinking on these interactions, elicited by the technique conventionally associated with stimulated recall. This second level would provide the primary basis for my attempt to construct an understanding of T's formative assessment practice.

My principal means of making the data collection and analysis for this second phase more rigorous were two. The first involved the initial level of data collection, i.e., the accounts of the classroom interactions. I wanted records that would enable me to elicit as much as possible of T's thinking on the action involved and to distinguish systematically between the kinds of discourse to which it was related. In the pilot I had attempted to do this by hand and verbatim, a technique I found inadequate. For the later phase, I used a video camera and a static audio microphone. I acknowledge that even this approach had its shortcomings. A video camera points at something and misses others. Its presence may influence what transpires. I minimised these dangers by using a tripod-mounted camera, placed with the microphone to maximise coverage, and by keeping both in their positions throughout, so that they became part of the furniture. Nonetheless, I saw the approach to have three advantages. Tapes could be revisited at will and, if needed, repeatedly. The accuracy of my transcriptions of the dialogues could be checked.

Most importantly, it made it less likely that I would offer T my version of the events for commentary, rather than the events themselves.

Second, my data-handling had to be more systematic and discriminating. With regard to the interactions, this involved the evolution of a means of distinguishing between the different types of discourse I had seen. How I did this is shown in 6.4. As for the thinking on action data, I took five key measures. First, all the data, once typed up, were passed to T for his verification and, where necessary, amendment in the light of his comments. Second, all the data were subjected to analysis, and in the same way. Third, since categorisation was central to the process, I gave particular attention to the articulation of the criteria involved. Fourth, I passed a selection of the categorised material to a colleague for her independent judgment, taking due note of discrepancies between her conclusions and mine. Fifth, the criteria were refined in this interaction. In this way, I was able to arrive at a range of categories and categorised data that was more robust than would have been possible had I worked entirely alone.

An account of how all this was done follows. Full transcripts of the discourses, together with records of T's subsequent thinking on the interaction and of the way in which it was analysed are provided in the Appendices. Immediately below is an overview of the project on which the phase was based. It is intended to give an initial indication of what transpired so that the descriptions that follow may be contextualised. A description of the discourses, drawing on some of the analysed data, is given in Chapter 7.

6.4 PHASE 2: A HUMANITIES PROJECT

6.4.1 Overview and approach to transcription of discourses

In what follows, I use the terms ‘project’, ‘episode’, ‘discourse’, ‘exchange’, ‘turn’ and ‘utterance’ as defined in 5.3.3.

The project on which the second phase of this study was based focused on Hindu culture. Other than that there was no outside visit, T’s approach, by which I mean the way in which he structured its course, arranged the classroom and worked with the children, matched that for the first. That is to say, it evolved in a series of episodes, the duration and timing of which were determined by the constraints of the school’s timetable:

1. The introduction by T, with the aid of a photo album, of a sub-group of the class to the subject matter, while the rest of the class completed other work;
2. The production by the sub-group of art work arising from the first episode, with the rest of the class being drawn in, again with the use of the photo album, and the construction by T, with a further group of children, of a model of a shrine to Saraswati, the Hindu Goddess of Wisdom.
3. The presentation by T to the whole class, by simulation and explanation, of a Hindu religious ceremony;
4. The exploration by a sub-group, with T’s aid, of a book about the Saraswati ceremony, while the rest of the class painted and modelled what they had seen in the previous episode;
5. Further modelling and art work by the class as a whole, while T engaged in discussion with a sub-group;
6. As 5, but with T engaged in discussion with a different sub-group.

Each episode involved a number of discourses. Some, primarily those which opened and closed each episode, were short. They have been omitted from the above summary. Between them were prolonged spells of activity. Some involved a single, continuous discourse, as in 3 (above), with T working with the class as a whole. As in 1 (above), others involved two or more concurrent discourses. In these, T worked with sub-groups of the class, while the rest of the children worked independently, usually with the support of the classroom assistant.

My interest was in the discourses in which T was directly involved. Five, indicated by the sections underlined above, were video recorded, then transcribed. The transcriptions indicate the individual utterances, numbered sequentially, and the speakers. Pauses and hesitations are indicated by oblique slashes and additional information by italicised inserts. The example below illustrates their form:

P40 T they've got very long hair and they look sort of / uh

P41 Mat womanish

P42 T yes they do look womanish / yes you're quite right / they all look
womanish / yes / they look / feminine

P43 Jo *(pointing to wall picture)* one of those could be a woman in
those pictures

(from Appendix 2.2.1)

All transcripts were subsequently sent to T for checking, with particular regard to the identification of the speakers, and amended in the light of his observations.

6.4.2 Distinctions between discourse types

I saw from the pilot phase that the structure of T's work could be described in terms of descending levels of 'project', 'episode', 'discourse', 'exchange', 'turn' and 'utterance', and that, within this structure, a range of discourse types occurred

that closely matched variants noted in the literature (see 5.3.3). An impressionistic examination of the second phase discourses suggested that each variant appeared to encompass differences. For example, what might be regarded as examples of the fourth variant, ‘teacher talking to one or more pupils when others are not expected to listen’ (Edwards and Furlong, 1978, p. 15), encompassed discourses apparently shaped both by the concerns both T and the pupils.

Anticipating that they might involve different demands on T, I wanted to ensure that such differences were substantial. For this, I saw Edwards and Furlong’s categories as insufficiently discriminating. I sought to make finer distinctions, while keeping my analytical framework simple. I did this by attending to four measures for each discourse. Each could be expressed numerically: length, expressed in minutes; the distribution of speaking turns between T and the children; the number of turns by T of more than 100, 200 and 300 words; and the numbers and proportions of utterances by T and the children that involved overt questions. These measures could be related to the different functions the discourses played in the development of the project, as revealed by T’s commentaries.

The measures were arrived at by inspection of the transcripts, rather than *a priori*. In the discourse descriptions in 7.2, I use them where appropriate.

6.4.3 T’s aspirations for children

I anticipated that an understanding of formative assessment in T’s practice would depend in part on an awareness of his aspirations for the children. Apart from requesting a broad outline of his expectations at the project’s outset, however, I took no separate steps to ascertain what this was. The omission was deliberate. I had seen from the pilot how much of his commentary involved what he was trying to do. This commentary, I anticipated, would afford adequate insights into his

purposes. Moreover, I hoped that, by working in this way, T's actions would not be confined or otherwise distorted by anything conveyed to me prior to each episode. This, I believed, was both ethically proper and essential to ensure that what happened was not swayed by my research activity.

Indications of T's aspirations, drawn from his commentaries, are given in 8.4.5.4.

6.5 ELICITING T'S COMMENTARIES ON DISCOURSES

The video recordings of the discourses underlined in 6.4.1 were used to elicit T's commentaries on the interactions involved. My approach throughout was the same. At the earliest mutually suitable time after each was made, we sat together to replay the recordings on a television monitor. T controlled their progress. I invited him to stop the tape wherever he wanted to comment. This was deliberately open-ended. It left him free to comment on whatever he wanted. I noted the stopping points on the digital counter. Thus, when I had completed the transcripts, I was able to relate them to the progress of the discourses. I did not assume that T's comments were triggered by what immediately preceded these pauses. On the contrary, from my own experience of watching tapes of interaction, I assumed that such halts might follow what had prompted them in an indeterminate manner. The most that I could expect was that I had captured T's comments in the right order and that they could be related to their causes, first roughly, with the counter, and then, if needed, more accurately by reference to their content.

Save for one discourse, I noted T's comments by hand, so far as I could verbatim. Where I could not catch them verbatim, I summarised. I used this approach in the belief that it was less intimidating to T than audio recording. Recognising this a potential source of distortion, I passed typed versions of my accounts to T for his verification, amending them as requested. His calls for changes were few, but,

without exception, acted on. For the examination of the fifth discourse, by which time T had become very relaxed - but not casual - about the task, I audio recorded his comments. When later I analysed his comments recorded by both methods, I could see no difference in their content, although, unsurprisingly, the spoken comments were more extensive. Full versions of these comments, as recorded by both means, are set out in Appendix 2.3.

My approach was thus akin to stimulated recall. It should be noted, however, that I did not regard what was elicited as thinking recalled. My aim was not to stimulate recollection. As argued earlier, I believed that this was neither feasible nor necessary. On the contrary, I wanted T's commentary on the interaction. My technique might thus better be labelled as 'stimulated commentary'.

6.6 ANALYSIS OF T'S COMMENTARIES

6.6.1 Units of meaning

T's commentaries are central to this study. I assumed that I was most likely to arrive at understanding by looking at them in fine detail. I treated all my data comprehensively, by which I mean that nothing was excluded, and systematically, in that everything was examined in the same way.

I first broke down each commentary into units of meaning. This was problematic. Anything from a single word to a whole utterance could be regarded as a unit. For my purposes, the former was too small and the latter too large. This was not an arbitrary judgment. I wanted to consider two basic things: what T spoke about and what he said about it: in short, topic and comment. My approach is shown in the example below, here presented in its raw state. The digits indicate the time in

minutes and seconds at which he stopped the tape to make this comment:

4.06 They're already noticing things in the pictures. Here Lana's seeing every picture as an animal. I respond simply because they've seen something important. Indian pictures are full of symbolism, but I've no idea where things will go.

(from Appendix 2.2.1)

This I split into units of meaning, as defined above, using slashes to show where the boundaries lay:

4.06 / They're already noticing things in the pictures./ Here Lana's seeing every picture as an animal. / I respond / simply because they've seen something important. / Indian pictures are full of symbolism, / but I've no idea where things will go. /

Each '/' marked the beginning of a new chunk of sense, or meaning, or the end of an old one. These often coincided with sentence boundaries, but not always. Some separated smaller units. This was not an arbitrary matter. It reflected my concern for the complexity T's comments. Sometimes smaller units were embedded within larger ones, as in:

4.06 / I respond / simply because they've seen something important. /

Grammatically, this involved main and subordinate clauses. I wanted to be able to consider both the parts and the whole. To overcome the difficulties such 'subordinated' units posed, I used </ and /> as composite brackets to delineate the total unit:

4.06 </ I respond / simply because they've seen something important. />
Then, since I wanted to work equally on both, I employed dots to distinguish the subordinate unit from the main one:

4.06 </ I respond .../ simply because they've seen something important. /... />

In this way, I could show the main and the subordinate clauses in their own right, while still preserving their relationship to one another. The whole utterance could be depicted thus:

4.06 / They're already noticing things in the pictures./ Here Lana's seeing every picture as an animal. / </ I respond .../ simply because they've seen something important. /... /> / Indian pictures are full of symbolism, / but I've no idea where things will go. /

Each of T's commentaries was rendered into units of meaning in this way.

6.6.2 Categorisation of units of meaning

6.6.2.1 Overview

The process of constructing understanding was undertaken step by step, beginning with the whole body of data and then focusing on material bearing on the children, and therefore potentially on formative assessment. Each new level involved increasingly fine distinctions between the units of meaning. The outcome was the system represented in Fig. 2 (next page and Appendix 2.1.1)

The process was not linear. On the contrary, it involved a succession of metamorphoses as I arranged and rearranged the subcategories within and between the levels. Fig. 2 represents its final form. In what follows, I relate what I say to this end position. Where relevant, however, I introduce aspects of the

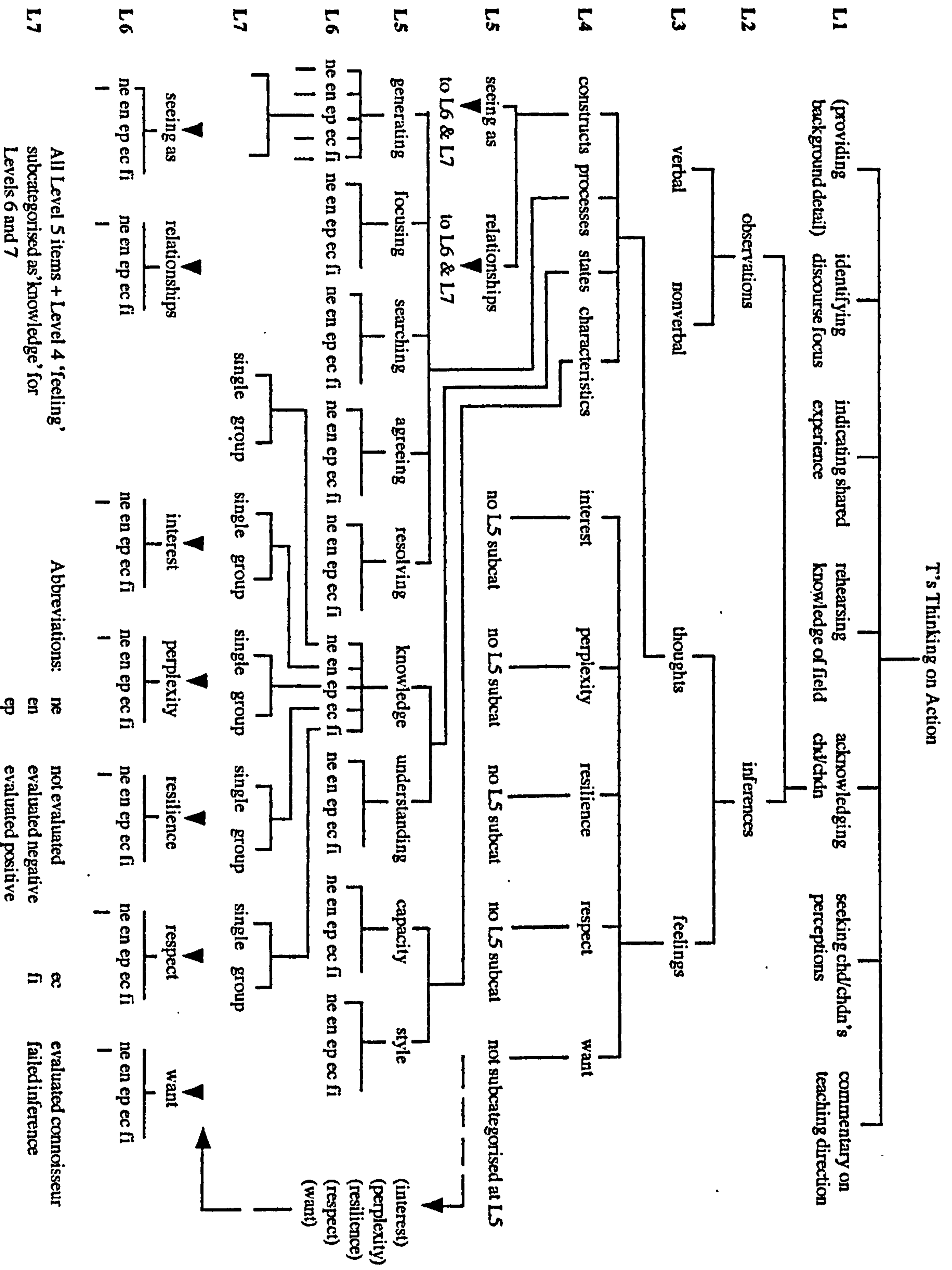


Fig. 2 Categorisation of units of meaning

process as they occurred, giving the reasons for revisions made. My account of both the outcome and the revisions is set out in the subsections of 6.6.2. Details of Fig. 2 are introduced as they arise.

In all this, there was a philosophical and methodological problem. I could not and did not assume that the patterns, or categories, existed ‘out there’, waiting to be ‘discovered’. With a view to my own purposes, I had to impose them on the data, tentatively at first, but with increasing commitment as I became convinced of their substance. Someone else might have envisaged different categories. On the other hand, if another person, suitably primed, could see what I had seen, I could infer that my categories were substantial.

These problems of interpretive enquiry are considered in Chapter 4. Here it is enough to indicate the role of my colleague acting as interjudge in the process of categorisation. It involved independently checking a proportion of the work I did and acting as constructive critic in the evolution of the category system itself. In what follows, I draw on some of our exchanges. In this way, I hope to illuminate both the process of categorisation and the interjudge’s contribution.

6.6.2.2 Level 1: Categorisation of *Thinking on Action* units

The first level of categorisation involved all of T’s comments, rendered as units of meaning. In what follows, I draw on material prepared for the interjudge to show both how the categorisation was done and how my interjudge colleague was involved.

It’s at this point that the hard graft begins. It’s a matter of trying to impose plausible patterns on the units of meaning. I keep asking myself whether separate units have anything in common with one another. Bit by bit, similarities strike me. For example, in the above text, ‘They’re already noticing things in the pictures’ and ‘they’ve seen something important’ are

like one another in that, in both cases, T is making a comment about the children. 'I respond simply because ...', however, is different. Here T is saying something about himself. More particularly, he's saying something about his teaching.

I notice lots of units like these in what T does. The first kind, where he says something about the children, I label 'acknowledging child/children' ('child' or 'children' since it might be either). The second kind, where T says something about what he is doing, I label as 'commentary on teaching'. To make them stand out, I add labels to the text like this:

/ They're already noticing things in the pictures. acknowledging chd-chdn /

/ I've no idea where things will go. commentary on teaching /

'These two themes, or patterns, *acknowledging the children* and *commenting on teaching*, are, I think, apparent over and over again in what T says. But they are not the only things which seem to recur. At this stage, for the present purposes of my investigation, a number of others seem to be there. In all ... I see seven which interest me:

*providing background detail
identifying discourse focus
rehearsing knowledge of field
indicating shared experience
seeking chd-chdn's perception
acknowledging chd-chdn
commentary on teaching*

Two I have already mentioned. The others I will try to explain later, principally by illustration. Together, they make up the seven ways in which I initially categorise the units of meaning which make up the totality of what T says. Even in the short piece I have been using as an example [seen in 6.6.1], you can see some of them:

4.06 */ They're already noticing things in the pictures. acknowledging chd-chdn /* Here Lana's seeing every picture as an animal. *acknowledging chd-chdn / </ I respond simply .../ because they've seen something important. acknowledging chd-chdn /...commentary on teaching /> /* Indian pictures are full of symbolism *rehearsing knowledge of field /*, but I've no idea where things will go. *commentary on teaching /*

(From Interjudge Guide 1: see Appendix 2.1.2)

To test my categorisation, I invited my colleague to retrace part of the course I had taken. I provided a record of T's comments on one of the discourses, categorised as in the example above. I accompanied this with a list of the categories I employed,

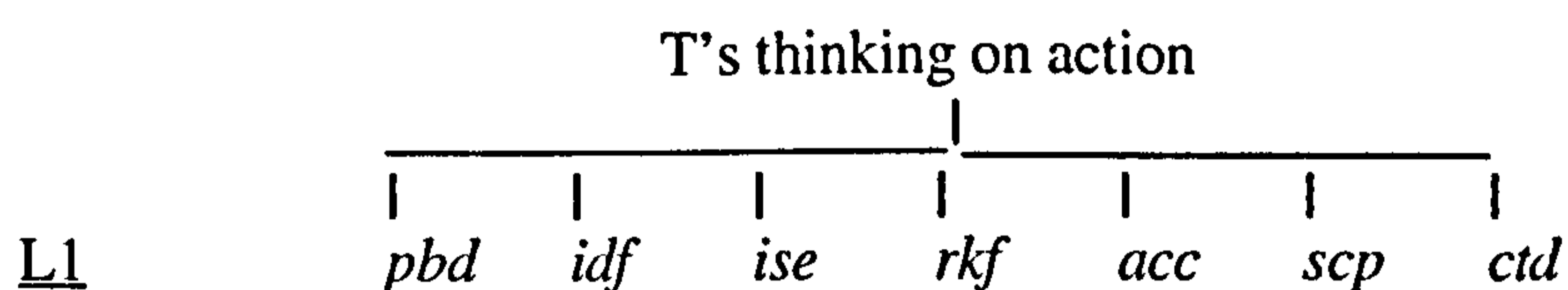
together with detailed indications of the criteria for distinguishing between them. At two points in this record, I invited her to supply the categorisations, using the criteria I had supplied, for ten successive units from which I had omitted my own. The relevant section from this guidance material appears in Appendix 2.1.2 (Interjudge Guide 1: 'What I am asking you to do').

The outcome was an 80% agreement on the omitted categorisations. Believing this to be insufficient, I discussed our differences with my colleague. Two problems emerged. One related to the indication of embedded units of meaning (see 6.6.1). This had been difficult to grasp. To try to overcome this, I produced further guide notes (see Appendix 2.1.3)). The other involved the category *commentary on teaching*. This, she pointed out, was insufficiently distinct from other categories, some of which themselves embraced activities which could be regarded as elements of teaching. In discussion, I realised that her conception of the category was more robust than mine. I resolved the problem by amending both the title of the category (to *commentary on teaching direction*) and the criteria by which it could be distinguished. This, it seemed to me, was a telling example of the dynamic part played by interjudgment in the categorisation process. Further, it showed that, provided the task was undertaken rigorously and critically, a potential flaw in the technique (see 4.7) could be obviated.

Using the revised categories and criteria, I then invited my colleague to examine a further batch of twenty uncategorised units, this time relating to a different discourse. Agreement reached 95%. This I judged sufficient to warrant the reliability, and therefore substance, of the categories. I subsequently amended the categorisation of all the units of meaning which made up T's commentaries in the light of the revised scheme. From this activity, I finalised the scheme for this first level of the categorisation represented in Fig. 3 (below).

Fig. 3 Categorisation: Level 1: All units of meaning

providing background detail	<i>pbd</i>
identifying discourse focus	<i>idf</i>
rehearsing knowledge of field	<i>rkf</i>
indicating shared experience	<i>ise</i>
seeking child's-children's perception	<i>scp</i>
acknowledging child-children	<i>acc</i>
commentary on teaching direction	<i>ctd</i>



A full presentation of the revised categories and their criteria is offered in Appendix 2.1.4. The extensive attention given within it to the *acknowledging chd-chdn* and *commentary on teaching direction* categories reflects both their importance and the difficulty of elaborating comprehensive criteria. Here I present an abbreviated version of the criterion for one of the subcategories to show its form:

rehearsing knowledge of field

rkf

This involves indications of T's understanding of, or attitude to, what is being talked about. It includes his perceptions of the field, as in, 'In my understanding, the priests, the Brahmin, the educated classes have an essentially monotheistic view, but with many dimensions' (R2/SR/2.26) and revelations of his stance to it: eg., 'I object to the arrogance of the English [re. name 'Everest']' (PA/SR/22.27).

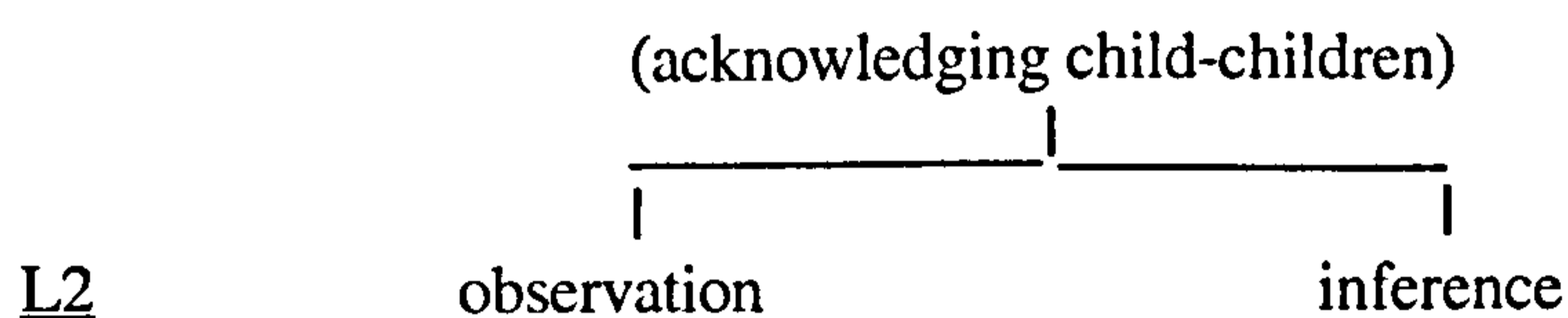
(abbreviated: Appendix 2.1.4)

As above, the criteria for all the categories are illustrated by examples drawn from the texts of T's commentaries. The codings in parentheses indicate their sources. These, in their turn, appear in full in the appropriate appendices.

6.6.2.3 Level 2: Categorisation of *acknowledging child-children* units

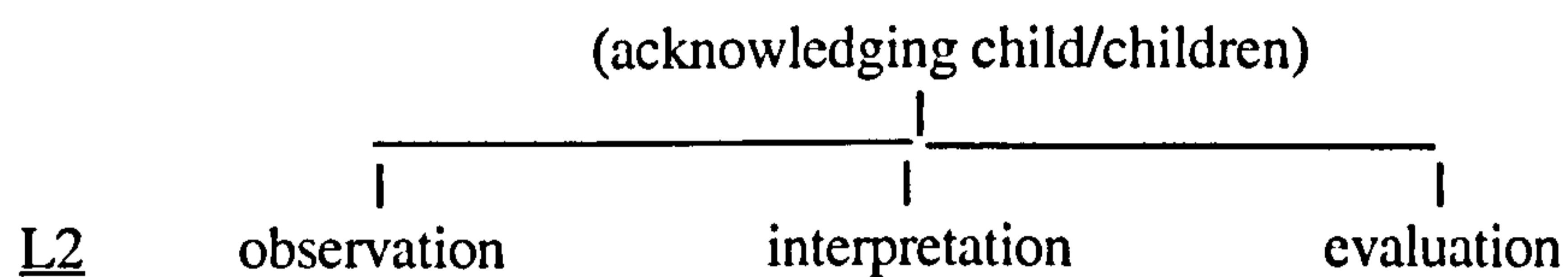
Of the Level 1 categories, one is central to my concerns. It incorporates the large body of *acknowledging child-children* units. It provides the focal material for all categorisation beyond Level 1. The content of Level 2, as finally represented in Fig. 2 and shown in Fig. 4 below for this level only, was determined in two stages. The second involved a substantial revision of the first. Since it offers an indication of how I worked, I show below how the original formulation was shaped and subsequently amended.

Fig. 4 Categorisation: Level 2: observation, inference (final version)



The first stage involved categorising all the *acknowledging chd-chdn* units as *observations*, *interpretations* or *evaluations*. There was no compelling logical reason for this. I am aware, however, of how my preoccupations influenced my choice. Given my interest in assessment, the most overriding of these was my concern for what appeared to be judgmental, or evaluative. As I sifted through the array of units, I began to see instances that appeared to be of this kind. The boundaries between what was and what was not judgmental, however, were not immediately apparent. Working out where they lay, or rather, evolving workable criteria for what lay on either side of them, was the major task at this level. From this emerged the three categories listed above and their accompanying criteria. Together, they accounted for those units that appeared to involve observation on T's part, those that involved interpretation and those involving evaluation. The formulation, later to be revised, is shown in Fig. 5:

Fig. 5 Categorisation: Level 2 (version subsequently revised)



observation *ob*

eg.1 / the children were saying 'that's odd', 'that's funny'. *acc* /
(PA/SR/22.52)

In eg. 1, T has noticed something about the children. It is not something that he has inferred on the basis of what he has noticed, but rather something prior to this, visible, or, in this case, audible, to him. Someone else present might have seen or heard what the children said too. I called units like these '*observations*', and coded them thus in my scheme.

I was aware that, in so doing, I ignored the philosophical claim that there can be no consciousness of percepts without concepts. It was enough for my purposes, however, to assume that there were events (eg., John raises his arm) and states (eg., John remains still) which T implied that he observed and which were in principle observable by others. These I could categorise as *observation* and add the tag '*ob*' thus:

/ the children were saying 'that's odd', 'that's funny'. *acc.ob* /
(PA/SR/22.52)

Some *observations* involved just a clause, or even a single word. Their common feature was that they involved the direct quotation of speech:

eg. 2 / Lana's 'hot' /

Others involved indirect, or reported, speech. They, too, appeared in sentences or, as in the following examples, clauses or phrases. Sometimes they involved single words (eg. 5 is imaginary, but based on eg. 4 for illustrative purposes):

eg. 3 .../ when they say myths are not true. *acc.ob* /... (R2/SR/10.35)

eg. 4 </ I choose to disagree with .../ Alan on Indian myths [he has said that they are sad]. *acc.ob* /... *commentary on teaching direction* /> (R2/SR/5.10)

eg. 5 </ I choose to disagree with .../ that. *acc.ob* /... *commentary on teaching direction* />

Finally, some observations involved paraphrase:

eg. 6 ... / what the child has said about a god being wicked [paraphrase of child's words] / ... (PA/SR/42.40)

inference *in*

What I initially saw as *inferences* appeared in many guises. Their common feature was that they went beyond observation by showing what T made of what he saw, but stopped short of revealing the weight he attached to it. I tagged all such units with the abbreviation 'in'. Most recognisable were those that involved T's assumptions about the way the children thought about the topic in hand:

eg. 7 / Here Lana's seeing every picture as an animal. *acc* / (PA/SR/4.06)

In this, T's claim involved inference. He could not see that Lana saw pictures as animals. It was rather a matter of his concluding from Lana's words or actions that this was how she saw them. In short, it involved his belief about how Lana thought.

Such *inferences* about the children's *thinking* were widespread and varied. Some implied that T had made an inference about the children's thought:

eg. 8 / I notice the child's view of burying people with treasure *acc.in* /
(PA/SR/7.56)

Others involved interpretations of the children's thinking processes, as in:

eg. 9 .../ because this is what the children focus on. *acc.in* /... (R2/SR/7.30)

eg. 10 .../ she's generalising now *acc.in* /... (R1/SR1/M73)

Many involved inferences about the significance of the children's actions:

eg. 11 / it's their noddings of agreement and their interjections *acc.in* /
(R2/SR/8.15)

Other *inferences* involve T's attributions of affect to the children. He marks what they like, dislike, are interested in, want to do or have become become intrigued by. His comments could relate to the present or to the future:

eg. 12 .../ but it's not a road they seem to want to go down. *acc.in* /...
(R2/SR/17.00)

eg. 13 / I anticipated that the children would find this strange *acc.in* /
(PA/SR/27.33)

Comments like these are not based on what T has just seen. It is rather that, perhaps on the basis of their past reactions, he predicts the children's future responses. It is as if he is saying that he believes they are disposed to respond in a certain way, here with surprise or amazement. Other *inferences* involve the attribution of motives and quasi-moral stances to the children, as in:

eg. 14 / you know what you felt was sort of you know playing trying to
wind you up *acc.in* / (SaBk/SR/12.10)

eg. 15 ../ It's partly this disapproval, *acc.in* /... (R2/SR/15.13)

A further variant involves items that might be seen as discourse moves or speech acts, as in T's 'Ady's point', 'Alan's answer' and even 'the children's questions about the temple'. I see these as *inferences*, rather than *observations*, on the ground that they involve the classification of the children's contributions to the discourse.

Last are many units showing T noticing things, but not knowing what to make of them:

eg. 16 / I'm pretty sure I didn't understand Alan. *acc.in* / (R2/SR/4.05)

These, too, as I saw them, were inferences: or, more precisely, evidence of T's awareness of his occasional failure to make them.

evaluation *ev*

Evaluations, as I saw them at this stage were like *inferences*, but went beyond them. They involved T attaching weight or value to what he saw. Such units were common in his commentaries, and evidence of their presence extremely varied.

One large sub-class involved judgments of degree, extent or intensity, as in:

eg. 17 / They were really hooked on them. *acc.ev* / (R2/SR/11.33)

In this, the children, in T's estimation, are not merely hooked, but really and truly hooked. This implies an act of discernment, in which he distinguishes between degrees of 'hookedness'. In short, like others of this kind, it involves evaluation.

Other signs of such judgments come with words like ‘very’, ‘quite’, ‘undoubtedly’, ‘certainly’, ‘really’, ‘strong’ and ‘strongly’. Such terms have a common function. They intensify the words they qualify. In assigning evaluative significance to them, I follow the lead of Labov (1972) especially.

A further group involves judgments of importance, relevance, logicity, potentiality or appropriateness. Commonly their evaluative stance is revealed by the presence of a single word, as in ‘relevant’ in:

eg. 18 .../ and Lana’s relevant interjection. *acc.ev* /... (R2/SR/9.20)

Others, however, are only implicitly evaluative. Typically, they involve references to significant ideas which the children’s points might lead to:

eg. 19 / I think she’s taking you to the idea of myths directing action *acc.ev* / (R1/SR1/M23)

A further subset involves stated or implied comparison, as in eg. 20. In common with others like it, this unit contains an element, marked by the words, ‘more than’, that takes it beyond mere inference.

eg. 20 .../ He’s seeing this as involving more than just a happy ending. *acc.ev* /... (R2/SR/4.47)

Closely similar are instances of T identifying what he sees as strengths in the children. They include things they know or understand, capacities that might be utilised and signs of their thinking advancing. They also involve their opposites: the children’s failures to understand and factors that caused him problems, such as speech defects. Typically, they involve T in making judgments of significance, worth and degree, as in:

eg. 21 .../ Ady knows there’s strong emotion *acc.ev* /... (R1/SR1/M80)

Words and phrases like ‘know’, ‘understand’, ‘be aware of’, ‘accept ideas’ and ‘thought further’ are widely represented in such units. Many involve metaphor:

eg. 22 / Lana builds on this *acc.ev* / (R1/SR1/M23)

As in the following example (and the one above), these acknowledgments of ‘assets’ involve the processes of learning (here noticing things) as well as the products:

eg. 23 .../ because the children have noticed that the bananas are not quite ripe. *acc.ev* /... (PA/SR/31.58).

A further sub-set, exemplified below, involves expressions of interest in, surprise at or other stances to the children’s activity:

eg. 24 ...</ But it’s interesting .../ that they see myths in terms of beliefs.
acc.in /... *acc.ev* /... (R2/SR/10.35)

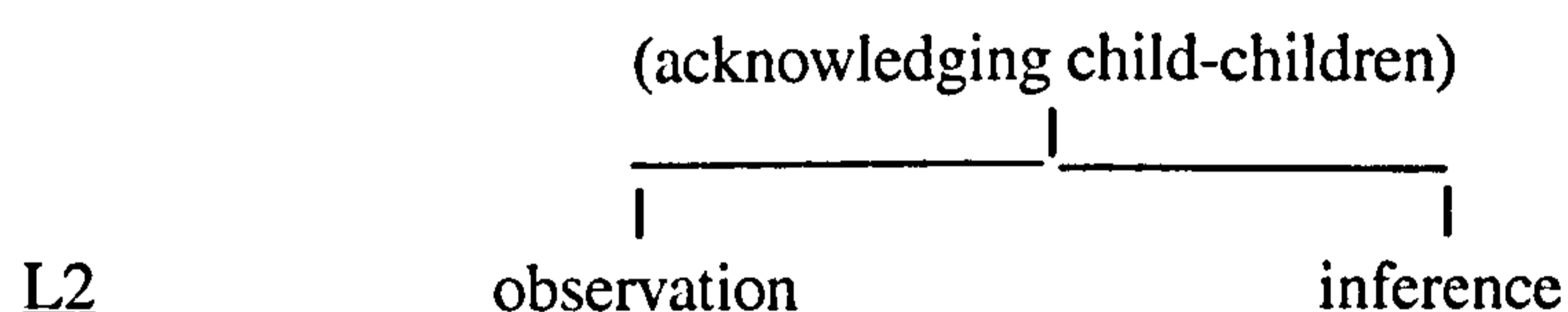
This is more than a report of T’s awareness that the children see myths in terms of beliefs. He reveals his stance: ‘it’s interesting’. I took a variety of terms used by T - ‘odd’, ‘surprising’, ‘amazing’, ‘staggering’, ‘extraordinary’ - as stance-markers in this way.

It was only when I had worked on this further level at some length, that a weakness in my initial scheme became apparent. Assuming that one could regard *observations*, *interpretations* and *evaluations* as sub-classes that were related at the same level, I looked for a further level of subcategories within each element of this tripartite division. With *observations*, this was straightforward, as will be seen in 6.6.2.4. The *interpretations*, too, seemed to present no great difficulties.

When I found that I could subcategorise what I saw as *evaluations* in the same way as the *interpretations*, however, I began to question the equal-but-different

relationship I had until then seen to exist between them. I came instead to regard the relationship as one of super- and subordination. Thus *evaluations* could be seen as *inferences* of a particular kind. More precisely, all inferences could be categorised according to whether they were, or were not evaluative. That consideration could be left until later. Meanwhile, I could incorporate all the items I initially seen as *evaluations* within the *interpretations* category. Level 2 could then involve just two categories, *observations* and *interpretations*, as shown in Fig. 4 above and repeated here for the reader's convenience:

Fig. 4 Categorisation: Level 2 (final version)



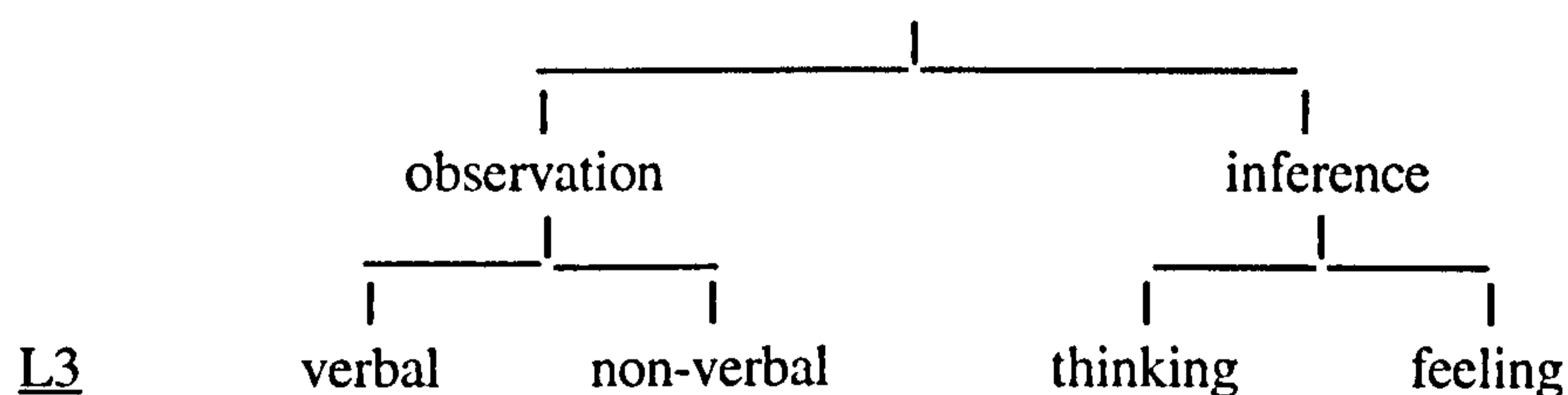
Since the means of distinguishing between *inferences* and *evaluations* remained the same, this revision of the content of Level 2 did not invalidate the work of the interjudge or cast into doubt the substance of the final scheme. I was therefore free to move to the next level, involving the subcategorisation of *observation* and *inference*.

6.6.2.4 Level 3: Categorisation of *observation* and *inference*

6.6.2.4.1 Introduction to Level 3

The next step of the categorisation of the *acknowledging child/children* units proceeded from the point reached at Level 2. It involved the subcategorisation of *observation* and *inference*. The product is set out below. The criteria employed to make the distinctions are indicated in 6.6.2.4.2 and 6.6.2.4.3 respectively.

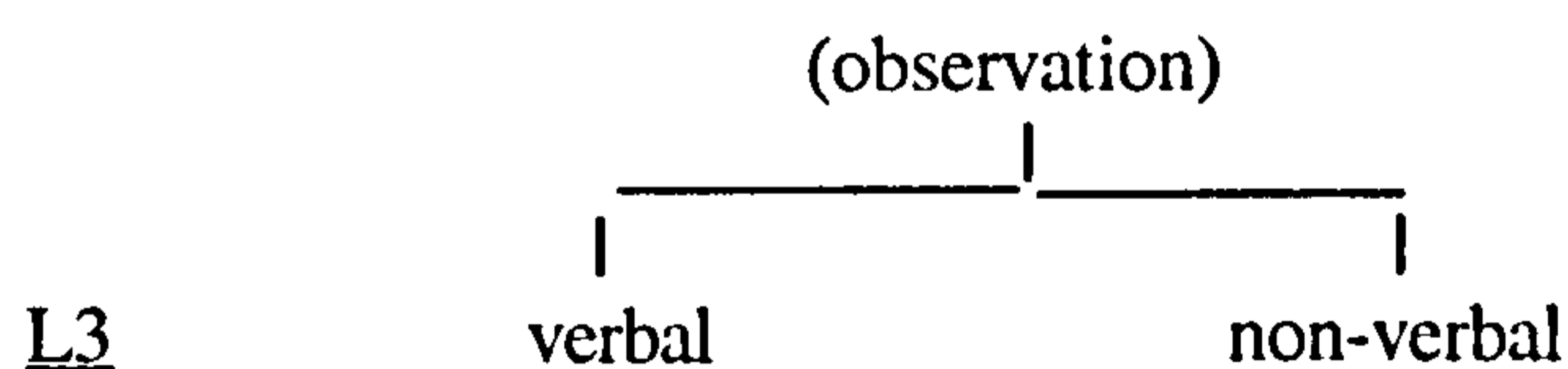
Fig. 6 Categorisation: Level 3: subcategories of observation and inference



6.6.2.4.2 Level 3: Categorisation of *observations*:

I found that I could divide T's observations into two subcategories: those which referred to the children's verbal behaviour and those which did not. The scheme is shown in Fig. 7:

Fig. 7 Categorisation: Level 3: subcategories of observation



The following, appropriately tagged *v*, exemplifies a *verbal* item:

eg. 28 / they brought this up by saying 'are these people begging?'
acc.ob.v / (PA/SR/16.00)

In this unit, as with others like it, T quotes the children's words directly, but offers no indication of how he interprets them. Others involve speech reported or alluded to, as in the minor element in this example:

eg. 29 </ I'm temporarily accepting .../ what she says about greed not pride,
acc.ob.v /... commentary on teaching direction /> (R1/SR1/M93)

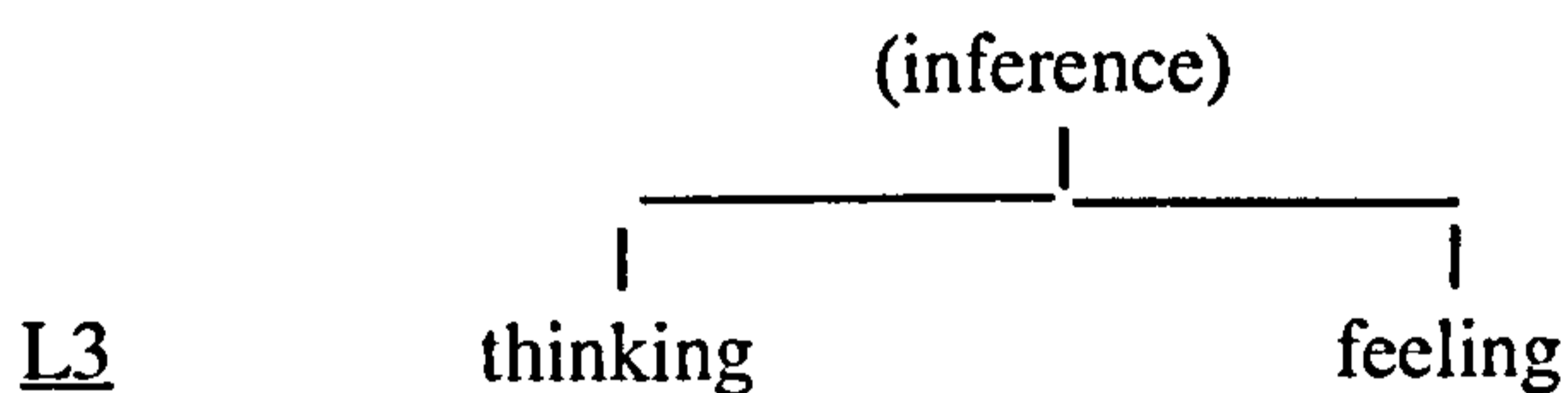
The minor unit of the following, by contrast, refers to the children's non-verbal behaviour. It is tagged *nv*:

eg. 30 </ .../ well it's just all there look at that I mean d'you see the eyebrows go up? *acc.s.nv* /... you know real response *acc.in* />
(R1/SR2/b19.50b)

6.6.2.4.3 Level 3: Categorisation of *inferences*:

The scheme for the subcategorisation of the whole body of *inferences* (including those formerly regarded as *evaluations*) is represented in Fig. 8:

Fig. 8 Categorisation: Level 3: inference



For some time my work on inferences suggested a need for two further subcategories, *intention* and *attitude*. Examples, however, were few. In consequence, I subsumed the items involved under *feeling* on the ground that both involved aspects of affect.

thinking

The *inferences* I regarded as involving *thinking* were diverse. The common criterion, however, was that all involved allusions by T to the children's intellectual processes, states and capacities. As in the examples below, all were tagged as *thinking*, abbreviated in the usual way as 't'.

Many involve inferences about how the children conceive of what is of immediate attention. As below, they commonly involve explicit references to what he thinks the children mean:

eg. 31 .../ I'm fairly certain Lana means myths are a guide to action *acc.in.t* /... (R1/SR1/M25)

Others, as in the major element of eg.32 below, imply beliefs:

eg. 32 </ I was sceptical of his interpretation of greed until .../ he said Basmasura was greedy because he wanted some power. *acc.ob* /... *acc.in.t* /> (R1/SR2/b9.28)

Whereas the examples above allude to the children's conceptual frameworks, others impute intellectual processes. Commonly they involve T's use of continuous verb forms. They include assertions about particular things, as in eg. 33, and generalisations, as in eg. 34:

eg. 33 / so um so they're considering you know um the question of death and uh afterlife *acc.in.t* / (R1/SR2/b15.54a)

eg. 34 / what seems to be going on is that they're just finding for everything that they think or believe they're finding new challenges to meet or saying you know they come to some conclusion maybe about one thing you know *acc.in.t* / (R1/SR2/b/28.38b)

Others involve T's assumptions about the children's intellectual capacity. As in egs. 35 and 36, the references may be explicit or implicit and his judgments positive or negative:

eg. 35 .../ Some of their own conversations indicate it is possible for them to see their own stories as myths *acc.in.t* /... (R2/SR/17.00)

eg. 36 .../ I'm aware that it might be difficult [for the children to understand] *acc.in.t* /... (Sa/Dem/SR/a4.55)

Judgments about the advances of children's thinking and their success or failure in grasping points are common. Many involve metaphor, as in examples 37 and 38:

eg. 37 / Lana builds on this *acc.in.t* / (R1/SR1/M23)

eg. 38 .../ They haven't taken that on board, *acc.in.t* /... (R1/SR2/b8.55)0

feeling

Distinct from T's inferences about *thinking* is a further body of units that attribute intentions, attitudes and emotional states to the children. I categorised them as *feelings* and, following established practice, tagged them 'f'.

Some are to do with disturbance, as in:

eg. 39 / I'm feeling that they're perplexed *acc.in.f* / (R1/SR2/b1.56)

Others allude to a variety of states, ranging from wanting to awe:

eg. 40 / Their interest had also spread spontaneously. All the children had wanted to make alpana patterns. *acc.in.f* / (Sa/Dem/SR/b3.54)

eg. 41 / They're in awe of this. *acc.in.f* / (Sa/Dem/SR/a12.51)

The most common allude to the children liking, enjoying or being interested in things. They could be explicit, as in eg. 42, or metaphorical, as in eg. 43:

eg. 42 / Alan liked the stories because they're about gods. *acc.in.f* / (R1/SR2/b1.56)

eg. 43 .../ She's right into this. *acc.in.f* /... (R2/SR/12.15)

Two further manifestations of *feeling* involve the children's attitudes and intentions, as in egs. 44 and 45, below:

eg. 44 .../ probably because I feel he's being serious really *acc.in.f* /...
(R1/SR2/b24.23a)

eg. 45 </ mm well I'm not sure whether he's trying to wind me up .../ where
where he's where he's saying there it's not a new sun it's not a
new planet *acc.s.ob* /... *acc.in.f* /> (SaBk/SR/12.10b)

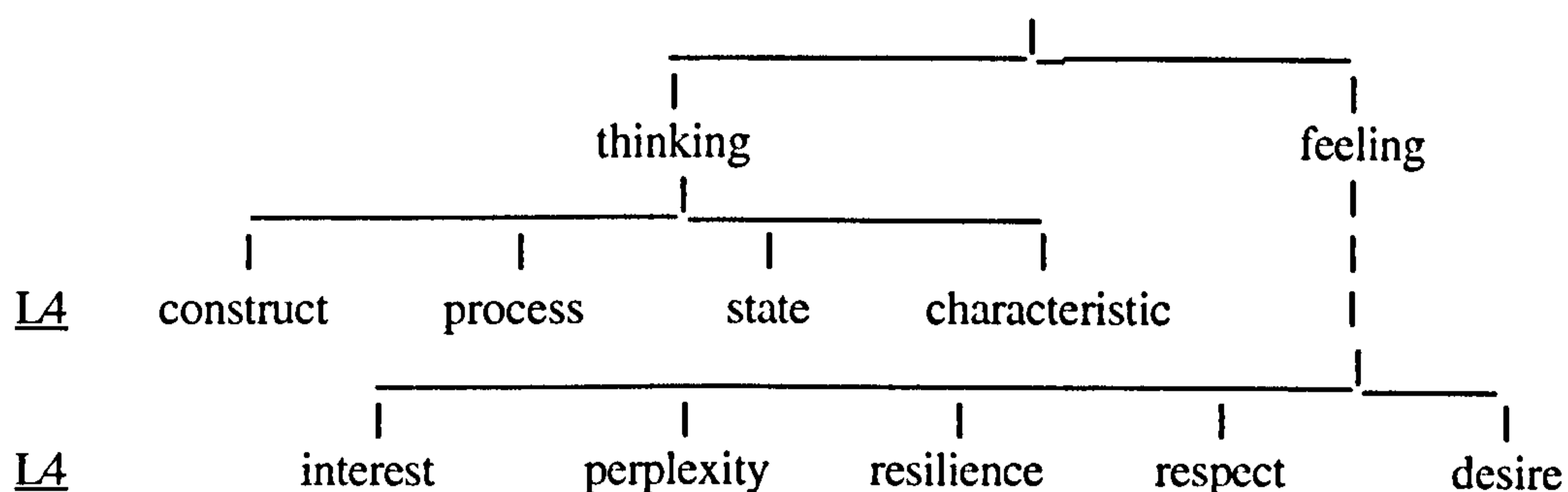
A few items were especially difficult to categorise, there being reason to regard them as involving both *thinking* and *feeling*. In the subordinate element of eg. 46, below, 'getting the humour' has an intellectual element, in that it involves the perception of incongruity, and an affective one, in that it alludes to the children's amusement. In fact, this appears to be one of those Rylean situations in which the subject is engaged, not in two activities, but one, i.e., being amused by a perceived incongruity. Fortunately, few items troubled me in this way.

eg. 46 </ .../ they're actually understanding what you're talking about
acc.g.ev.t /... because they're getting the humour in it right
acc.in.f /> (R1/SR2/b28.38b)

6.6.2.5 Level 4: Categorisation of *thinking* and *feeling*

6.6.2.5.1 Introduction to Level 4

The next step involved the subcategorisation of *thinking* and *feeling*. The final product is set out below to show the interrelationships of its parts. The criteria for the distinctions involved are indicated in 6.6.2.5.2 and 6.6.2.5.3 respectively.

Fig. 9 Categorisation: Level 4: *thinking* and *feeling*

6.6.2.5.2 Level 4: Categorisation of *thinking*:

As shown in fig. 9, I divided the *thinking* units into four subcategories: *constructs*, *processes*, *states* and *characteristics*. Below are indications of the criteria employed, together with some examples for illustrative purposes. To the right of each subcategory is the abbreviation used to tag its members.

construct *co*

The key characteristic of the *construct* subcategory is that each instance involves T's view about how the children conceive of the topic being considered. Commonly they are couched in phrases like 'sees as ...' (eg.47, below), 'sees ... in ... terms' (eg.48) and 'as if he's saying that ...' (eg.49). As seen in these examples, his inferences may be explicit.

eg. 47 .../ he's seeing this as involving more than just a happy ending.
acc.s.ev.t.co /... (R2/SR/4.47)

eg. 48 / 'won't be able to cuddle somebody' suggests she sees power in very concrete terms. *acc.in.t.co* / (R1/SR2/b11.12)

eg. 49 / It's as if he's saying that things have gone well when someone realises his ambitions. *acc.in.t.co* / (R2/SR/4.47)

Other items involve references to the children's constructs, but depend on the wider context for their meaning:

eg. 50 / the idea they've got it's already complicated *acc.in.t.co* / (R2/SR/10.10)

The same principle applies in eg. 51 (below). A further dimension is added, however, in that the referent ('his answer') is commented on:

eg. 51 / his answer was mythological, not geographical. *acc.in.t.co* / (Sa/Dem/SR/a6.30)

process

pr

The key characteristic of the *process* units is that each involves allusions to mental operations by which ideas are shaped, weighed and reconstructed. Commonly these are couched in words and phrases like 'noticed', 'talking about') and 'coming to ... solution' (egs. 52, 53 and 54, below). As seen in these examples, T's inferences may be explicit.

eg. 52 / because the children have noticed that the bananas are not quite ripe. *acc.in.t.pr* / (PA/SR/31.58)

eg. 53 / The children are talking about using power. *acc.in.t.pr* / (R1/SR1/M141)

eg. 54 / you know she's coming to some kind of solution for what you might do *acc.in.t.pr* / (R1/SR2/b33.17a)

Others involve metaphor (eg.55) or speak of the level of the children's *thinking* (eg. 56):

eg. 55 / Lana builds on this *acc.in.t.pr* / (R1/SR1/M23)

eg. 56 / she's generalising now *acc.in.t.pr* / (R1/SR1/M73)

state

st

The key characteristic of the *state* units is that they involve aspects of the children's thought that are more or less continuous. Commonly they involve variations on terms like 'know', 'remember' and 'aware':

eg. 57 / thus the children already knew a lot of Greek myths *acc.in.t.st* / (PA/SR/Prelim)

eg. 58 / I think Lana undoubtedly remembered what happened. *acc.in.t.st* / (R1/SR1/M113)

eg. 59 / that signals Adam's awareness *acc.in.t.st* / (R1/SR1/M34)

I include in this category those items which at first sight look like *processes* (see eg.60, below). My warrant is that they most closely resemble other items about continuing conditions, such as 'understanding'. Some of these, as in eg. 61, are put metaphorically.

eg. 60 / the children are beginning to get a sense of place and of people's beliefs. *acc.in.t.st* / (PA/SR/4.06)

eg. 61 / I can see Jo's on board about the moral dimension of some myths. *acc.in.t.st* / (R1/SR2/b7.11)

characteristic

ch

The common factor of the items categorised as *characteristics* is that they involve lasting qualities of mind. Thus T refers to the children's intelligence and their capacity to surmount intellectual problems, or acknowledges that support is needed:

eg. 62 / he's [Alan] very intelligent, *acc.in.t.ch* / (R1/SR2/b1.16)

eg. 63 / I was fairly sure that she would see that there is more to power than physical or political strength *acc.in.t.ch* / (R1/SR1/M147)

eg. 64 / They definitely need help to get started *acc.in.t.ch* / (R1/SR1/M8)

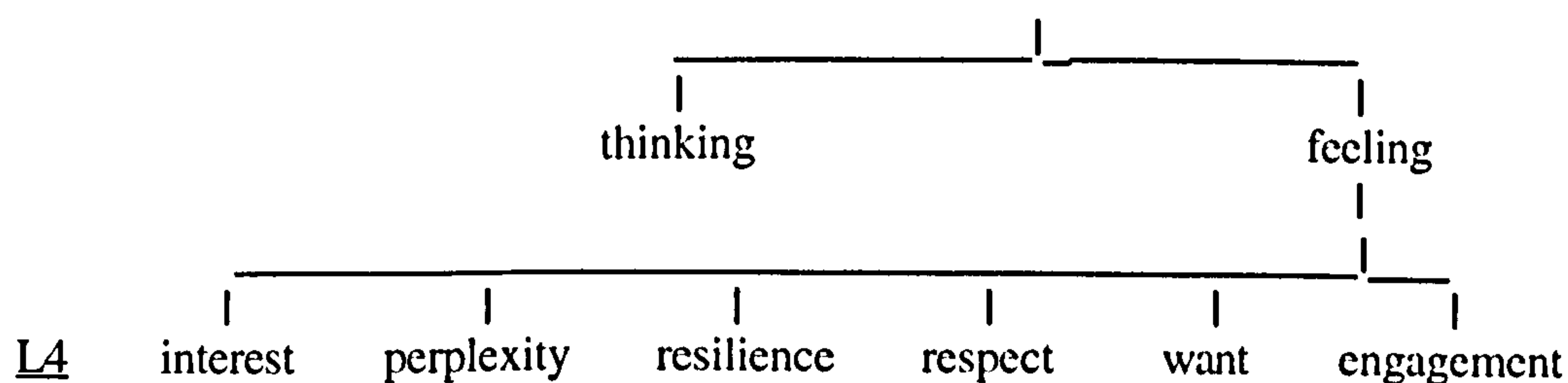
Other items, usually made as generalisations, involve assertions about the children's heuristic approaches, as in eg. 65:

eg. 65 / I think he often just drops ideas into a discussion just to try them out. *acc.in.t.ch* / (R2/SR/5.10)

6.6.2.5.3 Level 4: Categorisation of *feeling*:

To ease the task of following my categorisation at Level 4, I set out the part of the figure that relates to feeling below, as Fig. 10:

Fig. 10 Categorisation: Level 4: *feeling* only



interest*it*

I allocate T's assertions about the children's interest and capacity to become interested in the topics being covered to the affective domain. Commonly these are signalled by such words and phrases as 'like', 'enjoy' and 'make an impact' (egs. 66, 67 and 68, below):

eg. 66 / Alan liked the stories because they're about gods *acc.in.f.it* /
(R1/SR2/b1.56)

eg. 67 / they almost seem to be enjoying the detail. *acc.in.f.it* /
(Sa/Dem/SR/a12.24)

eg. 68 </ I know it will make an impact on the children .../ because it makes
an impact on me as well. *rkf* /... *acc.in.f.it* /> (PA/SR/27.33)

perplexity*px*

Some comments, involving variations on the term 'perplexity' (eg. 69), or 'upset' (eg. 70), point to T's assumptions of the children's puzzlement about particular ideas:

eg. 69 / I'm feeling that they're perplexed *acc.in.f.px* / (R1/SR2/b1.56)

eg. 70 / the child who asked 'Why?' sounded almost upset. *acc.in.f.px* /
(Sa/Dem/SR/b8.40)

Their small numbers lead me to include items attributing moral approval or disapproval to the children in this category, as in eg. 71:

eg. 71 / they almost have a moral position on this it's a kind of disapproval
acc.in.f.px / (R2/SR/15.13)

resilience

rl

The common characteristic of these items is that they involve allusions to the children's persistence in the face of challenges:

eg. 72 / I think he can take that. *acc.in.f.rl / (R2/SR/5.10)*

eg. 73 / but they're still there all of them all of them are still there *acc.in.f.rl / (R1/SR2/b26.00c)*

respect

rt

With some comments, categorised as *respect*, T attributes awe, or respect, to the children:

eg. 74 / they're in awe of this *acc.in.f.rt / (Sa/Dem/SR/a12.51)*

want

wa

Under the category of *want*, I include all of T's comments about the children wanting - or not wanting - to do things, as in egs. 72 and 73:

eg. 72 / Their interest had also spread spontaneously. All the children had wanted to make alpina patterns. *acc.in.f.wa / (Sa/Dem/SR/b3.54)*

eg. 73 / but it's not a road they seem to want to go down *acc.in.f.wa / (R2/SR/17.00)*

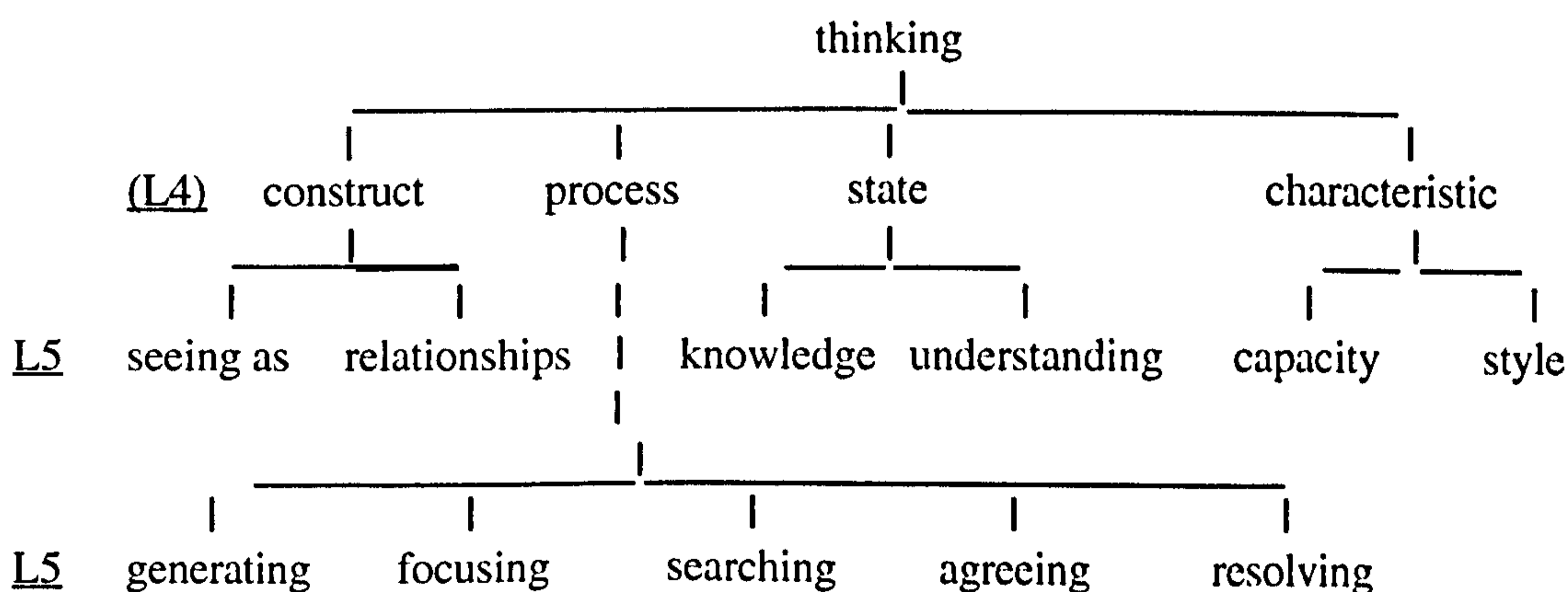
6.6.2.6 Level 5: Further subcategorisation of *thinking* and *feeling*

6.6.2.6.1 Introduction to Level 5

The next step should have involved the further subcategorisation of the *thinking* and *feeling* items. By this stage, however, I saw that the number of items I had under the subclasses of *feeling* at Level 4 was relatively small. Further subdivision appeared to be warranted, but only in parallel with the later stages of my subcategorisation of *thinking*.

The number of *thinking* items was larger, however. Even when subcategorised at Level 4, further potentially significant distinctions could be made without producing numbers of items so small as to make them unreliable. The product of this further level of subdivision is set out below as Level 5 of the final category system. The criteria employed to make the distinctions involved are then indicated in sections 6.6.2.6.2 to 6.6.2.6.4.

Fig. 11 Categorisation: Level 5: *thinking*: subcategorisation of *construct*, *process*, *state* and *characteristic*



6.6.2.6.3 Level 5: Categorisation of *process*:

generating *ge*

The *process* items I subcategorised as *generating* had one factor in common. All involved inferences by T about how the children contributed to or participated in the discourses. This might involve generating new points (hence the heading for the category), volunteering information, raising questions or other means. In many instances, as in eg. 77 (below), the items depict forward movement and make the topic of their contributions clear. In others, as in egs. 78 and 79, the topic is unstated (although usually deducible from the discourse context) and the advance signified metaphorically:

eg. 77 / they seem to be saying, 'how do we know this is an Indian and not an English street?' *acc.in.t.pr.ge* / (PA/SR/10.00)

eg. 78 / they've come up with their own idea *acc.in.t.pr.ge* / (PA/SR/5.20)

eg. 79 / Lana builds on this *acc.in.t.pr.ge* / (R1/SR1/M23)

I include within this category those items that depict thinking coming to a halt (eg. 80, below) or moving in what T sees as an irrelevant direction T, as in eg. 81:

eg. 80 / Laura's line about a message about listening to instructions has come to an end. *acc.in.t.pr.ge* / (R1/SR1/M88)

eg. 81 / the point wasn't germane to where we were *acc.in.t.pr.ge* / (PA/SR/24.10)

My warrant for regarding these items, and others like them, as *generating*, was that each implied movement, even if in one case it had stopped and in the other it was off the point.

focusing*fc*

By this I mean all those items that involve T indicating what the children are focusing on as the discourses proceeded. These may be general or specific, concrete or abstract, and couched in literal or metaphorical terms. The examples below illustrate the range:

eg. 82 / the children are talking about using power *acc.in.t.pr.fc* / (R1/SR1/M141)

eg. 83 / all the time the children are leaping around in this world of myths. *acc.in.t.pr.fc* / (R1/SR2/a5.32)

eg. 84 / a move from reincarnation and now it's moved to some sort of moral area at the moment *acc.in.t.pr.fc* / (R1/SR2/b26.00a)

searching*se*

This category includes all the items in which T indicate that he believes the children are struggling to articulate their thoughts. As illustrated in eg. 85, assertions of this kind are commonly linked to indications of T's interpretive problems:

eg. 85 / you can't actually get hold of what it is they are trying to say it's quite difficult *acc.in.t.pr.se* / (R1/SR2/b39.04a)

agreeing*ag*

Many units indicated that T had inferred that the children had reached agreement

on an issue with him or with each other. All involved his use of variants of 'agree', 'assent' or 'accept'. Most, as in eg. 86, appeared to refer to agreements signalled orally. Others made reference to paralinguistic channels, as in eg. 87.

eg. 86 / they're all agreeing with this *acc.in.t.pr.ag* / (R1/SR2/b6.14)

eg. 87 / but they seem to nod assent at that don't they *acc.in.t.pr.ag* /
(SaBk/SR/19.16a)

resolving

rs

By *resolving*, I mean all those units that involve T indicating that he believes the children have found solutions to the intellectual problems posed by the subject matter. Sometimes, as in eg. 88, his position is signalled by the explicit use of phrases like 'coming to a solution'.

eg. 88 / this is just brilliant isn't it you know she's coming to some kind
of solution for what you might do *acc.in.t.pr.rs* /
(R1/SR2/b33.17a)

I include in this category two further groups of items, each of which I initially believed would merit a category of its own. One involves T indicating the belief that the children have judged the people or situations under discussion, as in eg. 89. The other involves him asserting that they have noticed particular things, as in eg. 90:

eg. 89 / while Lana is judging his notion. *acc.in.t.pr.rs* /

eg. 90 / because the children have noticed that the bananas are not quite
ripe. *acc.ev.t.pr.rs* / (PA/SR/31.58)

In each case, however, the number of the items involved was too small to warrant a

separate category. My case for placing them in the *resolving* category is that both judging and noticing, as used in these contexts, involved resolution-seeking, the one to determine a stance and the other to interpret visual evidence. The case may be a little stretched. The small numbers involved, however, minimise any possible distortions.

6.6.2.6.4 Level 5: Categorisation of *state*:

As shown in Fig. 11, I divided the *state* items into two subcategories, *knowledge* and *understanding*. The relationship between the two is philosophically complex. My concern, however, was for a distinction that appeared to be of consequence to T, in so far as it was encapsulated in his language. In this way, the potential difficulties were largely avoided.

knowledge

kn

I categorised as *knowledge* most of the items in which T used the words or phrases ‘know’, ‘know that’ or ‘are aware of’, or alternatives that could be paraphrased thus without changing their meaning significantly. Egs. 91 and 92 show such direct language:

eg. 91 / thus the children already knew a lot of Greek myths *acc.in.t.st.kn* /
(PA/SR/Prelim)

eg. 92 / what they know about their own you know situation
acc.in.t.st.kn / (SaBk/SR/17.50b)

I deviated from this rule only where T appeared to use ‘know’ in the sense of ‘understand’. As in eg. 93, in which the word ‘why’ was coupled to the ‘know’,

the wider linguistic context usually made the intention clear.

eg. 93 / they didn't know why they might try and keep this particular altar area clean *acc.in.t.st.un* / (SaBk/SR/17.50f)

Potential equivalents to 'know' required individual examination. In eg. 94, 'remembered' could be replaced by 'knew' without changing the meaning significantly. Similarly, in eg. 95, 'known much about' could replace 'won't have had much access to' without distortion.

eg. 94 / I think Lana undoubtedly remembered what happened.
acc.in.t.st.kn / (R1/SR1/M113)

eg. 95 / I anticipate that the children won't have had much access to this
acc.in.t.st.kn / (Sa/Dem/SR/a1.54)

I placed other units in this category which, had there been more of them, I would have allocated to one of their own. These related primarily to assertions about the children's belief, as in eg. 96:

eg. 96 / and so they do have beliefs surrounding you can see that they do
acc.in.t.st.kn / (R1/SR2/b15.54a)

understanding

un

By *understanding*, I mean all the items that involved inferences about the children's comprehension of the subject matter in hand. The choice of the category title was made with some care, for there were but three instances of its use by T. One is shown in eg. 97:

eg. 97 / they're actually understanding what you're talking about because they're getting the humour in it ... *acc.in.t.st.un* /
(R1/SR2/b28.38b)

In fact, there were more instances of 'know' being used in this sense than 'understand' itself (one is shown as eg. 93, above). Nonetheless, there was a high

incidence of items in which the conditions one normally associates with this state were met. Most commonly, they involved metaphor, as in egs. 98 and 99:

eg. 98 / I can see Joanne's on board about the moral dimension of some myths. *acc.in.t.st.un* / (R1/SR2/b7.11)

eg. 99 / but they were there that silence was an indicator of them being there. *acc.in.t.st.un* / (Sa/Dem/SR/a16.38)

Similarly, the children were seen to have 'already perceived that' (R1/SR2/b3.33), 'picked it up' (R1/SR2/b26.00e), to have (or have not) 'risen to it' or 'cottoned on' (both R1/SR1/M116), to be 'right into the heart of' (R1/SR2/b5.51b) issues: these and other metaphors for understanding were widespread.

Along with these was a range of items in which idiom or paraphrases of 'understand' were used to imply understanding and its development, as in egs. 100 - 102:

eg. 100 / I think I'm pretty sure she knew what she was talking about *acc.in.t.st.un* / (R1/SR2/b39.04a)

eg. 101 / I think this is one of the things the children are beginning to see, for example, the messenger *acc.in.t.st.un* / (PA/SR/3.05)

eg. 102 / that signals Alan's awareness *acc.in.t.st.un* / (R1/SR1/M34)

Finally, there were items in which inferences about understanding were implicit, but discernible from the wider context, as in eg. 103:

eg. 103 </ I think I can do that because .../ Lana's already talking about how Kubira's learned not to be proud of his riches *acc.in.t.st.un* /... *ctd* /> (R1/SR2/b8.55)

6.6.2.6.5 Level 5: Categorisation of *characteristic*:

I divided the units that were about the *characteristics* of the children into two subsets, headed *capacity* and *style*.

capacity

ca

By *capacity*, I meant all the items in which reference was made, directly or indirectly, to the children's intellectual abilities. An instance of the former may be seen in eg. 104 (below). The latter is apparent in eg. 105, in which the children's capacities are viewed in the light of the challenges of the task in hand, a common function of such inferences.

eg. 104 / he's [Alan] very intelligent *acc.in.t.ch.ca* / (R1/SR2/b1.16)

eg. 105 </ .../ they definitely need help to get started *acc.in.t.ch.ca* /... if they are to get some sense of the significance of myths, however embryonically *ctd* /> (R1/SR1/M8)

style

sy

By *style* items, I meant the expression of inferences, whether explicit or implicit, about the typical ways in which the children approached or engaged in learning activities. One of the former may be seen in eg. 106:

eg. 106 / I think he often just drops ideas into a discussion just to try them out *acc.in.t.ch.sy* / (R2/SR/5.10)

By contrast, eg. 107 illustrates the latter. The child's way of participating in discussion is implied, not stated. Neither subcategory was widespread.

eg. 107 / but it's very hard to follow what he's about. *acc.in.t.ch.sy* / (R1/SR2/b1.16)

6.6.2.7 Level 6: Subcategorisation of Level 5 items (generating, knowledge, capacity, etc.), plus items carried down from Level 4)

6.6.2.7.1 Introduction to Level 6

My primary concern throughout Levels 3, 4 and 5 was to arrive at a finely discriminating analysis of how T conceived of the children's *thinking* and *feeling* as they participated in the classroom discourses. With Level 4, I thought that the discrimination of *feeling* had been taken far enough for my purposes. With regard to *thinking*, the same position was reached at Level 5. I could now return to the matter that had been partly addressed at Level 2, only to be postponed for attention later (see 6.6.2.3). This involved the relationship between inference and evaluation.

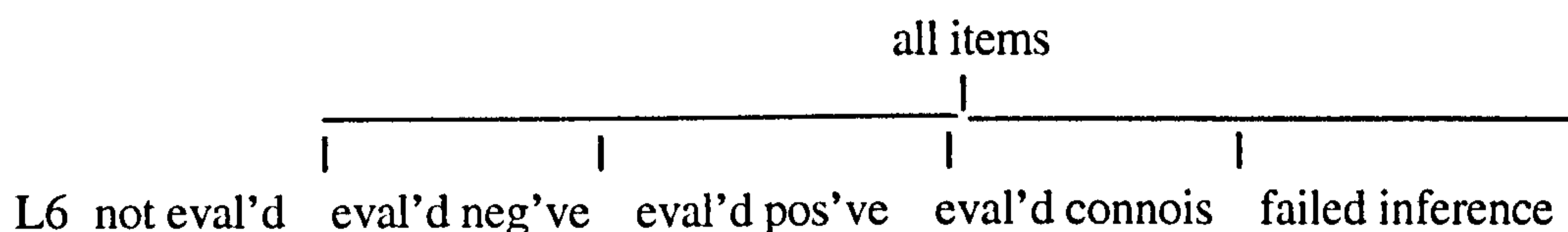
The key decision I made in my revision of the original scheme for Level 2 was that I would regard *evaluation* as a subcategory of *inference*. In consequence, all work on categorisation from Level 3 onwards, except that related to *observation*, was work on *inference*. At Level 6, therefore, I could examine the whole body of *inference* items, now more finely categorised, in this light. Using the same criteria as before (see 6.6.2.3), I could determine which of the items involved evaluation and which did not. The latter I could simply tag as *not evaluated (ne)*. The rest, of course, did involve evaluation.

I could have left matters with this simple binary division. I did not, however, for I saw that a more subtle analysis of the evaluated items was possible. It involved discriminating between those which incorporated *negative* views, those involving *positive* and, a third possibility, those which involved *connoisseurship*. Beyond this was yet a further subcategory. It involved a range of items in which T admitted that he was unable to make sense of what the children were saying. Small in

number, but not so few as to lack potential significance, I classified them simply as *failed inferences (fi)*.

The outcome of this was that I could subcategorise all the items from Level 5, together with those not further subcategorised beyond Level 4, in the manner shown in Fig. 12, below:

Fig. 12 Level 6: subcategorisation of inference items from Levels 4 and 5



In 6.6.2.7.2, I enlarge on these distinctions.

6.6.2.7.2 Level 6: Subcategorisation of L4 and L5 inference items

not evaluated *ne*

One can only show that an item is not evaluated by acknowledging that the features associated with evaluation are not present. Those features are laid out in general terms in 6.6.2.3 and, in relation to the more discriminating examination of evaluated items, in the lines that follow. Eg. 108 is an instance of what I regard as an unevaluated *inference (not evaluated, in the category system)*. The reader is asked to note that the signs of evaluation set out in this section and elsewhere are absent.

eg.108 / I notice the child's view of burying people with treasure
acc.in.t.co.sa.ne / (PA/SR/7.56)

evaluated positive and evaluated negative (*ep* and *en*)

The range of features which mark items out as evaluative is outlined in 6.6.2.3 (above). By Level 6, I was concerned to explore a further dimension, namely evaluative orientation. By this I meant whether T's comments suggested that he judged the children's *thinking* or *feeling* in a *positive* or *negative* light. Consideration of egs. 109 and 110 will show why simple criteria to aid such discrimination were elusive:

eg.109 / she's beginning to see more in the notion of power than this -
power to effect change, to bring about someone's death.
acc.in.t.st.un.ep / (R1/SR2/b11.12)

eg.110 / she's [Lana] still seeing it as something that you have as a property
which you can't help *acc.in.t.st.un.en* / (R1/SR2/b11.56)

The first item appears to involve a *positive* judgment. The clue is in the words, 'beginning to see more ... than'. I categorise it as *evaluated positive* and duly tag it *ep*. Eg. 107, however, looks like a *negative* judgment (duly tagged *en: evaluated negative*), the burden of which is carried by the words 'still seeing it as'. The problem is that there is no consistent relationship between the words used and the evaluative orientation they signify. 'Still' may signal a negative evaluation in one context: in another, a positive one, as in 'she's still going'.

Many of the evaluated items were like this. Two ways around the problem were available. One involved working from T's commentaries on his teaching and his contributions to the classroom discourse, from which a general view of his values and aims could be constructed, a task already undertaken in 5.3.5. Thus, with eg. 111 in mind, one might infer that he would place a positive value on the children making sense of an issue of credibility, and duly categorise the item as *evaluated positive*:

eg.111 </ so having been through all that and got I think .../ the kids to really understand that you know the difficulty of the position of believing somebody who's claiming something incredible right
acc.in.t.st.un.ep /... commentary on teaching direction />
 (R1/SR2/b32.47a)

The other involved verifying each item with T. This I rejected because of the burden it would have placed on him. Instead, I used the first approach.

evaluated as connoisseur *ec*

One subset of evaluative *inferences* was just large enough (8 items in all) and distinctive enough to warrant a category in its own right. Each of its members was characterised by T's expressions of amazement, fascination, interest or surprise - or the lack of it - at what he saw in the children. Below are two examples of such expressions:

eg.112 / I'm thinking that they've already made an amazing journey to reach where they've got to *acc.in.t.pr.rs.ec /* (R2/SR/10.10)

eg.113 / where these things [the children's ideas] come from it's quite extraordinary where they come from *acc.in.t.pr.rs.ec /*
 (R1/SR2/b17.26c)

I saw these as items evaluated by T as a connoisseur, one who, on the basis of informed judgment saw in what the pupils said things that were of more than immediate significance, things that enhanced or confirmed his own appreciation of children's potential.

failed inferences *fi*

Finally there was a batch of items which depicted T's awareness of his own occasional inability to make inferences about the children, in spite of his being aware that such inferences needed to be drawn. It was typified by his use of expressions of uncertainty, such as 'I'm not sure', 'you can't get hold of' and 'I think ... but really don't know'. Egs. 114 and 115 illustrate this small body of material, which I categorised as *failed inferences*.

eg.114 / I'm not sure what Alan's up to here but he's um whether he's just testing out an idea against what he's heard I'm not really sure what he's up to really *acc.in.t.pr.se.fi* / (R1/SR2/b24.23a)

eg.115 / you can't actually get hold of what it is they are trying to say it's quite difficult *acc.in.t.pr.se.fi* / (R1/SR2/b39.04a)

6.6.2.8 Level 7: Subcategorisation of Level 6 items (*not evaluated, evaluated negative, etc.*)

The final level of categorisation was by far the most straightforward. It involved determining whether each of T's inferences categorised at Level 6 referred to a single child or to more than one. The former I categorised it as *single* and attached the tag *s*, as in eg. 116 (below). By 'more than one', I meant anything from two children to the whole class, and used the term *group*, with the tag *g*, as shown in eg. 117.

eg.116 / Lana builds on this *acc.ev.t.pr.ge.ep.s* / (R1/SR1/M23)

eg.117 / you know they've trotted out a sort of range of things you know about gods and you know what they might be *acc.in.t.pr.ge.ne.g* / (R1/SR2/b17.26a)

6.6.2.9 Systematic tagging of units of meaning

I tagged all *acknowledging child-children* units that involved *inference* according to the system described above. This meant that each unit amassed over the whole categorisation process seven tags, one for each level of the category system. The first tag represented the first level, the second the second, and so on. Thus any unit of meaning could be extracted from its context and its categorisation at any of the seven levels discerned.

The only exceptions to this involved the *inferences* categorised as *feelings*. As noted in 6.6.2.6.1 (above), they were too few to warrant further subcategorisation at Level 5. I depicted the absence of this level of categorisation by adding the tag *z* (for *zero*) to all relevant units before proceeding to consider the matters of evaluation at Level 6 and the number of children involved at Level 7. In this way, I was able to ensure that the tagging of the feeling items conformed to the seven-element system outlined in the previous paragraph. Its application to these items is visible in the subordinate clause of eg. 118, below:

eg.118 </ I sense I can offer this detail .../ because they're so involved.
acc.in.f.it.z.ep.g /... ctd /> (Sa/Dem/SR a12.24)

CHAPTER 7

DATA COLLECTION AND ANALYSIS, PHASE 2: PART 2

7.1 OVERVIEW

This chapter has two main elements:

1. An analytical account of the five discourses on which the main phase of this investigation focuses, leading to their classification as three discourse variants (7.2. below);
2. An analysis of the relationships between T's children-related thinking-on-action (see 6.6) and the discourse types noted in 7.2 (7.3, below)

7.2 HUMANITIES PROJECT: FIVE DISCOURSES

7.2.1 Overview

The broad course of this project and the teacher's purposes underlying it are outlined in 6.4.1 and 6.4.3. Here I focus on the five discourses recorded. I refer to them as the Photo Album, Saraswati Puja Demonstration (usually shortened to Saraswati Demonstration), Saraswati Puja Book (Saraswati Book) and Reflective 1 and Reflective 2 discourses respectively. I offer a brief sketch of each one to indicate its primary characteristics and then, building on the schema offered by Edwards and Furlong (1978), to show how they conform to three discourse types. For this, I use two kinds of data. One is mainly qualitative. The other is statistical. One complements the other.

7.2.2 Five discourses

7.2.2.1 Photo Album

(Full transcript of discourse in Appendix 2.2.1)

The core discourse of the first episode was 45 minutes long. In it, T worked with a group of six children, while the rest of the class, supported by the classroom assistant, completed other curricular work. The children sat around a table with T as he showed them an album of photographs he had taken on a visit to India. The content of the photographs ranged from street and market scenes to close-ups of temples. T's immediate purpose, he said subsequently, was to arouse the interest of the group of children in the subject matter in the expectation that the rest of the class, intrigued by what was going on, would also want to become involved. He explained the role of the album thus:

Photographs would be a good way. They were based on my genuine experience and the children would be able to feel its authenticity. They would know that there had been a genuine human interaction.

(in. Appendix 2.3.1)

The discourse ranged widely. The children honed in on the detail of the photographs. They noticed similarities between houses they depicted and their own. They observed the carvings on temple pillars. They asked where T had slept and how he had coped with the cold of the mountains. They noted the wetness of the rice fields and the sadhus (holy men) who stood for hours upside down. They expressed surprise that Everest was regarded as holy, then ventured that, since it was the biggest mountain, the gods could live in it. They noticed prayer clothes suspended from buildings and the tea-wallah in the street.

T told the children how the temple carvings were religious scripts, explained why

there were similarities between their own houses and those they saw in the pictures, and indicated that there were differences too. He related how, in Darjeeling, he had slept on the ground. He explained why he preferred to speak of Everest as Sagamutu, its Hindu name. He contrasted the mud of a market place with colours of flowers sold in it.

In form, the discourse most closely resembled the fourth of the variants noted in 5.3.3, i.e., 'teacher talking to one or more pupils when others are not expected to listen' (Edwards and Furlong, op. cit., p. 15; summarised). This simple classification, however, masks its subtleties. Many are apparent in the excerpt. It begins with Jon pointing to a detail in a photograph of an Indian deity:

P28 Jon there's a cow

P29 T that's a bull that is / it's a bull

P30 Lana how come they all have a picture / an animal in each picture?

P31 T um / because / with every god there's always an animal associated with that god / OK / Vishnu rides on an eagle / Saraswati / I think she's normally seen sitting on a swan / and the swan actually is in there / it's not normally a peacock / uh / I / I find that surprising because Krishna is Vishnu / right / but it's interesting that there's cows in that

P32 Lana how come

P33 T but there / cows in India are holy

P34 Lana these are really small 'cos she's leaning on it

P35 T that's right / it's a he

P36 Lana oh / a he (*laughs*)

P37 T I know it looks like a she but it's a he

P38 Lana (*inaudible*)

P39 Mat do the Indian gods always wear long things ?

P40 T they've got very long hair and they look sort of / uh

- P41 Mat womanish
- P42 T yes they do look womanish / yes you're quite right / they all look womanish / yes / they look / feminine
- P43 Jo (*pointing to wall picture*) one of those could be a woman in those pictures
- P44 T well / it's probably what Indians think / looks / you know / looks good / looks beautiful / isn't it / it's probably what they imagine / right
- P45 Ady all the blue ones look like / um / womans / but they're men / but all the white ones
- P46 Jo oh / I understand / all the blue ones / all the blue-faced people are men / and all the others are ladies
- P47 T you're probably right / I hadn't thought of that before but you're probably right / shall we look at some of these photographs (*turning page*) / right

(Photo Album: Appendix 2.2.1)

In this, one sees the swift succession of speaking turns and near parity of their distribution between T (268, or 44%) and the children (335, 56%). The brevity of most turns is apparent, as is the fact that only T's break this rule, and then only occasionally: in the whole discourse, he has just four turns of more than 100 words.

T's utterances incorporate expository elements. In the excerpt above, for example, his '... with every god there's always an animal associated with that god / OK / Vishnu rides on an eagle / Saraswati / I think she's normally seen sitting on a swan ...' (P31) is richly informative. These elements, however, enter the discourse as responses to the children's utterances, many of which involve questions (87, or 27%). This most clearly shows this discourse's most prominent characteristic. The children play a substantial part in shaping it. It is a child who prompts the expository utterance noted above with her question: 'how come they all have a picture / an animal in each picture?' (P30). It is a child who, with his 'do the Indian

gods always wear long things ?' (P39), initiates the exchanges about the appearance of the gods and other children who sustain them with their comments, as in P43, 45 and 46.

Here, then, is a discourse which sees 'teacher talking to one or more pupils when others are not expected to listen' (Edwards and Furlong, *op. cit.*), but of a particular ilk. It is less teacher talking to the pupils than T and a group of children talking together, with their conversation shaped through the interplay of their individual concerns. This thrust is consistent with T's encouragement of child-initiated investigations that I had seen in the pilot phase (see 5.3.4) and with his stated intention for this discourse of arousing the children's interest in the topic in hand. One may assume that it is deliberate.

7.2.2.2 Saraswati Puja Demonstration

(Full transcript in Appendix 2.2.5)

I was not present for the second episode, nor were any of its discourses recorded. T, however, subsequently told me how other children looked at the photograph album with him, while those had already seen it drew and modelled what had caught their attention. With a further group of children, he had built a model of a shrine to Saraswati, the Goddess of Wisdom. The shrine provided the focal point for the third episode. For this, I was present. A single discourse, involving T and the whole class, formed its greater part. It provides the focus for this section.

The shrine was placed at the front of the room, backed by wall pictures of Indian deities. T sat to its right, with the children before him on the floor. In the discourse, he conducted them through a puja (a service of reverence) for Saraswati. This he did primarily by demonstration, but also through simulation, with the children

invited to participate. The following extract illustrates the rapidity of his movement between these modes. It begins with T referring to the water used for the demonstration:

S88 T now / I don't want you to drink this because it's got charcoal in it and all manner of other things and I'm not sure how clean this cup is / right / but what you can do is pretend to drink it / OK / what they do is you all receive some holy water in your hand (*demonstrates*) / and / you drink what you've got in your hand and then you wipe the rest on your forehead (*demonstrates*) / OK / right / right / OK / so if I drop some holy water in your hand / the way you have to hold it is like that (*shows*) / so can you (*children holding out hands*) cup your hands like that / just cup your hands like that (*children cupping hands*) you use your right hand / not your left / it must be your right hand / your right hand / that is / if you're looking this way (*turns to show*) / it's the hand that's over by those windows / that side / OK / OK / so you can pretend to drink / which is what they do (*shows*) / and then wipe it over your forehead / OK / are you ready / I'll give you some holy water (*putting water into children's hands*) / you can wipe the water on your forehead (*giving out water: some children stand to reach*) // just sit down / sit down and I'll get to all of you / sit down / sit down

S89 Chdn(whispering) ...

S90 T don't really drink it please / just

S91 Chdn(inaudible)

S92 T just wipe it on your forehead ...

(*children take water*)

S93 T and then just wipe it on your forehead / just once / that's all // do we have holy water in / in Christian religion?

S94 Chdn yes

S95 T yes we do / we do have holy water don't we / but it doesn't come from the Ganges (*giving out water*) / it comes / the priest has blessed it / Jo / you don't want any?

S96 Jo no

(Saraswati Puja Demonstration: Transcript. Appendix 2.2.5)

In the the demonstration, T showed how incense sticks were lit, how rice and holy

water featured in the offerings to Saraswati, how the sacred nature of the ceremony was symbolised by the sprinkling of holy water, how the priest touched first the statue's left eye, then the right, then her heart, and how this marked the point at which Saraswati and the statue became one. He showed how other deities were represented: Vishnu, Ganesh, Krishna. He showed how, at the end, the statue of Saraswati was cast into the river.

With momentary exceptions, the children sat in rapt attention. At various points, T drew them in. They joined in the chants. They cupped their hands to receive the holy water and pretended to drink. They sounded bells, softly. When, at the end of the simulation, T said that he would not throw the statue away, they softly cheered.

The discourse broadly matched the first of Edwards and Furlong's variants: 'teacher talking to silent audience, requiring everyone's attention' (op. cit., p. 15). It differed from it, however, in that the children were not silent. 51% of the speaking turns were theirs. These, however, were brief. None exceeded 10 words. Most were much shorter. Just six (or 8%) involved questions.

By contrast, many of T's turns were lengthy. Ten (15%) exceeded 100 words, and two more than 300. Whereas in the earlier discourse a high proportion of his turns were in response to the children's comments, in this the initiative was largely his throughout. The discourse lasted thirty-one minutes, about two-thirds of the time taken by the earlier, small-group activity. It involved 139 speaking turns, whereas the earlier activity had involved more than four times as many (603).

These differences reflected, not only the fact that different groupings were involved, but also the differing purposes T attached to them. In the first, he had wanted to recruit the children's commitment to the topic. In this, his primary concern was to convey a subject to them in rich detail, as in the following

assertions in the lengthy turn (S88) set out above: ‘... what they do is you all receive some holy water in your hand (*demonstrates*) / and / you drink what you’ve got in your hand and then you wipe the rest on your forehead ...’. Its form, in short, reflected its primary pedagogic function, which was expository.

7.2.2.3 Saraswati Puja Book

(Full transcript in Appendix 2.2.4)

This episode had much in common with the first. While most of the children, drew, painted or modelled, T worked at length with a sub-group of five pupils, none of whom had been involved in the Photo Album discourse. Thus a main feature of much of the episode was that it involved a number of concurrent discourses. On the one hand were those occurring spontaneously between little groups of children and the assistant, as they worked on their creations. On the other was the sustained dialogue between T and the sub-group. This latter I recorded.

Its focus was the book *Saraswati Puja* (Sauresh Ray, 1985), a non-fiction work illustrated with black and white photographs and written primarily for children to show how the puja was conducted and what it meant to those involved. As in the Photo Album discourse, T sat with the pupils, turning the pages and drawing attention to details of the pictures. He explained some of the symbolism associated with the goddess Saraswati, as in the book she held to represent learning. He told the children how the temple floor was cleaned and rice patterns were shaped on it. Relating it to Lent, he told them how the participants fasted in preparation for the ceremony.

The following excerpt is characteristic. Prompted by one of the illustrations, T and the children talk about how statues of Saraswati are made.

- S57 T and then they get clay and they wrap that around OK and then they cover that with cloth OK right so you get the statue you can see them doing that here right can you see them doing that here?
- S58 Serena oh
- S59 T they've got quite far with this statue OK quite far with this statue here
- S60 Leo have they done it?
- S61 T yes they they're making the support work right so this is a Saraswati statue there's lots of people around it OK when the when the figure's dried out again right then they wrap some more cloth around it OK right then they put on more clay right and when they've done that they make the head separately and they fix the head on top OK right head and the Saraswati statue's all ready for the festival right so then they've got to prepare OK so what they do then is they get a s... they get um a kind of a table type thing something to put the statue on OK something something
- S62 Ady how do they get the head on?
- S63 T I think they probably just get the head and they fix it on then they pour clay around the sides right to actually make it
- S64 Serena yeh that's how we build our clay up

(Saraswati Puja Book: Transcript. Appendix 2.2.4)

It is a further example of Edwards and Furlong's discourse variant, 'teacher talking to one or more pupils when others are not expected to listen' (op. cit.). As in Photo Album, however, the children in the small group are not silent. They make connections, as in Serena's 'yeh that's how we build our clay up' (S64, above). They, far more than T, raise questions, as in Ady's 'how do they get the head on?' (S62). T responds, at times at length, as in S61. 9% of his turns exceed 100 words. In this respect, this discussion differed from the Photo Album discourse, in which just 1% were of this length. It reflects a heightening of the expository function, for almost all of T's longer turns in this later discourse involve informing the children about the puja. Alongside this, however, is a continuing effort to sustain the children's involvement, as exemplified by T's '... you can see them doing that here

right can you see them doing that here?’ (S57) in the excerpt above.

Apart from this higher proportion of lengthy turns by T, the formal similarity of this discourse to the earlier one is striking. In function, it resembles it too, for it further recruits the children’s interest in the puja rites by introducing them to more of its rich details.

7.2.2.4 First reflective discourse

(Transcript in Appendix 2.2.2)

This involved T and 6 of the children, four of whom had participated in the earlier Photo Album discourse. Lasting 44 minutes, it ranged over a variety of issues raised in this project and in earlier ones in which the children had been involved. They included the significance of myths in general, the similarities between Greek and Hindu myths they had encountered, the powers of the Hindu deities, reincarnation, distinctions between Christian and Hindu beliefs, the problems of believing in claims to deity and, as will be seen in the excerpt below, whether a person named Jesus had actually existed.

The discourse had many noteworthy formal characteristics. The statistical evidence for this claim is given in 7.2.2.6. Here I outline those relevant to a brief description of the discourse.

First, turns were shared roughly equally between T and the children, relatively rapid and, for the most part, short. Second, all the lengthier ones were T’s. Even of these, only a small proportion ran to more than 100 words. Third, in relation to the preceding discourses, a high proportion of the turns involved questions. Fourth, of these, almost all were T’s. Fifth, of T’s turns, questions accounted for almost half.

The following excerpt from the discourse illustrates these characteristics. It also serves as a focus for a brief qualitative description.

M493 T ... what I'm saying is the Hindus believe in one god / as well / and yet we still call these stories myths / and yet / and yet you don't call the Mary and Joseph story / well you don't want to call the Mary and Joseph story a myth / I myself / I myself possibly would call it a myth / right / but it's really / it's worth thinking / it's a very good question / it's a very good question to think about / but what about Jesus's life / d'you think that's a myth?

M494 Rach no

M495 Lana sort of

M496 T sort of / yes / what d'you mean by sort of?

M497 Lana {because / because some people think

M498 Rach {a little bit ...

M499 T a little bit / it's interesting that you say a little / why?

M500 Lana some people think that it's a myth and some people don't

M501 T yes / that is true / some people do / that's quite right / are you saying that if you believe it's a myth / then you believe it never happened? / it's not really true / is that what you're saying?

M502 Lana no / they believe it happened / but / it's not a myth

M503 T so if you believe it actually happened / then it's not a myth / is that right? / is that what you're saying? / is that what you believe? / is that what you think?

M504 Chdn yes

M505 T right / OK / yes / I mean / there is actually good evidence to say that Jesus really was a man / I mean there was a man called Jesus who lived at that time and who said some of the things that are in the Bible and there was a man who was crucified / right / on the cross / right / so we know that actually really happened to somebody

(First Reflective Discourse: Transcript. Appendix 2.2.2)

Of the discourse's features, three are particularly important. One involves the thrust of T's questions, as in: 'but what about Jesus's life / d'you think that's a myth?'

(M493); ‘sort of / yes / what d’you mean by sort of?’ (M496); ‘are you saying that if you believe it’s a myth / then you believe it never happened?’ (M501). Such questions, which occur mainly in the shorter turns noted above, abound throughout. They require the children to define their meanings, to make fine distinctions and to see their logical consequences. They invite disciplined reflection, steered by T’s awareness of the issues. It is this continuing impulse for guided reflection that leads me to attribute the descriptor ‘reflective’ to this discourse.

The second is that this Socratic probing is from time to time complemented by lengthier contributions by T, in which he supplies information hitherto unlikely to be available to the children. His assertion of, and subsequent enlargement on, the proposition that ‘there is actually good evidence to say that Jesus really was a man’ (M505) is an example. Alongside the reflective thrust of the discourse, therefore, is an expository element. It is, however, the minor element within the larger theme.

The third is that, in contrast to the earlier small group discussions, the initiative throughout was with T. His questions press the children to reflect on the topic. They also ensure that they focus on the aspects of it he determines.

7.2.2.5 Second reflective discourse

(Transcript in Appendix 2.2.3)

This took place four days after the first reflective discourse described in 7.7.7.4 (above). Like the earlier one, it involved T and the same group of 6 children. Its immediate focus was a set of statements drawn up from earlier discussions. These ranged from ‘Indian people believe in one god, but they have many gods which

are part of the same god' to 'Vishnu lived on earth many times' and 'Myths have wicked people in them and myths tell us not to be like those wicked people.' T had provided the children with copies, with spaces for their comments.

The excerpt below is characteristic of this discourse. It begins with T drawing the children's attention to one of the statements:

R122 T ... now the last (10.30) one / I think it's very interesting as well that you've got here / right

R123 Alan (*reading*) 'myths are not'

R124 T 'myths are not true' you say / 'myths are not true' / what d'you mean by that? / 'myths are not true'?

R125 Rach because we don't believe in them

R126 T do you mean that? / you don't believe they happened?

R127 Rach yes

R128 T is that what you mean?

R129 Rach {yes

R130 Lana {yes

R131 Rach they don't believe in our god / and we don't believe in their god

R132 T you mean something like / they don't believe in our god / and we don't believe in their god / is that what you're saying?

R133 Rach yes

R134 T is that what / that's what you mean by that / and you believe that the stories / that tell you all the things that happened in those things / you think that a myth is not true / it can't be true / right / OK / is there something / um /

R135 Lana (inaudible)

R136 T well what is it about myths that gives you the idea that they're not true / straight away / I mean / is there something that tells you that they can't be true?

R137 Ady because it hasn't happened to us

R138 T it hasn't happened to us / yes / that's an interesting idea / yes

you don't expect all these magical things to start happening do
you

R139 Ady no

R140 Lana in case Vishnu / if they believe in that / Vishnu might come
down to here / and they think he's coming down to here but
they don't / we don't believe that

R141 T we don't believe that / but d'you think the Indians believe that
Vishnu will come down again?

R142 Lana yes

(Reflecting on Myths 2: Transcript. Appendix.2.2.3)

As in the previous discourse, the turns are in the main brief, follow one another rapidly and are distributed roughly equally between T and the children. Many questions are asked, all by T. He asks the children for explanations: 'myths are not true' you say / 'myths are not true' / what d'you mean by that?. He invites them to confirm his interpretations of what they say: 'do you mean that? / you don't believe they happened?'. He encourages them to offer reasons: 'well what is it about myths that gives you the idea that they're not true / straight away / I mean / is there something that tells you that they can't be true?'. He invites them to think about other people's beliefs: 'we don't believe that / but d'you think the Indians believe that Vishnu will come down again?'. The children's answers are brief. Invited to confirm that they believe myths didn't happen, Rachel and Lana say 'yes'. In less frequent lengthy turns, they articulate other people's beliefs about their own ideas and their own about others': 'they don't believe in our god / and we don't believe in their god' (Rachel: R131).

T's questions shape the discourse, but spring from and build on the children's responses. As in the earlier discourse, their thrust invites the children to clarify their ideas and to relate them one to another. It is this that leads me to categorise and entitle the discourse as 'reflective'. This is not to say that it is without exposition. This is visible, for example, in T's development of an assertion by one of the

children about the fate of Orpheus ('It broke his heart' (Alan, R61); 'that's right / d'you know we have a special word for that? / we have a special word for that / we call that a tragedy / it's called a tragedy / right / a tragedy / OK / and the Greeks / the Greeks really liked making up tragic plays.' (R62) (both Appendix 2.2.3). It is the reflective pressure, nonetheless, engendered by its Socratic questioning, that is predominant.

7.2.2.6 Statistical analysis

An aim of this study was to consider whether T's commentaries varied according to the nature of the discourse involved. I originally intended to examine his commentaries, first discourse by discourse and then in relation to the five discourses as a totality. An initial perusal of the transcripts, however, suggested that grouping would afford greater reliability.

The most obvious potential dividing line was between the single discourse involving T and the whole class and the other four, each of which involved T and small groups of children. More subtle differences, however, seemed to be visible. To test this, I examined the discourses in the light of four statistical measures. These involved the distribution of turns between T and the children, the rapidity of turn-taking, the proportion of turns of more than 100 words and the proportion and distribution of questions. The outcomes are presented in tabular form in the appendices.

With regard to the first of the measures, four matters are apparent from Table 1 (see Appendix 3.1). First, none of the discourses involve T as the sole speaker (columns 2 and 3). In this respect, none of the descriptions of discourse variants offered Edwards and Furlong (1981, p. 15: summarised in 5.3.3, above) was adequate as it stood. At the very least, a degree of elaboration was essential. Second, in all the

discourses T is consistently involved in fewer turns than the children (columns 2 and 3). Second, the differences involved, both for the individual discourses and for the discourses in total, are small (same columns). Third, the proportions differ little between discourses (columns 5 and 6). In the light of this evidence, one might reasonably suggest that the similarity between these discourses, at least with regard to the distribution of turns, is marked. While I have not pursued the matter further, it might further be suggested that the limited variation between the discourses is consistent with the pivotal role T takes in all of them.

Table 2 (Appendix 3.1) shows how the discourses differ in length (Column 2), with the two longest (Photo Album and Reflection 1) being more than twice as long as the shortest (Saraswati Demonstration). This is unremarkable. Potentially significant differences may be seen, however, in the speed of turn-taking (column 4). Where turns per minute is the measure, the rate for the Saraswati Demonstration is less than half of three of the other four discourses and little more than half of that of the fourth. This suggests that the Saraswati Demonstration discourse differs significantly from the others.

Table 3 (Appendix 3.1) indicates one reason for this difference. In all the discourses, only T has turns of 100 words or more (Columns 2 and 3). In the Saraswati Demonstration discourse, 15% of his turns fall into this category (Column 4). Only in the Saraswati Book discourse does the proportion of lengthy turns remotely approach this. Even in this, the proportion is just 9%. In the others, the proportion is much smaller. This difference marks the Saraswati Demonstration discourse out from the others.

While in Table 3 the proportion of turns involving more than 100 words places the Saraswati Demonstration discourse in a category of its own, Table 4 (Appendix 3.1) points to patterns of difference and similarity between the other four. First, they vary in their distribution of questions between T and the children. Two

measures make this clear: the proportion of questions asked by T and the children respectively (Columns 4 and 5); and the proportion of turns by T and the children respectively that take the form of questions (Columns 6 and 7). On both counts, the Photo Album and the Saraswati Book discourses on the one hand and the Reflection 1 and Reflection 2 discourses on the other differ markedly. For the first two, it is primarily the children who ask the questions. For the other two, Reflection 1 and Reflection 2, the questions are overwhelmingly T's. This suggests that the discourse forms differ.

Second, within the same table, Columns 2 to 7 suggest that there are marked similarities between the Photo Album and the Saraswati Book discourses on the one hand and between the two Reflection discourses on the other. Between these two pairs, however, there are marked differences. Between the Photo Album and the Saraswati Book discourses, the distribution of the questions between T and the children does not differ greatly. In both, and on all measures, the children's questions greatly exceed T's. For the two Reflection discourses, the distribution is almost identical, but totally different from that for the first pair. Columns 6 and 7 make this even more clear. For the first pair, the percentages of turns as questions are much alike. For the two Reflective discourses, they are identical (but, again, quite different from the first pair). The questions are overwhelmingly T's. The remaining discourse, involving the Saraswati Puja Demonstration, stands out from the others in two ways. First, far fewer questions are involved (see Columns 2 and 3). Second, while those of the children exceed T's, they do so by a markedly smaller proportion than in the Photo Album and Saraswati Book discourses.

7.2.2.7 Three discourse variants

Taken together, the qualitative and statistical evidence considered above suggests the five discourses may be seen to represent three variants, each distinctive in form

and pedagogical function. I propose as titles for them ‘small group expository’, ‘whole class expository’ and ‘small group reflective’.

The first is seen in the Photo Album and the Saraswati Book discourses. It is *small group* in that, in both instances, T works with sub-groups of 5 or 6 children, rather than the whole class. It is *expository* in that T’s contributions in both instances serve to offer a range of information about the focus of the project to the children in a manner that allows them to grasp its significance. This primary function is overlaid, however, with a second element, not noted in the category title. This I see as solicitous, in the sense that the activity is intended to recruit the children’s interest in and commitment to the topic. In form, it is characterised especially by the relatively large number of questions asked and the marked predominance within them of the children’s questions over T’s.

The second is seen in the Saraswati Puja Demonstration discourse. It is *whole class* in that all the children are involved. It is *expository* in that T’s primary purpose is to provide the children with a rich array in information about the conduct of a particular Hindu religious ceremony. In form, it is characterised especially by the relatively high proportion of lengthy turns by T.

The third is seen in the Reflective discourses. Like the Photo Album and Saraswati Book discourses, it involves *small group* activity. It is *reflective* in that, in both instances, T’s questions press the children to think more deeply about the topic under consideration. In form, the variant is characterised especially by the high proportion of turns that involve questions and by the fact that these are overwhelmingly T’s.

From a functional perspective, the allocation of the individual discourses to these types is not a matter of absolutes. All incorporate expository elements. In three, this is the dominant concern, but other functions are visible. Only the reflective

function appears to be confined to particular discourses. In spite of such overlaps, the distinctions appear to be robust enough for the purposes of this study.

7.3 ANALYSIS OF T'S COMMENTARIES: OUTCOMES

7.3.1 Introduction

How T's commentaries on the discourses were analysed is presented in Chapter. 6. In the rest of this chapter, I present the numerical outcomes and draw attention to their main features. Their significance is considered in Chapter 8.

What follows is presented in two broad stages. The first relates to Level 1 of my category system. It involves the division of the total body of the units of meaning involved in all T's commentaries into seven subcategories, as set out in 6.6.2.2. Thus it embraces all of T's thinking on action that I noted. The second relates solely to the detailed consideration given to just one of these subcategories, *acknowledging child/children*. Thus it involves Levels 2 to 7 of the category system, as set out in Fig. 2 (see Appendix 2.1.1).

I refer frequently to tables of analysed data. These are systematically placed in the appendices and referenced for the reader's convenience.

In what follows, I frequently employ the term 'comment', rather than the more technical 'unit of meaning'. This departs from normal usage, in which a 'comment' may involve more than one unit of meaning. The shift is intended to make the reader's task easier.

7.3.2 Results of analysis of commentaries seen as a totality

7.3.2.1 Level 1: Thinking on action: all units of meaning subcategorised

This section focuses on the totality of T's comments and their division into the seven categories of Level 1. It presents this categorisation first on a discourse by discourse basis and with the picture that emerges for T's comments seen as a whole. Then, still with the whole body in mind, it deals with the commentaries in relation to the three discourse types identified in 7.2.2.6.

For the reader's convenience, I set out the seven categories below, together with the abbreviations used to tag the individual items:

<i>providing background detail</i>	<i>pbd</i>
<i>identifying discourse focus</i>	<i>idf</i>
<i>indicating shared experience</i>	<i>ise</i>
<i>rehearsing knowledge of field</i>	<i>rkf</i>
<i>seeking chd-chdn's perception</i>	<i>scp</i>
<i>acknowledging chd-chdn</i>	<i>acc</i>
<i>commentary on teaching direction</i>	<i>ctd</i>

Table 5 (see Appendix 3.2.1) summarises the outcomes of the first part of this analysis. It shows the distribution of these units, first discourse by discourse, then in total and, finally, as percentages of the total.

Four things are apparent. First, the number of units identified for analysis (946) is substantial. Second, in total, those units which involve T's acknowledgments of the children (*acc*) and comments on the direction of his teaching (*ctd*) together comprise a high proportion (86%: columns 6 and 7 combined) of the total body of units identified. Third, again in total, the proportions relating to acknowledgments

of the children (41%: column 6) and the direction of teaching (45%: column 7), differ little. Fourth, this predominance of the acknowledgments of the children and comments on the direction of teaching (columns 6 and 7) is apparent in relation to each of the discourses as well as to their totality.

Beyond this, only those units which involve T's rehearsal of his knowledge of the field (9%: column 3) feature markedly. Indications of shared experience (3%: column 4) are less prominent. Other categories feature only minimally.

Table 6 (Appendix 3.2.1) summarises the second part of the analysis of the data at this level. It involves T's comments in relation to the three discourse types, as distinct from the individual discourses or their totality. Since the figures involved are based on the data used for Table 5, there is nothing in this latter table to occasion surprise. Nonetheless, three things stand out. First, for each discourse type, comments about the children (*acc*: column 6) and the direction of teaching (*ctd*: column 7) predominate. Second, with regard to these two categories, the proportions for small group expository (41% and 40% respectively) and for small group reflective activity (42% and 44%) are closely similar. Third, while the proportions for the whole class expository discourse type (35% and 55% respectively) are rather different, they do nothing to countermand the predominance of these concerns.

7.3.2.2 Level 2: Acknowledging child-children: *observations* and *inferences*

From this level onwards, I focus solely on the 387 units categorised as acknowledging child/children (*acc*). I have outlined in 6.6.2.3 how I came to see that the distinctions initially made between observations, inferences and evaluations disappeared once I looked at individual units of meaning in their wider context. The consequence of this development was that I came to see all the units

involved as inferences. I retained the distinction within my categorical framework and the level of analysis at which it was depicted solely because it represented an important stage in the development of the system. For practical purposes, once I had satisfied myself that none of the items involved had to be regarded as pure observation, it was possible to proceed directly to Level 3 of the category system.

7.3.2.3 Level 3: *inferences* subcategorised

Table 7 (Appendix 3.2.2) shows the outcomes of my subdivision of T's inferences about the children into those involving thinking and those involving feeling. As at Level 1 (and, by implication, Level 2), this is done firstly by each of the three discourse types, then as a whole.

Three things stand out. First, in both types of small group discourse activity, comments about the children's thinking greatly exceed those about feeling (columns 1 and 2). Second, between the two types of small group discourse, the proportions of thinking-related and feeling-related comments are closely alike (86% to 14% and 88% to 12% respectively). Third, in the whole class expository discourse, the position is reversed. Comments about feeling exceed those about thinking, even if not greatly (55% to 45%: columns 2 and 1).

7.3.2.4 Level 4: *thinking* and *feeling* subcategorised

Table 8 (Appendix 3.2.3) shows my subcategorisation of T's comments on the children's thinking as *constructs*, *processes*, *states* and *characteristics*. As at earlier levels of the analysis, this is first done by each of the three discourse types, then as a whole. Caution is needed in dealing with similarities and differences between the variants, for the number of units that relate to the whole class expository activity in particular is small.

Nonetheless, three things are noteworthy. One involves T's concern for the children's thinking processes. The proportions of his comments on this fall between 33% in relation to the whole class expository work and 41% in relation to the small group expository activity (see column 2). The concern is thus prominent and consistent across all the discourse variants. A second relates to his concern for the ways in which the children conceive of the project subject matter, that is to say, for their *constructs*. Here the position differs. For both the small group and the whole class expository discourses, the proportions are low (9% and 10% respectively: column 2). By contrast, for the small group reflective discourse, 36% of the comments relate to this concern. The third relates to his comments about the children's characteristic ways of thinking (column 4). Whereas they are prominent in relation to the expository discourses, they make up just 8% of his reflective discourse comments.

Table 9 (Appendix 3.2.3) shows the outcomes of my subcategorisation of T's comments on the children's feeling in terms of *interest, perplexity, resilience, respect, want* and *engagement*. Again the numbers of units identified are small. Generalisations must be regarded with caution.

Some trends stand out, nonetheless. In each discourse variant, T's attention to the children's interest in and engagement with the topic matter is consistently high. Overall, they account for two thirds of his comments (columns 1 and 6). In relation to the whole-class expository discourse, 77% of his comments have these matters as their focus. In relation to the small group expository variant, they account for 71%. Finally, inferences about the children's perplexity feature prominently in the comments related to the small-group reflective activity (31%: column 2), a proportion markedly higher than for the other variants.

7.3.2.5 Level 5: Subcategorisation of *constructs, processes, states* and *characteristics*

The number of feeling-related units identified at Level 4 was small. No further subcategorisation was undertaken at Level 5. Hence this section focuses on the further subcategorisation of the elements of the thinking-related units identified at Level 4: *constructs, processes, states* and *characteristics*. Each is considered separately.

With regard to *constructs*, Table 10 (Appendix 3.2.4) shows that, in all the discourse variants, T is overwhelmingly interested in the children's conceptions of the topic under consideration. Only in the small group reflective discourse is a further concern apparent. In ch. 8 I shall briefly consider whether these priorities are a consequence of the categories themselves.

With regard to the *processes of thinking* (see Table 11, Appendix 3.2.4), it is those I identify as *generating* (column 1) that dominate T's concerns. As with the *seeing as* subcategory, the possibility of a categorising effect will be briefly considered in the next chapter. Beyond this are two further subcategories that occur in significant proportions. In relation to the small group expository discourse, *searching* accounts for 14% of the units. For the small group reflective activity, *focusing* and *agreeing* each account for 15% of T's comments. For the whole class expository discourse, *agreeing* makes up 14% of the units. Since only one item is involved, however, its significance is unclear.

The numbers of units involved in the subcategorisation of thinking *states*, the focus of Table 12 (Appendix 3.2.4), are relatively small overall and especially so in relation to the whole class expository discourse. In consequence, it is just the figures for the two small group discourse variants that warrant attention. Here the contrast between T's concerns is noteworthy. For the expository variant, units

involving references to the children's *knowledge* dominate. For the reflective activity, a concern for the children's *understanding* overwhelmingly prevails.

Similar reservations about small numbers must be made about Table 13 (Appendix 3.2.4), which deals with the subcategorisation of T's comments on the *characteristics* of the children's thinking. One can note, nonetheless, how his predominant concern for the *style* of their thinking in relation to the small group expository discourse is replaced by a commensurate concern for their mental *capacity* in the reflective activity.

7.3.2.6 Level 6: Subcategorisation of *thinking*: evaluative

The remaining levels of subcategorisation generate ever smaller groupings. For this reason, except for the totals for each table, I attend solely to raw numbers. My concern to highlight potentially significant trends, however, remains. For clarity, my format for presenting the analysed data changes, in that I first set out the results in relation to the individual discourse variants before proceeding to consider any similarities and differences between variants. The first part of this change is visible in Table 14 (Appendix 3.2.5), which sets out T's comments in terms of their evaluative significance in relation to the small group expository discourse. The second variant is then dealt with in Table 15 (Appendix 3.2.5), and so on.

The most obvious feature revealed by Table 14 is the predominance of *negative* and *positive evaluations* (41% and 40% respectively overall: columns 2 and 3). Beyond this is the number of negative evaluations of the children's thinking style (11: column 2).

With regard to the thinking related units for the whole class expository discourse at Level 6 (Table 15, Appendix 3.2.5), it is the high proportion (81%: column 3) of

positive evaluations overall that stands out. In spite of the small numbers involved for each subcategory, the trend appears to be consistent. At the same time, small though the instances are, 3 of the 4 negative evaluations involve judgments about the children's thinking capacities (column 2).

With regard to the thinking related units for the small group reflective discourse at Level 6 (Table 16, Appendix 3.2.5), it is again the high proportion of positive evaluations that stands out (58%: column 3). Such evaluations exceed the negative by more than three to one (58% to 19%: columns 3 and 2). Lower in proportion, but, in view of the number of items involved (22), possibly of significance, are the items that involve connoisseurship (10%: column 4).

Table 17 (Appendix 3.2.5) relates the kinds of T's thinking-related evaluations to one another overall on the basis of the three discourse variants. A number of points invite attention. Several involve the negative and positive evaluations. First, together these account for 80% of T's comments overall (columns 2 and 3). Second, their relative proportions vary markedly between the discourse variants. Whereas they are evenly distributed between negative and positive for the small group expository activity, positive evaluations outweigh negative by more than threefold for the small group reflective activity (columns 2 and 3). Third, the raw numbers involved are large enough to suggest that these contrasts are not matters of chance.

While smaller in proportion, other clusters invite attention. First, in both small group variants, connoisseurial evaluations are apparent in what might be significant degree (7% for the expository kind, 10% for the reflective). By contrast, they do not occur at all in relation to the whole class expository discourse. Second, instances of T's consciousness of his occasional failed interpretations are also associated with the two small group discourses, but are absent from the whole class expository activity (see column 5). Both the numbers and their proportions invite

explanation. Finally, the proportion of unevaluated comments is consistently low across all three discourse variants.

7.3.2.7 Level 6: Further subcategorisation of *feeling*: evaluative

The format for my further consideration of the feeling-related units follows that used above for the comments on thinking. Their smaller numbers require the material to be approached with yet greater caution. The tables throughout refer to ‘Level (4)5 units’ as the data for subcategorisation. The presence of the bracketed digit acknowledges the fact that, unlike the thinking-related material, what had been done with the Level 4 material was simply carried forward to Level 5 without further subdivision.

Table 18 (Appendix 3.2.6) deals with the small group expository discourse variant. Even from the small number of units involved (just 14), T’s tendency to comment positively on matters of feeling is evident (see column 3). So, too, is the fact that more than half of these relate to interest. Of the other kinds of evaluative comments, only those which involve connoisseurship feature.

Table 19 (Appendix 3.2.6) deals with the feeling-oriented units that relate to the whole class expository discourse variant. Again, positive evaluations feature highly (73%: column 3). Once again, *interest* is prominent among them. The positive comments for this subcategory, however, are surpassed by the *engagement* items. This time, negative evaluations appear, but still at roughly one quarter of the rate of the positive (column 2). Connoisseurship is also in evidence, albeit in just two instances.

Table 20 (Appendix 3.2.6) deals with the small group reflective discourse variant. Again the numbers involved are small. Nonetheless, some appear in potentially

telling quantity. Thus 15 of the items (just over half) involve positive evaluations (see column 3). Of these, 11 relate to the *interest* and *engagement* subcategories. Negative evaluations, at 31%, are also common. 4 items, 14% of the total, involve connoisseurship.

Table 21 (Appendix 3.2.6) relates the kinds of T's feeling-related evaluations to one another overall on the basis of the three discourse variants. Several matters invite note. Few of T's comments involve failed interpretations (column 5). None lacks an evaluative stance (column 1). Negative evaluations of feelings are absent from his comments on the small group expository discourse, but account for almost a fifth in relation to the whole class expository activity and almost a third of the comments on the small group reflective discourse (column 2). By contrast, the greatest occurrence of positive evaluations is associated with the small group expository activity (86%: column 3) and the smallest with the small group reflective discourse (52%). Finally, indications of connoisseurship occur in relation to all of the variants, but in greatest proportion in the two small group activities (both 14%: column 5). Throughout, however, the numbers involved are small.

7.3.2.8 Level 7: Further subcategorisation of *thinking*: *single* and *group*

This section and the next deal with the final level of categorisation: the subdivision of the units into those referring to the children as individuals and those which involve groups. Its presence stems from my early concern for whether teachers' formative judgments in ordinary practice relate in the main to individuals or to groups.

Here I focus on T's thinking-related comments. The format of the tables matches that for Level 6, except that the numerical data are presented in pairs, the first element of which shows totals for comments on individuals and the second totals

for groups. The relatively low numbers involved lead me to use percentages only for the overall totals for each evaluative category. For example, from column 3 of Table 22 (Appendix 3.2.7), it may be seen that 32% of the positively-evaluated thinking-related units relate to individual children and 68% to groups.

Table 22 deals solely with comments on the small group expository discourse variant. Four matters are of note. First, overall, *group* comments exceed *single* by 60% to 40% (column 6). Second, this dominance holds for three out of five of the evaluative categories. Of the others, *failed interpretations* split equally between *group* and *single*. Connoisseurial judgments alone tend to relate to individuals (all columns 1 to 5: bottom line). Third, similar *group* dominance, or at least equality with *single*, is apparent for the individual subcategories of thinking (column 6). Finally, only *searching* and *style* offer exceptions. In the latter, the balance of 13 *single* references to 1 for *group* marks it out (column 6).

Table 23 (Appendix 3.2.7) deals similarly with the whole class expository discourse variant. Again, an overall preponderance of group comments is apparent (67%: column 6). The total number of units involved (21), however, is small. Apart from the 5 capacity-related group comments (column 6), there may be little in this table's finer details that can be viewed as significant.

Table 24 (Appendix 3.2.7) deals with the small group reflective discourse variant. The total number of units involved (211) is markedly greater. More substance may be attached to both the figures and their proportionate occurrences. The picture is complex. Group-related comments predominate overall, but not by much (52% to 48%: column 6). In two of the three most frequently occurring subcategories of thinking, comments on individuals markedly exceed those on groups (*seeing as*, by 45 to 26; *generating*, by 25 to 21: both column 6). Only in the third is the position reversed: for *understanding*, *group* comments exceed *single* by 26 to 12 (column 6). Of the less frequently noted evaluative comments, those involving

connoisseurship, those that on individuals occur almost twice as often as those on groups (64% to 36%: column 4). Failed interpretations relate even more strongly to individuals (72%: column 5).

Table 25 (Appendix 3.2.7) summarises the Level 7 subcategorisation of T's thinking-related evaluations in the light of whether it involves individual children or groups. It is presented on the basis of the three discourse variants. The number of units related to the whole class expository discourse variant is small (21: column 6). By contrast, there are more than four times as many for the small group expository variant (86) and ten times as many for the small group reflective (211). For comparative purposes, attention is therefore best focused on the latter two. About these, four matters are noteworthy. First, the overall balance of units categorised shifts from 40% *single* and 60% *group* for the expository variant to 48% *single* and 52% *group* for the reflective type. In sum, single and group-related comments feature substantially in both variants, but the predominance of group-related comments associated with the expository type disappears with the reflective variant (see column 6). Second, while in both cases the *group* comments remain dominant, a similar shift is visible in relation to the two most numerous evaluated categories, namely those evaluated negative and those evaluated positive. Third, with regard to the connoisseurship-related units, comments on individual children predominate for each of the discourse variants (column 5). Fourth, the proportion of failed interpretations shifts strongly towards individually-related comments in association with the reflective variant.

Finally, some matters should be noted about the overall totals for these thinking-related units. First, those which focus on the group exceed those which relate to individual children by 55% to 45% (column 6). Second, of the two evaluated subcategories which generate the bulk of the comments, i.e., *evaluated negative* and *evaluated positive*, in both cases the proportions for group-related comments exceed those for single by the same ratio: 59% to 41% (columns 2 and 3). Both

subcategories, it should be further noted, relate to large numbers of instances. The trend is likely to be significant. Third, with regard to the one other evaluated subcategory, *evaluated connoisseur*, the tendency is in the opposite direction. Individual-related comments exceed group-related ones by 64% to 36% (column 4). Although smaller, the numbers of instances involved are not so low as to render the generalisation insignificant. The same point may be made about the instances categorised as *failed interpretations*. The numbers involved equal those for the evaluated connoisseur items and are distributed in identical proportions.

7.3.2.9 Level 7: Further subcategorisation of *feeling: single and group*

This section focuses on the final level of the subcategorisation of T's feeling-related comments, i.e., with their subdivision into units involving references to individuals and to groups. Throughout, what is subcategorised is T's comments at the evaluated level (Level 6). Here, fewer units are involved than at any prior stage of my analysis. Generalisations must be viewed with particular caution. In this spirit, I shall deal mainly in raw numbers lest percentages lend my analysis unfounded solidity, and offer the tables which follow in part for the sake of completeness.

Table 26 (Appendix 3.2.8) deals with the small group expository discourse variant. In spite of the small numbers involved, two matters stand out. Of the 14 units overall, 12 involve positive evaluations (column 3). Of these, 10 relate to groups and just 2 to individual children.

Table 27 (Appendix 3.2.8) deals with the whole class expository variant. The number of units involved is larger than that for the small group variant, but still small overall. Four matters are noteworthy. Of the overall total of 26 units, 19 involve positive comments on the children's feelings (column 3). Of these 19, 17 refer to the interest or engagement subcategories. Of these 17, all involve

comments on groups, not individuals. Finally, by contrast, all 5 negative evaluations focus on the feelings of individual children.

Table 28 (Appendix 3.2.8) deals with the small group reflective discourse variant. Four matters are noted. First, group-related comments predominate overall (by 19 to 10: column 6). Second, this preponderance is maintained for two of the three most commented on subcategories, *interest* and *engagement*, but only by a margin of 1 in each case. Third, for one further frequently occurring category, *perplexity*, comments on groups outnumber those on individuals by 8 to 1. Fourth, of the 9 perplexity-related comments overall, 6 involve negative evaluations of the children's feelings.

Table 29 (Appendix 3.2.8) summarises the outcomes of the Level 7 subcategorisation of T's feeling-related evaluations in the light of whether they refer to individual children or to groups. The details are presented on the basis of the three discourse variants. Percentages are added sparingly to avoid attributing unwarranted significance to some of the numbers involved.

Three matters are notable. First, group-related feeling comments exceed single by 74% to 26% (column 6). Second, this orientation is maintained in relation to the positive evaluations (which make up two thirds of the feeling comments), even if not to quite the same degree (column 3). Third, for both the *evaluated negative* and the *evaluated connoisseur* subcategories, an exact balance is apparent. The numbers involved, however, are small.

The small numbers involved require comparisons between the variants to be advanced tentatively. Thus the dominance of group-oriented comments, although still apparent, is less marked for the small group reflective variant (column 6). A similar trend is apparent with respect to the *evaluated positive* items. Beyond this, comparisons are probably spurious.

7.3.3 Level 7: Summary table: *thinking* and *feeling*

Table 30 (Appendix 3.2.9) summarises the analyses for both *thinking* and *feeling*, with particular regard to the distribution of the single and group-related comments and their relationship to the evaluated subcategories. Where the numbers involved are especially low, I leave them in raw form.

Four matters are of note. One is the predominance overall of units which involve references to groups, as opposed to children as individuals (column 6). A second is that this predominance reflects the trends evident for the main subcategories of evaluation noted, i.e., evaluated negative and evaluated positive (columns 2 and 3). Third, while relatively small in the numbers involved, one mode of evaluation reveals an opposite trend: connoisseurship appears to relate predominantly to individuals.

7.4 COMMENTARIES: SUMMARY OF ANALYSIS OF UNITS OF MEANING

Here I summarise what I see as the main points that arise from my analysis of the total body of the units of meaning identified in T's commentaries on the video-recordings of project discourses. For each point, I identify the section of this chapter on which it is based.

- 387, or 41%, of the total body of the units involve acknowledgments of the children (my category: *acknowledging child/children - acc*) (7.3.2.1).
- Of these *acc* units, 42% overall involve individual children and 58% groups (7.3.2.10).
- Of these *acc* units, 82% overall involve inferences about the children's

thinking and 18% their feeling (7.3.2.3).

- Thinking-related inferences greatly exceed feeling-related in both variants of small group discourse. In both, moreover, the relative proportions of thinking and feeling-related inferences are closely alike (7.3.2.3).
- By contrast, in relation to the whole class expository variant, inferences about feeling exceed those about thinking (7.3.2.3).
- Inferences about the children's thinking processes feature at a consistently high level in relation to each of the three discourse variants (7.3.2.4).
- Inferences about their constructs are much more prominent in relation to the reflective discourse variant than in relation to both expository types (7.3.2.4).
- A predominance of inferences about children's knowledge in relation to the small group expository discourse is replaced in relation to the corresponding reflective discourse by an overwhelming weight of references to their understanding (7.2.3.5).
- A predominance of inferences in relation to the small group expository discourse about children's thinking style is replaced by an equal weight of references in relation to the corresponding reflective discourse to their thinking capacity (7.2.3.5).
- Inferences that involve negative or positive evaluations make up 80% of the references to children's thinking. Whereas these inferences are evenly split between negative and positive in relation to the small group expository discourse variant, in relation to the corresponding reflective type, the positive exceed the negative by about three to one (7.3.2.6).

- Feeling-related inferences are dominated in all the discourse variants by references to the children's interest in and engagement with the topic in hand. These subcategories of *interest* and *engagement* are proportionately more highly represented in the two expository discourse variants (7.3.2.4).
- A third subcategory of feeling, *perplexity*, features prominently in relation to the small group reflective discourse in particular (7.3.2.4).
- Overall, inferences about the children's feelings predominantly involve positive evaluations. However, whereas none of the small group expository-related units involve negative inferences, 31% of the corresponding reflective discourse-related examples are of this kind (7.3.2.7).
- Alongside the predominant negative and positive evaluative inferences are those which speak of connoisseurship. Proportionately rarer, they nonetheless occur in sufficient numbers in relation to both thinking and feeling to suggest that they may be of significance. Unlike other evaluative inferences, they relate overall more to individual children than to groups (7.3.2.10).

The overall picture is thus complex. Comments on groups exceed those on individuals overall, but not in every instance or to the same degree across the board. Negative and positive judgments predominate, but their occurrence varies in the light of the qualities of thinking and feeling evaluated. Moreover, a further possibility, involving connoisseurship, is apparent, again in varying degree. Above all, inferences of different kinds, and at every level examined, appear to vary in their proportionate occurrence according to the discourse variant to which they relate. The significance of these complexities can now be considered.

CHAPTER 8

UNDERSTANDING T'S FORMATIVE ASSESSMENT ACTIVITY

8.1 OVERVIEW

Chapter 7 was principally about associations: how a range of T's comments was differentially linked to three discourse variants. This chapter is about how an awareness of these associations and of a range of concerns that are ultimately philosophical may contribute to an understanding of T's formative assessment thinking in relation to everyday continuing classroom spoken discourse. It has four main elements:

1. A statement about my purposes (Section 8.2, below);
2. A brief consideration of the nature and validity of the particular assumptions which underpin the account I offer (Section 8.3);
3. A proposal for how T's formative assessment activity may be understood, interpretively and theoretically, in terms of three distinct but interrelated perspectives:
 - i) local, by which I mean understanding the way in which a range of concerns about the children influences the immediate course of his work, with particular respect to the primary purposes of the discourses to which they relate;
 - ii) strategic: how three imperatives, namely maintaining the primacy of the group, sustaining the joint intellectual journey and continuously calibrating his own action to the immediate needs he perceives in the children run through all that he does;

- iii) philosophical: whereby T's activity may be understood at its most general level by reference to his educational philosophy.

(Sections 8.4 and 8.5)

- 4. A conclusion (Section 8.6).

8.2 A LIMITED PURPOSE

My purpose in what follows is to depict an understanding of how formative assessment contributes to the work of a single teacher, T, in everyday continuing classroom spoken discourse. What I say relates to Maxwell's proposal for five broad categories of understanding involved in social theory: 'descriptive, interpretive, theoretical, generalisation and evaluative' (Maxwell, 1992, pp. 284, 285). Building on the foundations laid in Chs. 6 and 7, my concern in this chapter is especially with interpretive and theoretical understanding. Matters of generalisation and evaluation receive attention in Ch. 9.

Other than in a small number of instances in which T explicitly describes how his judgments impinge on his actions, my methodology does not allow me to show how assessment and action are linked. In consequence, I shall draw sparingly on the examples which are demonstrable, and then only to introduce the more detailed considerations which follow. I focus instead on what shapes the judgments involved.

My goal is thus tight. It is to portray what T makes judgments about and to understand why. Underpinning my account is an assertion, reached through my analysis of and reflection on T's commentaries, that such judgments reflect a remarkably wide variety of concerns. I believe that these judgments are neither

random nor capricious. I hold that an understanding of formative assessment, in the context with which this thesis is concerned, must be founded on a careful consideration of these concerns and what appears to give them coherence.

My account draws heavily on T's comments. For ease of reference, I number them in the sequence established in Ch. 6. Since the significance of particular elements to which I draw attention is commonly dependent on their context, for the most part they are presented as embedded in more extended stretches of commentary. For the reader's assistance, key comments are underlined.

8.3 PARTICULAR ASSUMPTIONS

In 6.2 I claimed that T's formative assessments are embedded within continuous classroom interaction rather than one-to-one engagements with individual children expressly set up for this purpose. What needs to be understood is how and why these assessments are made. My account rests on a number of particular assumptions over and above the general ones outlined in ch. 4. I list six below and introduce others where appropriate.

- The units of meaning which make up T's commentaries, categorised and analysed in chapters 6 and 7, constitute the primary evidence on which my explanation rests;
- T's unanalysed commentaries provide secondary evidence;
- The levels of the category system are seen as analytical tools. I claim no significance for them beyond this;
- The categories themselves are significant. They constitute elements of T's

psychological reality. My warrant is that they make use of T's words, either directly, as in 'seeing as' and 'agreeing', or in paraphrasing summaries, as in 'focusing ' and 'resilience';

- While instances of the categories are analysed numerically, I do not assume that all are equally significant. An accumulation of instances of one category does not of itself imply its importance, nor does a small number relating to another imply insignificance;
- Nonetheless, where instances of particular categories occur in large numbers or markedly more frequently than those of others, then something of potential relevance to the quest for understanding may be available.

8.4 INTERPRETIVE UNDERSTANDING OF T'S PRACTICE

8.4.1 Interpretive understanding

In 8.4, I advance an interpretive understanding of T's formative assessment activity, that is to say, one that is grounded in the 'intention, cognition, affect, belief, evaluation, and anything else that could be encompassed by what is broadly termed the 'participants' perspective' (Maxwell, *op. cit.*, p. 288). The participant, of course, is T. It rests on the notion of T having 'concerns'.

8.4.2 T's evaluative concerns

8.4.2.1 Centrality of notion of 'concern'

The transcribed exchanges below are drawn from one of the small group reflective discussions. In them, T encourages the children to reflect on the significance of Hindu mythology. The nature of the deity Basmasura's greed is being considered. I present them in order to consider the connection between T's question at M127 ('how was Basmasura busy?') and a second one at M139: 'why d'you think people want power?'. This relationship appears to typify T's formative assessment practice. Hence the example pinpoints the nature of my general concern.

M126 Alan ... Basmasura was greedy / Basmasura

M127 T Basmasura / Basmasura how was Basmasura greedy?

M128 Alan because he wanted some power

M129 T ah / but yes / now he wanted power / is being greedy for power different to being greedy for money? / why do you think he wanted power?

M130 Lana (*indicating with hand*) so he could

M131 Rach 'cos he

M132 Alan because

M133 Rach 'cos he can

M134 Alan when he see

M135 Lana because he can deal with Siva

M136 Alan ... when he wants to kill Siva

M137 T he / ye / he wanted to try his power out on Siva didn't he

M138 Alan yeh

M139 T why d'you think people want power?

M140 Lana (*raises hand*)

M141 T what is it about power that people want? / why do they want it?
/ Lana what d'you think?

(Reflecting on Myths 1: Transcript. Appendix 2.2.2)

In eg. 119 (below), T links his second question to the first:

eg. 119 </ .../ They didn't respond to my question about whether being greedy for power and money were the same or not
acc.in.t.pr.ge.en.g /... so I ask a question which I hope will help:
'why is it people want power?' *scp* /> (R1/SR2 9.55)

The link between assessment and action is made explicit. T's 'why is it people want power?' follows the children's apparent failure to respond to an earlier question about the relationship between greed for power and for money. As the transcript shows, the first question was immediately followed by another: 'why do you think he wanted power?' To the observer, this further question may appear to have shaped the children's responses. Such conjecture, however, is irrelevant to my thesis, which is that T's concerns, which are not random or capricious, shape his actions.

Implicit in T's comment is the foregrounding of the first question about whether greed for money might differ from greed for power. It is to this that he attributes the children's lack of response. This he evaluates negatively. The children's thinking does not measure up to what he seeks. In consequence, as shown by his use of the connective 'so', he poses a further question which he hopes 'will help'. We can see how T's action, in the form of his second question, springs from his evaluation of the *processes* of the children's *thinking*.

In 8.3 (above), I claimed that the categories by which I have analysed T's comments constitute elements of his psychological reality. Now I make a further key assumption. These elements, I suggest, may be seen as *concerns*, that is to say, matters of interest or significance to T in his minute by minute evaluation of the

children's part in the teaching and learning process. The claim is important. Together with the notion of psychological reality, it emphasises that what is being considered is T's consciousness, as it is manifested in his commentary on the evaluative process. From this perspective, *processes* and *thinking*, as identified in the foregoing analysis of T's comments, may be seen as elements of concern that impinge directly on his formative assessment activity. From this point forward, I shall thus refer to these and other elements of the category system (apart from the levels) as T's *concerns*. This provides the basis for a consideration of what, if anything, gives these concerns shape and coherence. I regard this as central to my attempt to understand T's formative assessment-related thinking on action.

8.4.2.2 Range of T's concerns

In what follows, I outline more of T's concerns with a view to adumbrating what I see as their remarkable range. One quite different from those considered above is apparent in the following example:

eg. 120 / Alan's very much into this greed thing. *acc.in.f.it.z.ep.s* / </ I was sceptical of his interpretation of greed until ... / he said Basmasura was greedy because he wanted some power. *acc /... acc /> </ .../* This was about greed for power *acc.in.t.co.sa.ep.s* /... and I can introduce the phrase 'greed for power'. *ctd* / (R1/SR2 9.28)

In this, it is not the children's thinking *processes* that matter to T, but rather their conception of a Hindu deity's greed: in my system, *seeing as*, a subcategory of *construct*, itself an aspect of *thinking*. The child's notion of Basmasura's greed positively evaluated (implicit in T's '... I was sceptical of his interpretation of greed until ... he said Basmasura was greedy because he wanted some power ...'), T feels can introduce the appropriate language: 'I can introduce the phrase 'greed for power''. His concern for the children's *constructs* - here focused on an individual pupil - is instrumental in shaping his subsequent action. An understanding of his

actions must acknowledge concerns like this.

In eg. 121 (below), there is also a positive evaluation of the children. Here, however, it is their *feeling*, embodied in T's word 'rapt', that is in focus, not their *thinking*. To be rapt in something is to be greatly attentive, possibly to the exclusion of all else, a subcategory of *feeling* that I nominate as *interest*. In this case, it is T's evaluation of the children's *feeling* that influences his action: '... the more detail I go into, .../ the more rapt they become': again, the link between assessment and action is made explicit.

eg. 121 / This attention to detail is enhancing the idea of how this is special to Hindus. It's helping them to see what is special about it. *ctd* / </ I'm seeing that the more detail I go into, .../ the more rapt they become. *acc.in.f.it.z.ep.g* /... *ctd* /> (SaDem/SR 12.24)

In the above examples, T explicitly links his actions to evaluations of the children's *thinking* or *feeling*. On this evidence, recognising his concern for the adequacy of their constructs and their thinking processes, and for the significance of their interest, is a necessary part of understanding what he does. My analysis of T's comments suggests, however, that his concerns are more differentiated than these brief examples show. Such differentiation must itself be acknowledged and understood. With this in mind, I now explore its complexity, building on the analysis depicted in Chapter 7. For economy, I refer the reader to its relevant sections or tables where needed.

8.4.3 Understanding T's concerns: local perspective

8.4.3.1 Proposal

T's concerns about the children's *thinking* and *feeling* may be understood initially from a local perspective, that is to say, by reference to the different purposes and

forms of the discourse variants to which they relate and in the light of his overriding intention to promote learning. More particularly, understanding involves recognising two things. First, a discourse that is primarily expository in purpose gives rise to a different balance of concerns from one that is primarily reflective. Second, whole class discourse gives rise to a different balance of concerns from small group activity.

8.4.3.2 Differentiation of T's concerns: thinking and feeling

The numbers of T's comments about the children's *thinking* (318) and *feeling* (69) are large in their own right (Table 7: Appendix 3.2.2). As shown in 7.3.2.3, however, the marked preponderance of *thinking*-related comments in both forms of small group discourse contrasts with the preponderance, albeit less marked, of comments about *feeling* in relation to the whole class activity. Furthermore, the aspects of *thinking* that concern T in relation to expository activity differ from those which concern him in reflective activity. Why these concerns should be so differentially distributed is a prime candidate for consideration in this attempt to arrive at an understanding of his formative assessment activity.

8.4.3.3 Thinking

Overall, *thinking* comments outnumber *feeling* by more than four to one. In relation to the two types of small group discourse, their predominance is greater still (86% and 88%: Table 7). Thinking evidently ranks especially highly in T's concern.

Given that he seeks change in children's thinking, this does not occasion surprise. More demanding of attention are the marked differences in the aspects of their

thinking that concern him between the three types of discourse investigated. 9% of his *thinking* comments in the small group expository discourses are about the children's *concepts*. In the corresponding reflective discourses, the figure is 36% (Table 8, Appendix 3.2.3). While the proportions about *states* vary little between the types, the particular states that concern him differ sharply. In relation to the small group expository variant, two thirds of his comments involve inferences about the children's *knowledge*. In the small group reflective type, by contrast, his comments are overwhelmingly about *understanding* (Table 12, Appendix 3.2.4).

The degree of these differences and the high number of instances involved suggest that T's concern for *thinking* is not only high, but also markedly differentiated. This merits understanding. My account focuses on the two small group discourse variants. It attends less to the whole class activity on the grounds that the instances of T's comments relating to it are considerably fewer.

I propose that his differentiated concern for the children's *knowledge* and *understanding* may be understood initially by viewing them in relation to the contrasting functions of the discourse variants involved. Thus, in the expository discourses, one of T's primary tasks is to enable the children to make sense of matters foreign to their experience. Sometimes, as in eg. 122 (below), he knows they have relevant knowledge on which they can draw:

eg. 122 </ They would be able to bounce the Indian myths off .../ the Greek [myths] that they already knew. *acc.in.t.st.kn.ep.g l... ctd />*
(PA/SR Preliminary)

At others, as in eg. 123, he is unsure of what they bring to the situation, but aware of the difficulty this poses:

eg. 123 </ and uh so that's difficult I don't really know where any of these things we're talking about relate up to what they know about their own you know situation .../ in fact it's very surprising actually

very few of them have *acc.in.t.st.kn.ec.g /... acc.in.t.st.kn.fi.g />*
(SaBk/SR 17.50b)

In eg. 124 (below), T's 'I'm making the connection' and its associated comments reveal what immediately underpins his concern, in this instance for the children's *knowledge*. What the children know - or may know - about church rituals from their own culture should, in his judgment, help them to understand the rites of another. His task is to enable them to make the link:

eg. 124 </ I'm making the connection aren't I between why they might
might keep it clean and the kind of sacredness of the ritual yes is
that right and uh I've done that by first referring to churches .../
which they may have had experiences of or not *acc.in.t.st.kn.fi.g*
/...ctd /> (SaBk/SR 19.16a)

In short, T's concern for what the children know, exemplified above and predominant in this small group discourse variant, may be understood firstly in the light of the variant's pedagogic function: the exposition to the children of a culture hitherto unknown to them.

In relation to the small group reflective variant, the situation is markedly different. T's questions, now predominant, constantly require further thought by the children about what they know. His interest in the children's *knowledge* is replaced by an overwhelming concern for their *understanding*. This is typified in the exchanges below and in T's subsequent comments:

M38 T let's think of the myths that we've got / right / um / think of /
think of a myth that actually tells us something / can you think
of one like that?

M39 Alan 'The Golden Touch'

M40 G 'The Golden Touch'

M41 T 'The Golden Touch' / 'The Golden Touch' / what does that tell
us?

M42 Lana (*raises hand*)

- M43 T yeh
- M44 Lana don't be greedy
- M45 T don't be greedy / so you think it's got a message there somewhere / what d'you think of that / uh Alan / uh / Jo? / d'you think it's got a message there?
- M46 Jo yeh
- M47 T you do you agree with that / so you all agree with that that / that there is a message in the myth / right / OK (*writing*) / so / what kind of a message is it? / is it a sort of what kind of message is it?
- M48 G (inaudible)
- M49 G (inaudible)
- M50 T is it / it's a message that tells us how to act / isn't it / how to be / isn't it
- M51 GG yeh
- M52 T d'you know / we have a special word for that / it's a kind of moral / message / right it actually tells us how to actually behave doesn't it / so / so that's true / (*writes*) / Adam just just leave that / right / OK / it's a kind of moral message / I'm going to write the word 'moral' there / (*writes*)

(Reflecting on Myths 1: Transcript. Appendix 2.2.2)

T's comments, shown in eg. 125 (below), typify his concern for understanding:

eg.125 / I can see they've identified that myths can carry messages *acc.in.t.st.un.ep.g* / and that we've exemplified it through King Midas. *acc.in.t.st.un.ep.g* / I can help them to see it as a moral message, explicitly using the term 'moral'. *ctd* / (R1/SR2 4.18)

What one must try to comprehend here, and in so many other instances of this kind, is why T's concern for *understanding* is so much to the fore. Taken together, the exchanges and comments offer clues. Implicit in them are T's educational goals for the pupils. Here they include appreciating what myths may do; that some may be of moral significance; what it is for something to be 'moral'; that the term 'moral' may be used to refer to matters of this order. Similarly, there are indications

of how T judges that the children are developing such understanding: ‘they’ve identified that myths can carry messages’; ‘... we’ve exemplified it ...’. Finally, on this basis, he believes he can help them to make the notion of a ‘moral’ message their own and introduce the term ‘moral’ into the discourse. In short, we have an account of T’s thinking on action, here relating to an instance of formative assessment and the use he makes of it. Once again, the priority begins to be comprehensible when it is viewed in relation to his purpose, the refinement of the children’s *understanding*.

Refinement involves changes in the way in which things are understood: the establishment of new connections or the reordering of old ones, some subtle, others of a larger order. For T, signs of such changes, or of the possibility of such changes, appear to be a continuing concern. His conclusion in eg. 126 (below) may be read as an indication of his awareness of their presence.

eg. 126 </ but I’m letting it run .../ because they’re staying with it,
acc.in.f.eg.z.ep.g /... .../ making significant points *acc.in.t.pr.ge.ep.g*
 /... *ctd* /> / they seem to have arrived at a position where they can
discuss the idea of myth, rather than particular myths.
acc.in.t.st.un.ep.g / (R2/SR 11.33)

In seeking to understand T’s formative assessment practice, this may be seen as a further manifestation of his concern for the children’s *understanding*, a matter reflected in 93% of his comments on the small group reflective discourse variant categorised as *states* (Table 12: see Appendix 3.2.4).

Just as T is concerned about the children’s thinking *states*, so does he attend extensively to their *concepts*. Most marked in relation to the small group reflective discourse variant, an initial understanding of this may be gained when his comments are viewed in terms of the subcategories of *seeing as* and *relationships*. Two examples illustrate the point. The first, immediately below, relates to one of the small group reflective discourses. It involves T’s comments on some exchanges

about the nature of myths:

eg. 127 / their position seems to be that mythology exists in other cultures but not in your own. *acc.in.t.co.sa.ne.g* / </ I'm OK to look at Bible stories in general .../ - they're with me. *acc.in.t.st.un.ep.g* /... ctd /> (R2/SR 9.20)

In this, T infers something about how the children conceive of mythology ('their position seems to be ...'). It pertains to other cultures, not their own. In his judgment, their understanding of what is developing is sufficient ('they're with me') to allow him to look at Bible stories. The example suggests that what matters to him in instances like this is not the 'correctness' of the children's ideas, but rather their potential for further refinement. The limitations of their conception can be acknowledged (a matter that may be deduced from his later efforts to help them to see that their own culture, like others, has its myths). A more sophisticated position, however, may be reached with appropriate teaching.

Eg. 127 also illustrates the subtle difference between T attributing *understanding* to the children and his inferences about that understanding. Here it involves *seeing as*, a subcategory of *concept*. The first entails judgments about their success in comprehending something. The second involves inferences about the shape of their mental frameworks. Both are widespread in T's comments. This suggests that each is of concern to T. When it comes to the development of the children's thinking, however, the shape of their frameworks (subcategory: *seeing as*) appears to matter especially, for this is what calls for modification. Any understanding of his practice, therefore, needs to acknowledge this further example of his differentiated concern for the children's thinking and the function it serves. It may also be seen to tie in with the more general point that what is at the forefront of T's attention relates to the wider function of the discourse. Here, that function is reflective. It involves the refinement of the children's thinking. Their frameworks, as well as what they do and do not understand, are to him matters of constant concern.

The extent of T's concern for *relationships*, a further subcategory of *concepts*, is limited (Table 10: Appendix 3.2.4). Nonetheless, it lends weight to my argument that some at least of his practice may be understood when it is seen in the light of this larger goal. The category has much in common with *seeing as*, in that it involves inferences about the children's conceptions of the topics under consideration. It differs, however, in that it embodies assumptions about how the children think one thing relates to another. This may involve the identification of similarities or, as in eg. 128 (below), drawing distinctions:

Eg. 128 </ I've left them with .../ their distinction between myths and legends
 - myth as something you don't believe in. Legend you can half
 believe in. *acc.in.t.co.sa.en.g /...ctd />* </ It's not time to have .../
 their logical inconsistencies *acc.in.t.co.sa.en.g /... laid bare. ctd />*
 (R2/SR 17.00)

Here T's attentiveness to the way in which the children conceive of myths and legends - one 'you don't believe in', the other 'you can half believe' - is sharp. Their view is acknowledged and evaluated, albeit negatively, as implied by his subsequent reference to 'their logical inconsistencies'. The assessment is formative, with a judgment that the time is not right to attend to the weaknesses in the children's formulation. As elsewhere, it is manifested in relation to the discourse purpose. The goal of helping the children to refine their conceptual frameworks still stands, but judgment of when to attend to difficulties still figures prominently in T's thinking. Understanding his practice thus involves acknowledging both the differentiated nature of his inferences, of which this is an example, and the complexity of the judgments he makes about acting on them.

Further differentiation in T's thinking is apparent in his inferences about the children's intellectual *characteristics*. My data point to a distinction between his comments on the children's *capacity* and their thinking *style*. The former is typified by egs. 129 and 130, and the latter by eg. 131 (all below):

eg.129 <</ I'm asking this ...</ .../ because I'm not entirely sure what Lana means by strength *acc.in.t.co.sa.fi.s* /... and I'm also encouraging her to make fine distinctions *ctd* />... *ctd* />> / I was fairly sure that she would see that there is more to power than physical or political strength *acc.in.t.ch.ca.ep.s* / (R1/SR1 M147)

eg.130 </ The word 'represent'[T's word: 'the pitcher of water ... represents the goddess'] - I was going to talk about it anyway .../ but I recognise they won't fully understand it *acc.in.t.ch.ca.en.g* /... *ctd* /> / I think they will make some sense from the context *ctd* / </ .../ I'm aware that it might be difficult [for the children to understand] *acc.in.t.ch.ca.en.g* /... but I don't want to change it. *ctd* /> (SaDem/SR 4.55)

eg. 131 </ I choose to disagree with .../ Alan on Indian myths. *acc.in.t.co.sa.en.s* /... *ctd* /> </ .../ I think he can take that *acc.in.f.rl.z.ep.s* /... I think he often just drops ideas into a discussion just to try them out. *acc.in.t.ch.sy.ep.s* /> (R2/SR 5.10)

I see egs. 129 and 130 as indications of T's concern for the *capacity* of the children to understand the topic under immediate discussion. They may be contrasted, however, in a way that further promotes understanding of his practice. In eg. 129, T's judgment of Lana's capacity is positive, even optimistic: 'I was fairly sure that she would see that ...'. In eg. 130, his judgments (two) are negative: 'I recognise they won't fully understand ...'; 'I'm aware that it might be difficult [for the children to understand]'. Both positive and negative evaluations serve his purposes. He can continue to help Lana to make 'fine distinctions'. He will not change his course for the children. They will be supported by the context.

In eg. 131, further complexities are apparent. T's resolution to disagree with Alan about Indian myths (he has said that they are sad) seems to spring from at least three considerations: an evaluation of how Alan sees Indian myths; a judgment about the significance of his thinking *style*, involving an inference about what lies behind it ('he often just drops ideas into a discussion ...'); and a judgment about whether he can cope with a challenge ('... he can take that'). Understanding here involves recognising the interdependence of the evaluative processes that shape T's course.

A further point must be made about T's concerns for *thinking*, albeit with caution, for relatively few instances are involved. In the small group expository discourse variant, *style* appears to be T's predominant concern. In the reflective variant, it is *capacity*. I think that this shift may be understood in the light of the larger purpose of the reflective discourses, namely the refinement of the children's meanings. Given this, just how far the process may be taken is likely to figure prominently in his thinking. So much seems to be apparent in his assessment in eg. 141: 'I was fairly sure that she would see that there is more to power than physical or political strength.' Again, understanding T's practice begins with an acknowledgment of the broad purposes that underlie particular discourse variants.

The final dimension of T's thinking-related comments that warrants consideration involves *processes* (see 6.6.2.5.2). Of its five subcategories, one, *generating*, accounts for fully 64% of all the items (Table 11: Appendix 3.2.4). In hindsight, I regard the notion of 'generating' as a portmanteau category, one that embraces a number of strands that might with advantage be teased apart. In what follows, I refer to individual items within the category, knowing that my analysis as it stands does not permit me to go further. Nonetheless, there is evidence of T's awareness of a range of the children's contributions to the discourses, each of which helps him to judge the progress of their ideas and determine the possibility of advance. This is typified by his comments in eg. 132 (below) on Lana's contribution to one of the small group reflective discourses. At this point, people's belief in incarnation is being explored. The note referred to is one of six drawn up in the course of earlier discussions to summarise the children's developing perceptions. It reads: 'Myths also have good people. Prahlad was a worshipper of Vishnu.'

eg. 132 </ Lana seems to be reinforcing .../ what we wrote in note 5. *ise /... acc.in.t.pr.ge.ep.s />* </ .../ she's right into this. *acc.in.t.st.un.ep.s /... it means that I can keep asking questions, probing ideas *ctd />**
(R2/SR 12.15)

T's inference about the relationship between Lana's contributions to the

discussion (categorised as *generating*) and the note is interesting. The link is not apparent to the observer. To T, however, it ‘reinforces’ what was earlier said and written. It tells him Lana is ‘right into’ the subject. He can ‘keep asking questions, probing ideas’. The discourse transcript shows that this is just what he does. His thinking on the formative assessment process is laid bare. Signs that the children are ‘right into’ the subject matter to him.

My over-broad examination of the *generating* category of T’s inferences about the children’s thinking *processes* limits my interpretation of this matter. I think, however, that two further subcategories of these processes, *agreeing* and *resolving*, allow me to go beyond the localised interpretation offered above. Fewer instances are involved than for *generating*. They are sufficient, however, to suggest that their occurrence almost entirely in relation to the reflective variant of the small group discourses (Table 11: Appendix 3.2.4) is significant.

In this variant, 25% of T’s comments, twenty in all, involve inferences about the children’s agreeing with propositions or resolving issues. By contrast, in relation to the small group expository variant, just three items, or 9%, are of this kind. In relation to the whole class expository discourse, just one of T’s comments is like this, a small figure best disregarded. What needs to be considered, therefore, is the relatively high incidence of *agreeing* and *resolving* inferences in the small group reflective variant.

As with so many other inference categories, I think that understanding may begin by relating T’s concern for these matters to the variant’s form and purpose. I have already established that the variant differs from the others especially in its high incidence of teacher-generated questions (see 7.2.2.5 and 6). This, I believe, gives it a Socratic quality, especially when it is seen that so many of T’s questions invite the children to clarify their meanings or assent to propositions formulated by T on the basis of the children’s ideas, as is illustrated in 7.2.2.5.

How T's inferences about *agreeing* and *resolving* enable him to drive such discourse forward now becomes comprehensible. While not alone in this, they appear to serve particular functions. In eg. 133 (below), for example, we see how he refers to an inference about an agreement by children (category: *agreeing*) about the Orpheus story to account for a decision to look at further myths:

eg. 133 / I think they've now agreed that Orpheus isn't a moral message tale and that it's about something other than this. *acc.in.t.pr.ag.ep.g* / The Midas myth is a moral message. This one isn't. *rkf* / Now there's a need to look at other myths. *ctd* / (R1/SR2 7.00)

Eg. 134 (below) shows T's comments on part of the discourse in which Orpheus's turning back to look at Eurydice is discussed. It includes an *agreeing* inference ('they're all agreeing with this'), a *resolving* inference ('... while Lana is judging his notion') and an indication of what T believes he can do in their light: 'dig into it ... draw the threads together'.

eg. 134 </ I now feel able to make the link for them - that this is about the human condition. (R) I think I can do this because .../ Ady has offered the idea that the situation is sad *acc.in.t.co.sa.ep.s* /... /> </ .../ they're all agreeing with this *acc.in.t.pr.ag.ep.g* /... while Lana is judging his notion. *acc.in.t.pr.rs.ep.s* /> </ it's .../ the act [Lana's] of making a judgment *acc.in.t.pr.rs.ep.s* /... that enables me to dig into it so that I feel that I can draw the threads together for them. *ctd* /> (R1/SR2 6.14)

As in the previous example, one sees how T identifies the link between a particular inference (*resolving*: 'Lana ... judging ...') and his subsequent action. As before, it involves his suppositions about the children's mental *processes*. As before, it adds to one's appreciation of the highly differentiated concerns that appear to shape his actions.

Of further interest here is the way in which T's presumption about Lana *judging* is embedded in a series of inferences (Ady's idea 'that the situation is sad'; 'they're all agreeing ...'). While he attributes particular significance to just one ('it's the act

[Lana's] of making a judgment that enables ...'), his action is more readily comprehended when this wider flux is acknowledged. Each inference is about the children's *thinking*. His judgments and subsequent actions become understandable in the light of his larger goal: the refinement of the children's understanding. This priority is apparent by inference from T's constant questioning of the children throughout the small group reflective discourses, the validity of which step he confirms in explicit commentary:

eg. 135 </ .../ 'Are you happy with that?' [T's question to children] this characterises the object of the exercise - helping the children to clarify their own position preparing the ground for further sense-making *ctd* /... I'm definitely conscious of doing this [preparing ground] *ctd* /> (R2/SR 8.15)

The expository variants, by contrast, have different goals. As shown above, it is the children, not T, who ask the questions. The latter's task is to introduce the children to a culture new to them. To this, concerns about *agreeing* and *resolving* have little relevance. Refinement of the children's understanding is not the priority, but rather the expansion of their knowledge base. This, again, is born out directly in T's commentary (eg. 136: below):

eg. 136 / I'm giving great attention to detail. I'm concerned to get the ritual correct. *ctd* / </ .../ If they'd asked why this finger or that one, I couldn't have answered, *rkf* /... but I remember thinking that they needed to enter a world of detail. *ctd* /> / The details like touching the statue are important. By imparting the detailed I think I'm imparting something of the nature of ritual itself. *ctd* / (SaDem/SR 12.24)

In short, the beginnings of an understanding of T's differentiated concerns for the children's thinking *processes* involve an acknowledgment of his differentiated purposes, as they relate to the unfolding project.

8.4.3.4 Feeling

Overall, T's inferences about the children's *feeling* are markedly less common than those about their *thinking* (see Table 7: Appendix 3.2.2). This observation, however, masks differences between his concerns as they relate to the three discourse variants individually. Most obviously, whereas his concern for *thinking* is predominant in both small group variants, in relation to the whole class expository discourse, comments on *feeling* are to the fore (Table 7). An attempt to understand T's practice must acknowledge this marked shift towards a concern for *feeling* in this particular variant.

My initial attempts to comprehend the role of T's *feeling* inferences led me to focus on two phenomena especially. One was the predominance of such inferences in relation to the whole class expository discourse (Table 7: Appendix 3.2.2). Participation in any teacher-pupil discourse, whatever its nature, I reasoned, makes continuing formative demands on the teacher involved. Different variants, my data suggested, made different demands. The whole class discourse I had seen was marked out from the others in two ways. Most obviously, it involved the whole class, not small groups. More subtly, as shown in 7.2.2.2, it differed in form. The children's contributions, although frequent, were briefer, while T's were more lengthy, sometimes considerably so. This difference I coupled with a second phenomenon. Inferences about *feeling* featured proportionately more highly in relation to the whole class discourse variant than in relation to the others (Table 7, Appendix 3.2.2). It appeared that T's overriding concern for *feeling* might be understood in the light of the particular demands of this discourse variant.

It was, I thought, a promising idea. The brevity of the children's parts restricted interpretation of their *thinking*. Inferences about their *feeling*, however, depended less on their verbal contributions. Other clues were suggestive. I remembered especially one of T's observations, made in relation to a key point in the Saraswati

Puja demonstration: 'It's the way they're looking at me and the golden thread' (SaDem 3.37). Most teachers will recognise the particular intensity of children's looking that speaks of whole-hearted interest in the topic in hand.

I still think that this is a major part of the story. T's inferences about the children's interest in the Puja abound. Eg. 137 (below) is typical. It shows how awareness even of whispering, so quiet that it could not register to T as verbal interaction, might play its part:

Eg. 137 </ .../ I was very aware of the children's quiet whispering. *acc.in.t.pr.ge.ep.g* /... It was a clue to me about how engrossed they were. *acc.in.f.eg.z.ep.g* /> (SaDem/SR 5.33)

Moreover, the comments suggest that such inferences are used formatively. In eg. 138 (below), we see - twice - how they shape his answers to a key issue faced by any demonstrator: how much detail should I offer? In eg. 139, we see how he deals with one of the problems of working with children especially: how much participation should be invited?

eg. 138 The details like touching the statue are important. By imparting the detailed I think I'm imparting something of the nature of ritual itself. *ctd* / </ I sense I can offer this detail .../ because they're so involved. *acc.in.f.it.z.ep.g* /... .../ They almost seem to be enjoying the detail. *acc.in.f.it.z.ep.g* /... *ctd* /> (SaDem/SR 12.24)

eg. 139 / I'd anticipated this as an opportunity for some participation. *ctd* / If they'd been uninterested or not focusing I wouldn't have done this. *ctd* / </ .../ The children [the children's interest, etc] *acc.in.f.it.z.ep.g* /... allow me to do it. *ctd* /> (SaDem/SR 15.40)

Two further observations convince me of the significance to T of such inferences and their relationship to this discourse variant. The first is the already-mentioned preponderance of *feeling* comments. The second is the fact that, of all *feeling* inferences noted, almost four in five involve references to the children's *interest* or *engagement* (Table 9: Appendix 3.2.3). If T's thinking in action is like his thinking

on action, such inferences appear to play a role in the immediate formation of his contributions to discourses like this.

Further consideration, however, leads me to believe that the overall picture is more complex. Recognition of the frequency of T's comments on *interest* and *engagement* in relation to the whole class expository discourse, and on *feeling* in general, may obscure three further facts. First, while they occur less frequently, they are still found in relation to the other discourse variants (see Tables 7 and 9: Appendices 3.2.2, 3.2.3). Second, their occurrence in relation to the expository and small group variants is of a similar order (14% and 12%: Table 9). Third, when the two categories of *interest* and *engagement* are combined, a difference between the expository and the reflective variants becomes apparent. Comments on *interest* and *engagement* occur relatively more frequently in relation to one than the other.

The numbers involved are relatively small. The difference is not great: 71% of the *feeling* comments in relation to the expository variant involve *interest* and *engagement*, and 55% for the reflective discourses (Table 9: Appendix 3.2.3). One must therefore view these figures cautiously. Nonetheless, they invite speculation about whether such differences are attributable principally to the form of the discourses or to their function. The differences between the small group discourse variants noted above suggest that function may at least play a part.

Eg. 140 (below) shows T's observations on part of the small group expository discourse in which he shares a book about the Saraswati Puja with the children. His comments relate to his account of how ritual maintains a shrine's sacredness. What interests me is his assertion, indicated by the words underlined, of what gives him licence to make a connection between reverence for churches and for shrines:

eg. 140 </ .../ [the children] seem to nod assent at [the assertion that the

shrine must be kept clean] don't they *acc.in.t.pr.ag.ep.g* /... you wouldn't you wouldn't dirty a church you know *acc.in.t.st.kn.ep.g* /> / and then and [I have] gone into gone into the idea that ... actually part of what's important about the ritual is that the the goddess actually appears in the statue right *ctd* /</ and then made the connection into why they might keep it clean or why they might treat it with particular reverence ... because of that knowledge .../ which Selena seems particularly interested in *acc.in.f.it.z.ep.s* /... *ctd* /> (SaBk/SR 19.16a)

I believe that this has much in common with his comments in eg. 141, which relate to the whole class demonstration of the puja. In particular, each example shows how T takes an inference about the children's *feeling* (in eg. 140 *interest*, in eg. 141 *engagement*) as licence to introduce further detail into his exposition.

eg. 141 / I said, 'that's what the Indians believe.' I should have said, 'Hindus.' *ctd* / A slip, but introducing the word 'believe' was crucial. *ctd* /</ I felt confident that I could .../ because they were transfixed by the idea of the god coming into the statue. *acc.in.f.it.z.ep.g* /... *ctd* /> (SaDem/SR 12.56)

These contrast with T's comments in eg. 142:

eg. 142 </ But I'm letting it run .../ because they're staying with it *acc.in.f.eg.z.ep.g* /... .../ making significant points. *acc.in.t.pr.ge.ep.g* /... *ctd* /> / They seem to have arrived at a position where they can discuss the idea of myth, rather than particular myths. *acc.in.t.st.un.ep.g* / (R2/SR 11.33)

As in egs. 140 and 141, the reasons T gives for his actions are founded on an inference about the children's *feeling*: '... they're staying with it' (*engagement*). In the former examples, however, his judgments appear to be made with how much further detail he can introduce in mind. In eg. 142, by contrast, his judgment relates to the level of discussion the children can cope with. They are able, he says, to '... discuss the idea of myth, rather than particular myths'), that is to say, to move from the particular to the general. This, I suggest later, involves a crucial notion of intellectual development. At this point, it should be noted that, in the first two examples, T's concern for *feeling* relates to the overriding purposes of exposition,

but in the third to reflection. As with what we have already seen about *thinking*, his concerns for *feeling* appear to reflect the overriding purposes of the discourse to which they relate as well as the form it takes.

8.4.3.5 Evaluative stance, individual children and groups

At a number of points in the above analysis, I have touched on both the evaluative dimension of T's inferences (Level 6 in my analysis) and his judgments about the children as individuals or as groups (Level 7). I now consider this more directly, first with *feeling* in mind, then *thinking*. Since they are by far the most common, I look primarily at T's adverse or favourable (my categories: *evaluated positive*, *evaluated negative*) judgments about the children (see Tables 17 and 21, Appendices 3.2.5, 3.2.6). Other evaluative stances, however, are also considered.

With regard to *feeling*, my analysis reveals marked differences in the incidence of T's adverse and favourable judgments between the discourse variants. His evaluations that relate to the small group expository discourses are overwhelmingly *positive*. For the whole class activity, they are rather less so. For the small group reflective activities, just half are of this order. By contrast, *negative* evaluations range from none for the small group expository discourse variant to almost a third for the corresponding reflective activity (Table 21: Appendix 3.2.6). The shift, then, is from an overwhelming preponderance of *positive* comments on the small group expository discourse to a situation for the corresponding reflective variant in which such judgments still predominate, but *negative* judgments occur sufficiently frequently to suggest that there is something to be understood.

I wondered at first whether at least some of this shift might be comprehensible in the light of a tendency for T to comment more frequently on individuals (my category: *individual*) in relation to some discourse variants than to others. Of 14

negative evaluations of *feeling*, half related to individuals. Of these, 5 were linked to the whole class expository discourse, where no adverse comments were made about the *group* at all. Some of these comments were understandable, at least at one level, in terms of T's expectations of the children's commitment. In eg. 143 (below), he comments on a child's inattentiveness:

eg. 143 / I'm just recognising that D. is being inattentive. *acc.in.f.eg.z.en.s* / I'm quite intolerant of inattentiveness. I've got high expectations. I don't get angry, but I do have high expectations. *ctd* / (SaDem/SR 8.12)

The judgment relates to a crucial point in the puja demonstration, with T showing the children how the priest takes the holy water to his lips. T's response, as shown in the discourse transcript, is brief. A momentary break in the narrative: 'are you listening Dean?' (S29, Appendix 2.2.4). No more. His explanation is clear: inattention is not tolerated. There is nothing in this, however, or in the tiny number of other comments about the children's misdemeanours, to suggest that such judgments about individuals are linked to particular discourse variants.

Tentatively, however, for the numbers involved are small, one might suggest that there are common elements in some other *negative* judgments by T about the feelings of individual children. Both eg. 144 and eg. 145 (below) are like this. The first relates to a child who appeared to be unwilling to partake fully in one of the stages of the Saraswati Puja demonstration. It exhibits two *negative* judgments: one about the child's reluctance (category: *want*) and another about the potential consequence of insisting on her participation (category: *resilience*). The further judgment, in eg. 145, imputes unease to a child: she 'sounded almost upset' (category: *perplexity*). It relates to her response to the news that, at the end of the puja, the Saraswati statue is thrown into the water.

eg. 144 </ .../ That child who didn't want to partake *acc.in.f.wa.z.en.s* /... - I didn't press - .../ it would have made her more self-conscious.

acc.in.f.rl.z.en.s /... ctd /> (SaDem/SR 3.17)

eg. 145 / The child who asked, ‘Why?’ sounded almost upset.
acc.in.f.px.z.en.s / I almost felt upset myself. ctd / </ Recognising .../
 she was [upset] too *acc.in.f.px.z.en.s /... made me feel an*
 explanation was needed. *ctd / (SaDem/SR 8.40)*

The *negative* evaluations are thus varied in their concerns: *want, resilience, perplexity*. Like his positive judgments, which I consider later, they help to shape T’s actions. In the one instance, he does not insist on participation. In the other, he provides the explanation the child seeks:

... it’s partly to show that they understand that this is just a statue / it’s not a god / right / it’s a statue / and although Saraswati came / right / they understand that she has gone / right / and this is just a statue and something that can be let go ... (T S129, Appendix 2.2.5)

Their subtle differences notwithstanding, I think that these judgments have in common T’s acknowledgments of underlying disturbances in individual children’s *feeling* and consequent responses. I see no grounds, however, for believing that such judgments relate to particular discourse variants. The instances are few. Their occurrence in particular contexts may be a matter of chance. Moreover, in relation to those identified, closely similar judgments involve groups rather than individuals. In eg. 146 (below), we see a succession of them or, rather, one judgment about a child’s unease. followed by two explanatory comments:

eg. 146 / I’m searching for ways of getting them started *ctd / </ I’m feeling*
that they’re perplexed .../ it’s the way they are looking at me
acc.in.f.px.z.en.g /... .../ and they’re very quiet. acc.in.f.px.z.en.g /...
acc.in.f.px.z.en.g /> / Alan liked the stories because they’re about
 gods *acc.in.f.it.z.en.s / I don’t respond because I can’t see what can*
 be done with it *ctd / but Lana’s ‘they tell you things’ at once*
 appeared to have mileage *acc.in.t.co.sa.ep.s / (R1/SR2 1.56)*

Aggregating the individual and group-related comments produces enough data to admit more soundly based interpretation. In particular, it suggests that negative evaluations of *feeling* play a significant part in T’s electing not to pursue particular

matters further. In egs. 147 and 148 (below), we see two such occurrences:

eg. 147 <</ I let this drop. ...</ They almost have a moral position on this. It's a kind of disapproval, .../ especially on Alan's part. *acc.in.f.px.z.en.s /... acc.in.f.px.z.en.g />... ctd />> </ I've certainly decided this isn't the place to pursue it. .../ It's partly this disapproval, *acc.in.f.px.z.en.g /... .../ but also the intellectual demands of the issues.* *rkf /... ctd />* (R2/SR 15.13)*

eg. 148 </ I've left them with .../ their distinction between myths and legends - myth as something you don't believe in. Legend you can half believe in. *acc.in.t.co.sa.en.g /...ctd />* ... </ .../ Some of their own conversations indicate it is possible for them to see their own stories as myths *acc.in.t.ch.ca.ep.g /... but it's not a road they seem to want to go down.* *acc.in.f.wa.z.en.g />* (R2/SR 17.00)

Both examples involve T's comments on one of the small group reflective discourses. To the observer, they are especially suggestive. The Socratic mode T adopts in this discourse variant might be regarded as a high risk strategy. It courts the possibility that the children will fall silent in the face of so many questions. In my observations of T's work, this does not happen here, nor elsewhere. His attentiveness to the children's occasional unease about the thrust of the discourse ensures that breakdown is avoided. A direction is pursued no further, a line of questioning abandoned.

T's final comments in eg. 147 add further to this understanding. Along with the children's *feeling*, the *thinking* demands of the subject matter are acknowledged. T does not always retreat in the face of intellectual difficulties. In eg. 149 (below), which relates to the puja demonstration, he comments on his use of the word 'represent':

eg. 149 </ The word 'represent' [T: 'the pitcher of water ... represents the goddess'] - I was going to talk about it anyway, .../ but I recognise they won't fully understand it. *acc /... ctd />* / I think they will make some sense from the context. *ctd /</ .../ I'm aware that it might be difficult [for the children to understand]* *acc.in.t.ch.ca.en.g /... but I don't want to change it.* *ctd />* (SaDem/SR 4.55)

Here, there is no reference to *feeling*. Confident that the children ‘will make some sense from the context’, T does not change his course. Where adverse feeling and intellectual challenge coincide, as in eg. 101, however, he may elect not to pursue the matter further.

Positive evaluations of *feeling* are evident in relation to all the discourse variants. In the whole class expository activity, where they exceed references to *thinking*, all relate to the class as a whole, rather than to individuals. Throughout this discourse, they appear to play an important part in encouraging T to sustain the course of his work or to increase its intensity. This is typified in egs. 150 and 151 (below):

eg.150 </ .../ ‘Then there’s silence.’ I left the pause pregnant *ctd* /... and they respect it. *acc.in.f.rs.z.ep.g* /> / This class came with a reputation for being difficult. It’s a big class - 33 - *pbd* / </ .../ but they were there *acc.in.f.eg.z.ep.g* /... and I could go forward. *ctd* /> (SaDem/SR 16.38)

eg. 151 </ I’m beginning to feel that the more I concentrate on the detail of ritual, .../ the more they are with me *acc.in.f.eg.z.ep.g* /... and the further I can go. *ctd* /> (SaDem/SR 12.24)

In eg. 150, not one, but two positive judgments appear to be involved. Both are about *feeling*, one with regard to *respect* and the other to *engagement*. I see them indications of both the differentiated nature of T’s concerns and the way in which particular courses adopted may be rooted in more than one of his concerns.

In like manner, *positive* judgments appear to be active in shaping T’s course in the two small group variants. They may, for example, involve an anticipation of the children’s *interest*, as in eg. 152, or an inference about the durability of their *engagement* with the subject matter, as in eg. 153 (both below):

eg. 152 </ I anticipated that the children would find this strange .../ - a man standing upside down on his head in a filthy street. *idf* /...

acc.in.f.px.z.ep.g /> / The event encapsulates what India is about. rkf / </ I know it will make an impact on the children .../ because it makes an impact on me as well. rkf /... acc.in.f.it.z.ep.g /> (PA/SR 27.33)

eg. 153 *</ I'm struggling to articulate .../ what they're trying to say. acc.in.t.pr.ge.ep.g /... ctd /> </ But I'm letting it run .../ because they're staying with it, acc.in.f.eg.z.ep.g /... .../ making significant points. acc.in.t.pr.ge.ep.g /... ctd /> (R2/SR 11.33)*

I can find nothing in my data, however, to suggest that judgments about particular dimensions of *feeling* impinge differently on T's work in relation to the small group expository and reflective discourse variants. I am confident, rather, that highly differentiated judgments are involved in both. The examples above illustrate this trend.

The tendency for individual children to feature in these positive judgments about *feeling*, quite extensively in relation to the small group reflective activities, marginally to the small group expository variant and not at all to the whole class discourse (Table 29: Appendix 3.2.8), invites further consideration about the interaction of form and function in shaping T's formative activity. The obvious explanation would attribute these differences primarily to form, on the grounds that whole class activity makes the observation of individual children difficult, whereas small group activity facilitates it. In T's case, I do not think that this can be the whole story.

In the whole class variant, 41% of T's positive judgments about *thinking* relate to individuals (Table 25: Appendix 3.2.7). The numbers involved are small, but enough to suggest that such discourse does not of itself preclude *feeling* judgments about individuals. Instead, other factors appear to be involved in their absence from the whole class activity and presence in the small group work in varying degrees. Some understanding may be gleaned by considering T's comments on one of the small group discourses (see eg. 153, below), and relating

them to questions of function:

eg. 153 </ I choose to disagree with .../ Alan on Indian myths.
*acc.in.t.co.sa.en.s /... ctd /> </ .../ I think he can take that.
*acc.in.f.rl.z.ep.s /... I think he often just drops ideas into a discussion
 just to try them out. acc.in.t.ch.sy.ep.s /> (R2/SR 5.10)**

These comments relate to one of the reflective discourses. In both small group discourse variants, the children's voices are prominent. Their role in the reflective variant, however, differs from their role in the expository (see 7.2, above). In particular, in the reflective discourses the children typically respond to T's initiatives, rather than generate their own. Their responses are, in the main, individual. These T frequently probes, albeit with a view to advancing the thinking of the group, not just the individual child. Nonetheless, he has to sustain the commitment of the whole group, of whom the individual is a significant member, to the course of the discussion. His challenge is to keep each participant involved in what is, as suggested above, a high risk activity. A continuing alertness to the possibility of individual vulnerability is required in the small group reflective variant, to a degree that appears to be greater than in the other discourse variants, where the risks of the children's alienation are lower. This alertness is exemplified in his 'I think he can take that'. I conclude from this that T's differentiated concern for individual pupil *feeling* may be understood at this level primarily in the light of discourse function, rather than form.

With T's *feeling*-related comments on individual children in mind, one further evaluative stance warrants consideration. Involving *connoisseurship*, it is typified in eg. 154 (below):

eg. 154 / well it's just all there look at that I mean d'you see the eyebrows
 go up? you know real response Rach *acc.in.f.it.z.ec.s / (R1/SR2
 19.50b)*

In view of the language employed, so greatly does T appear to savour such

moments that one might conclude that they do much to sustain his enthusiasm for his immediate teaching path. Their importance may thus be greater than their relatively small numbers (see Table 29: Appendix 3.2.8) appear to warrant. My claim for this is buttressed by the evidence of the more numerous evaluations like this that relate to *thinking* (Table 26: Appendix 3.2.8). In these, individually-focused judgments predominate in T's comments on the small group reflective activity in sufficient quantity to suggest that more than chance is involved. I conclude from this that an understanding of T's practice must acknowledge his tendency to connoisseurship and recognise the particular part played in it by judgments about individual children. Since such judgments relate especially to the small group reflective discourse variant, one might surmise that any risks associated with it are offset by T's delight in the children's prowess.

As with *feeling*, *negative* and *positive* evaluations predominate in T's inferences about *thinking* (Table 17: Appendix 3.2.5). Similarly, there are marked differences in their proportional incidence between the discourse variants. Overall, however, considerably more instances are involved. Hence greater weight may be attached to them. The whole class variant is a possible exception. It accounts for just 21 of the 254 instances involved. I shall consider it before the others, but circumspectly in view of its relatively small numbers.

In relation to the Saraswati Puja demonstration, my one example of the whole class expository discourse variant, T's *positive* evaluations of the children's *thinking* outnumber the *negative* by four to one (Table 7: Appendix 3.2.2). Of the positive evaluations, rather more than two thirds of the instances involve *thinking processes* or *characteristics*. Apparent in both of these subcategories of *thinking* is a concern, typified in egs. 155 and 156 (below), that the children should understand the subject matter of his demonstration:

eg. 155 </ .../ The children were both repeating and volunteering about the

gods. acc.in.t.pr.ge.ep.g /... This was telling me they were with me.
acc.in.t.st.un.ep.g /> (SaDem/SR 9.40)

eg. 156 / The language, ‘Saraswati has come among us’, is very Biblical, Christian, Pentecostal. *rkf / </* I remember thinking at the time that this language was appropriate to the situation .../ and that it [this language] would be meaningful to them. *acc.in.t.ch.ca.ep.g /... ctd />* (SaDem/SR 16.56)

T’s judgments are *positive*. The children are ‘... repeating and volunteering ...’ (my category: *generating*): they understand. The language will be ‘... meaningful to them...’: it is within their intellectual reach (category: *capacity*). These conditions satisfied, he can take his exposition further.

The *negative* evaluations may be seen in similar light, except that they involve the recognition of factors that might impede this forward movement. In this way, they are merely the other side of the same coin, with T judging that the children’s *thinking* falls short of what is needed. This is apparent in eg. 157 (below), first with regard to the children’s past experience (my category: *knowledge*), then to their intellectual reach (*capacity*). T’s observations here relate to his introduction of the artifacts involved in the Saraswati Puja to the children. They are made in the light of his view of the magnitude of his immediate task: ‘I know that the pitcher is very very significant in the puja. I need to explain it but the problem is that the whole thing’s shot through with symbolism’ (SaDem/SR 1.54):

eg. 157 / I anticipate that the children won’t have had much access to this
acc.in.t.st.kn.en.g / </ ... / and that making sense of it will involve a
considerable reach on their part. *acc.in.t.ch.ca.en.g /... It’s very*
important that I help them to do it. ctd /> (SaDem/SR 1.54)

The need recognised, an explanation is offered: ‘

and the reason why they use rice a lot is because they grow it / and they eat a lot of it / so when they make / an offering / right / they use rice a lot / they use it as their food / OK / so when they give their food to the gods (*placing*

pitcher by altar) / they're offering the gods some food / OK /' (Transcript: S 17: Appendix 2.2.5).

In relation to the puja demonstration, instances of what appear to be the constructive use of *negative* judgments like this are few. Caution in weighing their significance is required. Nonetheless, I think that they offer insights into T's practice that transcend their rarity in relation to this discourse alone. This is partly because of the picture they offer of the relationship between T's evaluations of the children's *thinking* and the actions to which they relate. His awareness of the subject's intellectual demands is made clear. So, too, are the complexities involved in judging the children's readiness to meet them. On this evidence, they embrace many concerns about the children. Moreover, for all their rarity in relation to the whole class expository discourse, they occur in sufficient numbers, even if not in relative frequency, in relation to the small group variants (Tables 14-16: Appendix 3.2.5) to suggest that they play a significant role in shaping T's actions in discourse generally. I have no warrant, however, for claiming that they function in a special way in relation to the whole class expository variant.

In relation to the two small group variants, however, the evidential ground is more secure. The *negative* and *positive* judgments associated with them account for 233 of the whole total of 318 *thinking* comments for all three discourse variants (Table 17: Appendix 3.2.5). Moreover, what looks like a clear difference is apparent. In the expository variant, the *negative* and *positive* occur in almost equal numbers. In the reflective variant, by contrast, the *positive* exceed the *negative* by three to one.

It puzzled me for some time that these *negative* judgments - albeit positively used - occurred so much more frequently in relation to the small group expository discourse variant. My initial expectation was that this could mainly be attributed to the primary function of the discourse. Exposing children to the new, I thought, was likely to reveal gaps in their knowledge (my category: *knowing*) that T would tend

to take into account. As I saw, and illustrate in eg. 158 (below) with one of his comments that relates to the exploration of the book about the puja, this certainly happened:

eg.158 / they didn't know why they might try and keep this particular altar area clean *acc.in.t.st.kn.en.g* / (SaBk/SR 17.50f)

But there were fewer of these judgments than I had anticipated, and even this one was made in response to my request to enlarge on something he had already said. I then saw that, in relation to this variant, eleven of T's evaluations of the children's *thinking style* were *negative* and none positive. These accounted for almost a third of the *negative* evaluations about *thinking* for the variant (Table 14: Appendix 3.2.5). In contrast, I recorded no *negative* judgments about *style* in relation to the whole class activity and just one for the small group expository work, a variant that had generated almost as many comments as the other two put together. Further, of the eleven *negative* judgments linked to the small group expository variant, ten involved individuals (category: *single*) It seemed that an attempt to comprehend the role of *negative* judgments about *thinking* had to acknowledge these phenomena especially. There might, I thought, be something about the small group expository variant that gave rise to *negative* evaluations of the *thinking style* of individual children.

The light I anticipated these judgments would shed faded, however, as I looked at them more closely. First, all ten *negative* judgments about individual pupils related to the same incident, a point in T's exposition of the book about the puja at which he describes how the statue of Saraswati is prepared. Second, all involved a single child, Alan. Third, two of the ten were in response to my requests for further comment, rather than by T unprompted. For these reasons, while I leave the tables untouched, I think that it is prudent to regard my statistical analysis of T's comments as potentially misleading. I now think that the high incidence of *negative* judgments associated with this discourse variant is illusory, a product of

chance factors which could as easily have been generated in association with other discourse activities. In this light, I conclude that I have no compelling grounds for regarding the small group expository activity as especially likely to involve *negative* judgments of *thinking style*.

Thus I do not argue on statistical grounds that these negative judgments about style have significance in this quest to understand T's formative practice. Nonetheless, I do claim that considering them remains important. I want to illustrate this by reference to a number of his comments about Alan.

First, in egs. 159 and 160 (below), we see how prominently he can figure in T's consciousness:

eg. 159 / I'm going to have to explain *providing background detail* / this this child (laughs) this child here is one of those children who can really get under your skin you know at time like *acc.in.t.ch.sy.en.s* / (SaBk/SR 12.10a)

eg.160 / and I've probably I don't know whether he's sinned at lunchtime or something *acc.in.t.ch.sy.en.s* / but I've had a mug full of him already (laughs) *acc.in.t.ch.sy.en.s* / (SaBk/SR 12.10a)

I have said much about T's concerns about the children's *feeling*, but nothing about his own. These comments, couched in vivid colloquial metaphor, reveal their strength. Eg. 161 (below), while beginning by referring to Alan, shows that they have wider relevance:

eg. 161 you know what you felt was sort of you know playing trying to wind you up and it's very difficult to know exact *acc.in.t.ch.sy.fi.s* / in fact and you meet these children from time to time I in fact think they're very rare children like that but they do exist ... *acc.in.t.ch.sy.en.s* / (SaBk/SR 12.10a)

Egs. 162 and 163 (below) offer evidence of what T sees as the consequences of attending directly to Alan's contributions to the discourse:

eg. 164 </ I think part of the problem is is that is that I know that if I respond to him it's going to go on some long wheedling round trip you know which is which is going to take us miles off .../ because of the nature of the kid himself *acc.in.t.ch.sy.en.s /... ctd />* (SaBk/SR 12.10b)

eg. 165 </ if I went on his trip if I wound off on his trip I would I would have ended up talking to Alan .../ and the others would have been left there *acc.in.t.ch.sy.en.g /... ctd />* (SaBk/SR 12.10d)

Then, in eg. 166, we have T's account of how he deals with the problem:

eg. 166 </ and uh I decided to just sort of uh try and kill .../it [Alan's point] *acc.in.t.pr.ge.en.s /... where it was really (laughs) ctd /* (SaBk/SR 12.10b)

In all this, we have, in considerable detail, a commentary in T's words on the formative process. It reveals above all its complexities: T's general perception of a particular child; his view of the child's contribution at a particular point in a discourse; his feelings about the child at that point; his awareness of the possible consequences for the direction of the discourse of taking up the child's contribution at that point; finally, his response: '... try and kill it'. Engagement with the one child is subordinated to T's perception of the needs of the group.

The wider significance of this account should be appreciated. T sees Alan, not only as a child in his own right, but also as a type: 'you meet these children from time to time'. How he deals with them, on the evidence above, involves a complex array of judgments. All, however, appear to relate to two imperatives: the thrust of the discourse and the participation in it of the group must be sustained. He cannot attend at length to one child at the expense of the rest of its members.

This evidence of the overriding need to sustain the discourse for the many, whether a sub-group of the class or the class as a whole, appears to be central to the course he takes in the episode described above. It relates to an instance of a

particular discourse variant. I can find no reason, however, to think that similar situations would not occur in other variants or that, if they did, they would not be dealt with in a similar manner.

More is said about the primacy of the group in T's thinking in 8.4.3.2 (below). Before that, the *thinking*-related units I categorise as *failed inferences* (see Table 25, Appendix 3.2.7) warrant attention. I do not read anything into their absence from the whole class expository discourse, for the total number of *thinking* comments associated with this variant is small. These inferences, however, make up 12% of T's *thinking* comments on the small group expository discourse variant and 9% of those on the corresponding reflective variant. In all, 28 comments of this kind are involved, 9% of all the *thinking* items, a number and proportion too large, I believe, to be without significance.

Of the expository variant *failed inference* comments, almost half involve *states*, or, more particularly, *knowledge* (Appendix 3.2.7, Table 22, column 5). Eg. 167 (below) typifies them. In them, T's observations relate to what he sees as a need to make connections between what the children already know and the puja they are meeting for the first time:

eg. 167 </ and uh so that's difficult I don't really know where any of these things we're talking about relate up to what they know about their own you know situation .../ in fact it's very surprising actually very few of them have *acc.in.t.st.kn.ec.g* /... *acc.in.t.st.kn.fi.g* />
(SaBk/SR 17.50b)

In the reflective variant, almost two thirds involve *constructs*. Of these, all but one involve the subcategory *seeing as* (Appendix 3.2.7, Table 24, column 5). They are typified by eg. 168 (below), in which T comments on a child's claim about the significance of people sometimes laughing at wrong-doers:

eg. 168 </ I don't know I don't know whether I've understood that

correctly or whether that's what I or people laughing at other people something like that I don't know whether he
acc.in.t.co.sa.fi.s /... so we're kind of pursuing his point ctd />
 (R1/SR2 26.00b)

In each example, we see that T is working with uncertainty. In one, this involves the children's *knowledge*; in the other, their *constructs*. In the second, we have T's account of how he resolves the difficulty. He pursues his point. Formative activity is involved, immediately shaped by his perceived need to comprehend a child's meaning.

This focus on *failed inferences* is significant in my attempt to understand T's formative practice in two ways. First, it suggests that one feature of classroom reality is that from time to time it involves working with a knowingly uncertain grasp of what the children know, what they are trying to say and how they conceive of the immediate topic in hand. Occasional uncertainty about the children's *thinking or feeling* is as much part of T's consciousness as is his awareness of uncertainties in the children themselves. On the evidence of eg. 168, at least some of T's discourse initiatives are directed at reducing such uncertainty, and formative judgments are integral to the process. Second, what is put forward here buttresses the claim made earlier that mental *states*, especially *knowledge*, are of particular concern in relation to the small group expository discourse variant, and *constructs*, especially *seeing as*, to the reflective variant. T's concerns relate to discourse purposes, even though sometimes his concerns are not immediately met.

8.4.4 Understanding T's concerns: strategic

8.4.4.1 Proposal

A second perspective for understanding T's formative assessment activity involves the acknowledgement of three imperatives that appear to inform his judgments in

relation to all the discourse variants, namely, the needs to maintain the primacy of the group, to sustain the joint intellectual journey and to continuously calibrate his own actions to the needs of the children as he perceives them.

8.4.4.2 The primacy of the group

They'; 'the children'; their': the primary signifiers of a concern for the group, as distinct from the pupils as individuals, abound throughout T's commentaries. As indicated in 7.3.2.9, this concern is predominant in the *thinking*-related references in his commentaries on both expository discourse types. Even in the third, reflective type, its predominance is apparent, albeit more marginally. In his feeling-related references, it is marked in his commentaries on all three types.

I see these phenomena as indicative of the primacy of the group in T's thinking on action. My grounds for this, however, go beyond the observation that group-related comments are predominant in all his commentaries. They embrace, additionally, the wide range of facets of the children's cognition that he takes into account. This is revealed especially by reference to the categories of thinking and feeling indicated in levels 4 and 5 of my analysis. Four examples illustrate this point.

T makes inferences about the group's wants - and sometimes about what it appears not to want (category: *want*):

eg. 169 </.../ Some of their own conversations indicate it is possible for them to see their own stories as myths *acc.in.t.ch.ca.ep.g* /... but it's not a road they seem to want to go down. *acc.in.f.wa.z.en.g* /> (R2/SR 17.00)

He makes judgments about their level of interest (category: *interest*):

eg. 170 </ I sense I can offer this detail .../ because they're so involved.
acc.in.f.eg.z.ep.g /... .../ They almost seem to be enjoying the detail.
acc.in.t.it.z.ep.g /... *ctd* /> (SaDem/SR 12.24)

He infers the children's meanings (*seeing as*):

eg. 171 </ .../ They think of Midas and say the message is about greed.
acc.in.t.co.sa.ep.g /... I take it that they also mean by the plot that
Midas gets his come-uppance and reflects on why.
acc.in.t.co.sa.ep.g /> (R1/SR 25.32)

He speaks of the development of their understanding (*understanding*)

eg. 172 / Here we're only on the first page *idf* / and already we've talked a
 lot about India. *ise* / The children are beginning to get a sense of
place and of people's beliefs. *acc.in.t.st.un.ep.g* / (PA/SR 4.06)

As shown in Chapter 7, the range of such inferences about *feeling* and *thinking*, each with 'the children' or 'they' as the subject, is wide and their occurrence common. This points to a dominant and continuing concern on T's part for the course and nature of the children's involvement, as a group, in the discourses which carry the project forward. In short, regardless of whether he is working with a small group or the whole class, it matters to him what the group thinks and feels. He is thus always alert to, and judgmental about, what he sees as the indicators of group involvement.

Behind this, one might suggest, is an implicit assumption on T's part that the intellectual cohesion of the group, and of his part in leading it, is of paramount importance. Two observations reinforce this conclusion. The first, paradoxically, involves two of his comments about an individual child (egs. 173 and 174, below). Each involves a perceived tension between responding to the pupil as an individual and catering for the dispositions or needs of the group:

eg. 173 / I'm pretty sure I didn't understand Alan. *acc.in.t.co.sa.fi.s* / </
 One problem I have with him [Alan] is knowing when to encourage
 him to repeat what he's said. .../ The others can get very frustrated.
acc.in.f.rl.z.en.g /... ctd /> (R2/SR 4.05)

eg. 174 </ I think part of the problem is is that is that I know that if I
 respond to him it's going to go on some long wheedling round trip
 you know which is which is going to take us miles off .../ because of
 the nature of the kid himself *acc.in.t.ch.sy.en.s* /... ctd /> (SaBk/SR
 12.10b)

The examples are taken from T's comments on two of the small group discourses, one reflective, the other expository. Both show his concern that attention to an individual should not disrupt the work of the group. It is the latter that is of prime importance.

My second observation is foreshadowed in the language of the second of these examples. T is concerned that he should not be constrained into 'some long wheedling round trip ... which is going to take *us* miles off'. The word 'us' here implies a functional unity of the children and T himself. The 'they' and the 'the children' with which I introduced this section become 'us'. In short, it implies an endeavour in which T and the children as a group are jointly engaged.

My final example takes this point a stage further. Again, it involves the juxtaposition of a point made by an individual child against the meanings developed by the group (eg. 175):

eg. 175 </ I left .../ the child's point about mountaineering. The point wasn't
 germane to where we were. *acc.in.t.pr.ge.en.s* /... ctd /> (PA/SR
 24.10)

Here, 'they' and 'us' become 'we'. The joint endeavour is central to T's concerns. He is alert to what may disrupt it. His formative judgments are shaped not least by this imperative.

8.4.4.3 Joint intellectual journey

There is no indication that this emphasis on the group, signalled by the extensive use of ‘they’, and its transformation into a concern for a joint endeavour embracing teacher and children, whereby ‘they’ becomes ‘we’, implies anything other than that T sees himself as the group’s leader or guide. On the contrary, what appears to concern T is that the children should accompany him on an intellectual journey.

This is apparent in two widely used metaphors, each indicative of his concern that the pupils’ thinking and his own should be in alignment. The first, and more common, involves the children being ‘with him’. It is used in a wide range of references. Eg. 176 (below) is drawn from T’s commentary on the whole class expository discourse. It relates to the point at which T introduces the children to a feature of Hindu liturgy:

S29 T ... and then [the priest] prays to various gods / now the first god they pray to always in this Saraswati thing / is Vishnu / OK / so he says / om Vishnu / om Vishnu / OK / the word ‘om’ / you will hear that being used an awful lot by Indians / they use it all the time / right / it’s a very sacred word / right / so they use it all the time / OK / so he goes ‘om Vishnu’ / d’you want to try and say that?

S30 Chdn om Vishnu

S31 T that’s right / OK / and that’s how they start to pray to Vishnu / now I don’t know all the prayers that they say to those gods / right / OK / he doesn’t only pray to Vishnu / they pray to other gods as well / to Shiva

S32 Chdn Shiva

S33 T to Ganesh

S34 Chdn Ganesh

S35 T to Lakshmi / to many other gods as well

(Saraswati Puja Demonstration: Transcript: Appendix 2.2.5)

T's commentary involves two elements. First he notes that the children 'were both repeating and volunteering about the gods'. I have earlier categorised this activity as *generating*, a subcategory of *thinking*. Then T shows what this means for the joint endeavour. The children's *understanding* is inferred: they are 'with him', a matter he evaluates positively. The linked comments are shown below (eg. 176):

eg. 176 </ .../ The children were both repeating and volunteering about the gods. *acc.in.t.pr.ge.ep.g* /... This was telling me they were with me. *acc.in.t.st.un.ep.g* /> (SaDem/SR 9.40)

The joint endeavour is secure.

The factors T takes into account in establishing whether the children are 'with him' or not are wide-ranging. As well as *thinking processes* like those noted above, especially prominent among them are the children's *constructs*: The following example is taken from T's commentary on one of the small group reflective discourses. The possibility that both Hindu and Christian stories might be seen as mythological is being considered. T's concern is for the children's perspective (my subcategory: *seeing as*):

eg. 177 / Their position seems to be that mythology exists in other cultures but not in your own. *acc.in.t.co.sa.ne.g* / </ I'm OK to look at Bible stories in general .../ - they're with me. *acc.in.t.st.un.ep.g* /... ctd /> (R2/SR 9.20)

The implication here is that the children's view of religious stories from their own and other cultures is sufficiently in line with his own to allow him to assume that there is common ground between them. On this intellectual journey, they are 'with him'.

Even laughter offers clues. In eg. 178 (below), T comments on the children's response to his asking what they would think if he claimed that he was the son of a deity:

eg. 178 </ I think um I think .../ laughter in response to something that you do *acc.in.f.it.z.ep.g* /... is um often shows that children are actually right with you *acc.in.t.st.un.ep.g* /> </ .../ they're actually understanding what you're talking about *acc.in.t.st.un.ep.g* /... because they're getting the humour in it right *acc.it.t.st.un.ep.g* /> (R1/SR2 28.38b)

The other metaphor, employed slightly less frequently, but suggestive of the shared journey nonetheless, involves the children being or taking things 'on board'. My example (eg. 179, below) here involves a *negative* evaluation. T infers that the children have not understood the significance of a particular myth. An account of his intention follows his judgment about the children's thinking:

eg. 179 </ .../ They haven't taken that on board *acc.in.t.st.un.en.g* /... so I've dropped it. *ctd* /> / What I'm trying to do is to make the significance of the myth more powerful, to help them to see that the myth is about teaching Kubira a lesson. *ctd* / (R1/SR2 8.55)

A similar judgment about *understanding*, couched in the same metaphor, but this time *positive* and related to an individual, is apparent in eg. 180:

eg. 180 </ .../ I can see Joanne's on board about the moral dimension of some myths *acc.in.t.st.un.ep.s* /... Janapati's about greed. *rkf* /> (R1/SR2 7.11)

In such examples, the suggestion is that T is ever alert to the participation of the group or, less frequently, the children as individuals, in the venture he leads. Both, however, relate to his concern for the joint endeavour.

8.4.4.4 Continuous calibration

By continuous calibration, I mean T's adaptation of his teaching to the needs of the children as he perceives them to emerge in the minute-by-minute unfolding of classroom discourse. This is to be distinguished from the determination of the

course of teaching in the light of assessments of the children's needs in advance of and separately from the teaching itself. The distinction between these formulations is more fully explored in 2.3. The notion of continuous calibration, however, is introduced here. It builds on Bruner's concept of calibration (1987, p. 92: see 4.3), but takes it out of the experimental laboratory and into the complex setting of classroom interaction.

In 5.3.4 (above), I recount how, in the pilot phase of this study, I found no evidence of formative assessment activity in T's work that corresponded to the latter formulation. Nor, in my data, is anything like it visible in the main phase. On the contrary, in the light of both T's commentaries on his work and my own records of its conduct, a distinguishing characteristic of his activity is that adjustments to its direction, pace and intensity seem to be made solely in the light of judgments about the children in the course of what I refer to above (8.4.3.3) as the 'joint intellectual journey'.

In this way, formative assessment in his practice is most appropriately regarded as involving continuous calibration. In 8.4.4.3 (below), I shall argue that this may be understood in the light of T's educational philosophy and, more particularly, his views about curriculum. Here I assert that the approach may be seen as strategic, in that it involves the continuing adjustment of action in the light of the unfolding of perceived circumstance, as distinct from the alternative of the action being determined in advance. To this adjustment, the judgments T makes in the light of the complex array of concerns indicated above are pivotal. Each of the judgments made on the local plane (see 8.4.2, above) may thus be further comprehended by considering it from this strategic perspective. Eg. 181 (below) illustrates the way in which a particular judgment about the children's perception of Hindu deities relates to an issue for T about how much of his own understanding he should put at their disposal:

eg. 181 <</ I'm trying to make the Hindu idea of god understandable by making connections back to our own culture. ...</ I know I can do it .../ because the children are so interested in the idea of many gods in one. *acc.in.f.it.z.ep.g /... ctd />... ctd />> / I've heard them reminding each other in the course of their work that they're all part of one god. *acc.in.t.co.sa.ep.g / </ .../ In my understanding, the priests, the Brahmin, the educated classes have an essentially monotheistic view, but with many dimensions. The many forms which on the surface gods take is a way of making this meaningful in a popular, agrarian, culture. *rkf /... One of the problems about all this is my own understanding and what I do with it. What aspects of it do I make available? ctd /> (R2/SR 2.26)***

The issue here is a local and immediate one. But T's frequent rehearsals of his knowledge of the field suggest that what he makes available to the children is but a small part of his own understanding. Judgment about when and how much to reveal of it is thus a continuing issue. This is but one example, in which he indicates how his judgments about the children's interest and talk about the gods enter into the calibration of his subsequent action.

8.4.5 Understanding T's concerns: educational philosophy

8.4.5.1 Proposal

The concerns that underpin T's formative assessment practice may be understood from the broadest perspective in terms of his educational philosophy, by which, following Carr (1995), I mean what is 'more or less implicitly contained in the common-sense assumptions, values and beliefs underlying [his] everyday practical activities' (p. 53).

8.4.5.2 Formative practice embedded in a personal educational philosophy

In 5.3.5 (above), I gave my reasons, as they stood in the first phase of this

investigation, for considering T's personal educational philosophy. It was a matter of establishing what T's practice was typical of, an imperative central to any consideration of the significance of my study. I did not anticipate that questions about his philosophy would matter for anything other than this. Yet, the further the second phase proceeded, the more I saw that they were integral to my developing understanding of his formative practice itself.

At the root of this growing awareness was a single question: how does one account for T's seemingly continuing and compelling concern for the children's *thinking* and *feeling* manifested in his commentaries on his practice, a concern differentiated most obviously in terms of its object, but also in relation to the discourse variants involved? The answer that has gradually taken shape confirms my earlier readiness to regard T's approach as steeped in progressivism (see 5.3.5). But it involves an awareness of the intricacies, interrelatedness, and thus, I contend, cohesion of T's concerns that had escaped me in my initial investigation. This cohesion is reflected ultimately in the broad philosophical location of T's work noted above, but also at a more particular level in a range of assumptions, some implicit in his commentaries, others made explicit, about what underpins his work. In short, they involve 'the common-sense assumptions, values and beliefs underlying [T's] everyday practical activities' (Carr, *ibid*) that constitute a personal educational philosophy. In what follows, I show how T's formative assessment practice may be understood in the light of four of its elements: his view of curriculum; assumptions about what constitutes intellectual development; assumptions about learning and teaching; and his assumptions about the role of language.

8.4.5.3 Formative assessment and curriculum realisation

I have indicated above that concerns for what the children are interested in, what

they readily engage with and what they want and do not want are prominent in T's commentaries. His judgments about them, as shown in 8.4.2 (above) are widespread. As seen in eg. 182 (below: also visited above), which relates to T's demonstration of the Saraswati puja and must stand for many more examples of this kind, they involve decisions about when to press forward, hold back, offer richer detail, and much more. :

eg. 182 </ I'm seeing that the more detail I go into, .../ the more rapt they become. *acc.in.f.it.z.ep.g /... ctd />* / I hadn't been sure whether I would be able to take them this far into this. *ctd / </ I'm beginning to feel that the more I concentrate on the detail of ritual, .../ the more they are with me acc.in.f.eg.z.ep.g /... and the further I can go. ctd />* (SaDem/SR 12.24)

It might be argued that decisions like this involve no more than the normal prudence of any participant in a verbal interaction: continue where responses are positive; stop where they are not. More particularly, from a teacherly perspective, it might be said that this is no more than a response to a didactic imperative, albeit one sensitive to the children's enthusiasm to know more. In the light of T's further comments (eg. 183, below), however, other possibilities may be seen:

eg. 183 / I'm beginning to wonder whether I will be able to help them to get the significance of this, *ctd /* but beginning to think there is some possibility of it by letting things run. *ctd /* I'm starting off by offering the children an experience, beginning to see how I can help them to make sense of it. *ctd /* I have a very general game-plan, very open-ended. It's to offer them something that will make it possible to open further doors. *ctd /* The moment you have just one door in mind, you shut down the possibility of opening all the others. *ctd /* (SaDem/SR 12.24)

It is not that conversational prudence or didactic pressure are irrelevant, but rather that much more than either, or even both, appears to be involved in T's judgment. Here is a view of the day-to-day curriculum, one guided by a 'very general game plan, very open-ended', that begins with experience, eschews having 'just one door in mind', but rather makes it 'possible to open further doors'. The openness

of this view of curriculum, together with its particularity, are yet more apparent in his final comments on the Photo Album discourse (eg. 184, below):

eg. 184 The general run these days is to have aims and objectives and activities through which they can be realised and each child should be conscious of them. What I do doesn't fit this at all. You can't have such explicit things available. When you're moving into a new area, you just can't predict what children will respond to. You must leave things open. They must remain open because I've set up a situation in which I'm an equal partner making sense of India. What the children offer is just as important as what I offer to them. Obviously we're not equal in the sense of experience, but we must remain equal partners, otherwise opportunities to build on their points will be shut down. Choosing objectives shuts all this out. But the conversation still flows through me. (PA/SR Afterword).

In this T sets out a view of curriculum and teaching within the progressive tradition, as defined in 5.3.5, above all in its openness, responsiveness to children and notion of partnership. To understand T's action, however, one must see that such principles are not merely rhetorical. Their consequences are visible in his practice at every level, not the least of which involves formative assessment. It is through his assessment practice, viewed as argued above as continuous calibration, that the open-ended curriculum is made. Indeed, this is the only way in which it could be made, for otherwise it would not be open-ended.

Even within this, however, choices about immediate focus must be made. The allusion to equality of partnership and the implicit imperative of building on the children's points offer a partial explanation of what guides them. Formative assessment in this respect embodies attentiveness to what the children show interest in, what they especially engage with, what they do and do not want, which, once identified, shape further activity. Such principles for action are value-laden, in that the children's perspectives are prioritised. In the sense offered by Carr, they are philosophical.

While acknowledgment of the value placed on the children's perspectives is thus

necessary to an understanding of T's formative practice, it is not by itself sufficient. Other matters must also be taken into account. Among them are T's views about what is worthwhile for the children to learn. These appear to operate at at least two levels. In eg. 185 (below), we have evidence of one:

eg. 185 </.../ They haven't taken that on board *acc.in.t.st.un.ep.g* /... so I've dropped it. *ctd* /> / What I'm trying to do is to make the significance of the myth more powerful, to help them to see that the myth is about teaching Kubira a lesson. *ctd* / </.../ But they don't take that *acc.in.t.st.un.en.g* /... so I come back a bit. *ctd* /> (R1/SR2 8.55)

In this instance, T's view of what is worthwhile relates to a particular myth. His formative judgment is about whether the children understand what is needed, and what he should do in its light. Indicators of such judgments and the specific notions of the worthwhile that underpin them, some implicit, others explicit, are widely available in the whole body of his comments.

A further level of aspiration is evident in other comments, as in eg. 186 (below), taken from T's preliminary observations on the Photo Album discourse.

eg.186 / The whole idea started in the previous term when we were looking at planets. *ise* / The names of planets interested the children *acc.in.f.it.z.ep.g* / and led to us looking at Greek stories, *ise* / to which the children responded with interest. *acc.in.f.it.z.ep.g* / From this, I thought it would be good to do something about mythology, not just with regard to the Greek myths, but rather to look at the significance of myths in human experience. *ctd* / (PA/SR Preliminary)

Here, the aspiration is of a different order: not the significance of a particular myth, but rather the significance of myths in human experience: the general, as distinct from the particular. Initially, I wondered how the first level of judgments and the specific indications of worthwhileness that underpinned them could be reconciled with this more general aspiration and the openness of curricular conception noted above. As I read and reread T's comments, however, I began to understand how it

was possible and what part formative assessment played in bringing them together. First, there was no evidence that T set out with particular myths in mind. Instead, there was much evidence of what may be termed a ‘value-guided’ or ‘principled opportunism’ on his part. His attentiveness to what the children find interesting, engage with and want, has already been noted. I have seen this initially in terms of his commitment to seeing the children as equal but different partners in learning (see eg. 184, above). From this perspective, his practice is built on the importance he attaches to their feelings, a value position in its own right. Now, however, I also see how judgments about particulars make sense in terms of his more general aspirations. I offer T’s comments in eg. 187 (below) as illustration. They relate to a discussion about the exercise of power:

eg. 187 </ I’m raising questions about right and wrong exercise of power .../ because this is constantly explored in myths. *rkf* /... *ctd* /> / This myth is raising that question. *rkf* / As curriculum, it’s potentially worthwhile asking. *ctd* / </ Psychologically, I think it’s possible at this point. .../ The children are talking about using power. *acc.in.t.pr.fc.ep.g* /... *ctd* /> (R1/SR1 M141)

I have no reason to believe that T’s prior intention was to consider this issue, nor even the particular myth which generated the discussion to which these comments relate. More plausible is to see what transpired in terms of principled opportunism. The immediate thrust of the discussion arose from an assertion by Alan that ‘Basmasura was greedy’ and his further claim, in response to T’s invitation to explain, that it was ‘because he wanted some power’ (Transcript, M 126-128: Appendix 2.2.2). Neither assertion was predictable. Yet T recognises their curricular potential. The exercise of power ‘is constantly explored in myths’. This myth in particular deals with it. Psychologically, he judges, it is ‘possible to deal with it’: the children ‘are talking about using power’.

By ‘principled opportunism’, I mean two things. First, T’s actions are guided by the moral imperative of working with the grain of what the children regard as

interesting and willingly engage with, and with the way in which they deal with it. Second, it responds to unpredictable particulars in the light of an overarching general aspiration for worthwhile learning, here involving an appreciation of ‘the significance of myths in human experience’ (from eg. 186, above). For example, the opportunism in eg. 187 lies in recognising the potential for worthwhile learning offered by the fact that, in relation to a particular myth one of them has lighted upon, the children are talking about power. The general idea can be explored at a particular level.

In all this, formative assessment may be understood in terms of mediation between T’s preformed overarching curricular aspiration and the unpredictable opportunities for relevant worthwhile learning that occur as the children engage with subject material. It is what enables him to sustain an open-ended curriculum in a potentially worthwhile manner.

8.4.5.4 Formative assessment and the notion of intellectual development

T’s assessment-related comments are replete with assumptions, some explicit, some implied, about what constitutes worthwhile intellectual development. A number of strands are apparent.

One relates closely to the discussion in the previous section about the particular and the general. Its implication is that worthwhile development in the children’s thinking is manifested in, among other things, their grasp of the general, as distinct from the merely particular, and in movement towards principle. The former is implicit in his assessment of the children’s newly constructed understanding in eg. 188 (below):

eg. 188 </ But I'm letting it run .../ because they're staying with it, *acc.in.f.eg.z.ep.g /... .../* making significant points. *acc.in.t.pr.ge.ep.g /... ctd />* / They seem to have arrived at a position where they can discuss the idea of myth, rather than particular myths. *acc.in.t.st.un.ep.g / (R2/SR 11.33)*

In 189 (below), which relates to the opening stages of one of the discourses, where T is telling the children that they will talk about myths in general (Transcript, M8 ff.: Appendix 2.2.2), his espousal of this notion of development is made explicit:

eg. 189 R1/SR2 1.29 /This is difficult. *ctd /* The children tend to get into particular things *acc.in.t.pr.fc.en.g /* and I'm trying to help them to get into general issues. *ctd /*

A second strand involves a view of development as movement towards principle. T's comments in eg. 190 (below) illustrate this:

eg. 190 / I've also extended things from Mary and Joseph in particular towards Bible stories in general to nudge them towards principle. *ctd /* Their position seems to be that mythology exists in other cultures but not in your own. *acc.in.t.co.sa.ne.g / </* I'm OK to look at Bible stories in general .../ - they're with me. *acc.in.t.st.un.ep.g /... ctd />* (R2/SR 9.20)

The indication of T's implicit judgment here is that the children's construct of mythology leaves room for further development in the direction of principle. 'Principle' here appears to imply reasoned generalisation. The formative process starts with the judgment that the children's understanding of Bible stories provides a platform for development in the desired direction.

A third strand encompasses the refinement of the children's thinking. This is apparent in eg. 191 (below), in which T speaks about encouraging the children to see that their own culture, like others, has myths, a matter approached cautiously:

eg. 191 <</ I treat going any further with a great deal of caution. ...</ The big idea is about people seeing their own religious ideas as mythological, .../ even though they [these children] don't. *acc.in.t.co.sa.en.g /...*

*rkf />... ctd />> </ I'm helping them to refine .../ their position
acc.in.t.co.sa.en.g /... to see their own stories as mythological. I'm
testing the water, seeing how far we can go. ctd /> (R2/SR 12.30)*

As in eg. 192 (below), it may also involve making fine distinctions:

eg. 192 / I think they've now agreed that Orpheus isn't a moral message tale and that it's about something other than this. *acc.in.t.pr.ag.ep.g /* The Midas myth is a moral message. This one isn't. *rkf /* Now there's a need to look at other myths. *ctd /* (R1/SR2 7.00)

A fourth, closely related, strand involves the desirability of greater precision in thinking. As in eg. 193 (below), which relates to reflection on the Orpheus myth, the formative process may lead to the introduction of more precise language. Interpreting what one of the children says as an indication that she understands Orpheus's predicament, T offers a word that encapsulates the feelings involved:

eg. 193 </ .../ Ady has said 'shaking' *acc.in.t.pr.ge.ep.s /... It tells me she's
seeing the intensity of feeling acc.in.t.st.un.ep.s /> /* I'm helping her
to sharpen this with 'panic'. *ctd /* (R1/SR2 5.51)

More is said about T's assumptions about language in 8.4.4.6. Meanwhile, note should be taken of what is common to each of the last five examples. In one way or another, each reflects the value T places on understanding. So much is implied by his references to 'the idea of myth' (eg. 188); 'the general issues' (189); the 'big idea' (191); the children's agreeing that the Orpheus myth is 'something other than' a moral tale (192); and Ady's 'seeing the intensity of feeling' (193). Intellectual progress, then, involves the children's development of understanding.

All the examples used so far relate to the small group reflective discourses. All involve notions of development in the sense of movement to a higher plane of thinking, whether it involves generalisation or greater refinement of thought. In each case, the formative assessment process is understandable in the light of T's valuing of such development and needing to determine the means of bringing it

about. Notions of development are less apparent in the expository discourses, however, and where they are visible they appear to involve slightly different assumptions of what is entailed. In the main, they involve judging the children's openness to further detail, as in eg. 194:

eg. 194 / The details like touching the statue are important. By imparting the detailed I think I'm imparting something of the nature of ritual itself. *ctd* / </ I sense I can offer this detail .../ because they're so involved. *acc.in.f.eg.z.ep.g* /... .../ They almost seem to be enjoying the detail. *acc.in.f.it.z.ep.g* /... *ctd* /> (SaDem/SR 12.24)

From one perspective, offering greater detail may be seen to involve the accretion of the children's knowledge, and thus to make understandable the preponderance of *knowledge over understanding*-related comments on the expository discourses noted earlier. Even here, though, the notion of development as movement towards the general or principle ('the nature of ritual itself') is hinted at, and the formative process becomes understandable in this light.

8.4.5.5 Formative assessment and assumptions about learning and teaching

Similarly, T's comments are replete with indications of his assumptions, some explicit, others implied, about learning and teaching, and the relationship of both to the development of understanding. In this quest to understand his practice, I attend to two sub-themes especially.

One involves the appearance in his comments of variations on the phrase 'beginning to see'. Egs. 195 (below) is typical:

eg. 195 / 'won't be able to cuddle somebody' suggests she sees power in very concrete terms. *acc.in.t.co.sa.en.s* / I'm just fishing around the concept of power in relation to this myth. *ctd* / [This myth is] immensely complex. *rkf* / She's identified 'power' with 'strength'. *acc.in.t.co.sa.ep.s* / She's beginning to see more in the notion of

power than this - power to effect change, to bring about someone's death. *acc.in.t.co.sa.ep.s / (R1/SR2 11.12)*

What matters here is the contrast between T's initial judgment about a child viewing power 'in very concrete terms' and the subsequent one about her seeing 'more in the notion of power than this'. The first highlights the limitations of the child's construct, the second the beginnings of something more powerful. Alertness to signs of the beginnings of development, especially with regard to understanding, is prominent in T's commentaries. It suggests that T is especially interested in 'embryonic understanding'. The phrase is his. He uses it, for example, in his early comments on the children's first encounter with the photo album (eg. 196, below):

eg. 196 / There's nothing that will necessarily develop, but every child could make an embryonic understanding, particularly by relating what they saw to their own experience. *ctd / Here we're only on the first page idf / and already we've talked a lot about India. ise / The children are beginning to get a sense of place and of people's beliefs. acc.in.t.st.un.ep.g / (PA/SR 4.06)*

What is embryonic, one may assume from this, has the potential to become something more fully fledged: here, by implication, a deeper understanding of place and people's beliefs. Behind this is an assumption about learning, namely that it may develop from small beginnings. There is also an implicit view of teaching: it can assist, here, for instance, by helping the children to relate what they see in the album to their own experience. Within this framework, formative assessment's role may be seen as central: it involves an openness to what may be embryonic in children's thinking, as a necessary condition for shaping the teaching that will assist its development towards something more powerful.

The other sub-theme involves a further assumption about the development of understanding, namely that it rests on the connections the children are able to make between what they already know and what they newly encounter and the

teacher's part in lending support. This is seen in eg. 197 (below):

eg. 197 <</ I'm trying to make the Hindu idea of god understandable by making connections back to our own culture. ...</ I know I can do it .../ because the children are so interested in the idea of many gods in one. *acc.in.f.it.z.ep.g /... ctd />... ctd />>* (R2/SR 2.26)

As in this example, many of his comments explicitly use the term 'connecting' or its grammatical variants. Elsewhere, as in eg. 198 (below), in which T refers to the language he uses in his demonstration of the puja, the significance attached to connecting is implicit:

eg. 198 / The language, 'Saraswati has come among us', is very Biblical, Christian, Pentecostal. *rkf / </ I remember thinking at the time that this language was appropriate to the situation .../ and that it [this language] would be meaningful to them. acc.in.t.ch.ca.ep.g /... ctd />* (SaDem/SR 16.56)

By connecting the (assumed) familiar, Christian, forms to the (unfamiliar) Hindu, understanding may be made. T's comments on the subsequent reflective activity, in eg. 199 (below), support the interpretation:

eg. 199 <</ I'm trying to make the Hindu idea of god understandable by making connections back to our own culture. ...</ I know I can do it .../ because the children are so interested in the idea of many gods in one. *acc.in.f.it.z.ep.g /... ctd />... ctd />>* (R2/SR 2.26)

The importance of 'making connections' is explicit. Teaching is consciously geared to helping the children to make them, although it is appreciated there is no guarantee that they will succeed (eg. 200, below):

eg. 200 </ Reinforcing .../ the connections we made. *ise /... ctd />* I start off by saying it's not like our religion, then recall something from a previous session. *ctd / This reflects what for me is an aspect of learning: making connections. I always feel it's worth while making connections explicit. What they do inside their own heads may be another matter. ctd /* (R2/SR 2.00)

T's assumption of the uncertainty of teaching's outcomes features in an equally

general comment (eg. 201, below):

eg. 201 / This shows this isn't just delivery. You can impart things from outside, but what children learn from it is hit and miss. They'll go on learning anyway, but I'm trying to be part of their learning, their sense-making. *ctd* / (SaDem/SR B1.39)

These allusions to an inescapable uncertainty of teaching outcome must be taken into account in any attempt to understand T's formative assessment practice. I have already argued that his close attentiveness to what the children find interesting and willingly engage with is a manifestation of his espousal of a particular approach to curriculum and how teacher and pupils should relate. By noting this awareness of uncertainty, we gain a further perspective on his assessment activity. From it, we can see how his attentiveness to the children reflects not only his curricular stance, but also his view of teaching and learning. By his alertness to what the children from their own experience know and do not know, what they do and do not understand, what they are and are not open to, he can shape his teaching in a manner that makes forming connections most likely. Moral imperative and psychological prudence coincide.

8.4.5.6 Formative assessment and assumptions about language

In eg. 193 (8.4.4.4, above), we see T saying that he helps the children by introducing a particular word ('panic') to the discourse. His belief that he can do this stems from his evaluation of a child's immediate contribution to the interaction ('It tells me she's seeing the intensity of feeling'). Therein lies the formative judgment. An implicit assumption is involved. It is of a general order. Precise language engenders precision in thought (already noted as a desirable end).

T's comments on this occasion are among many that involve references to his own use of language in ways that he believes support the refinement of the children's thinking. Together, they point to a general readiness on his part to use language

for this purpose. The general observations he adds to his more particular comments on another incident make this clear. I take the particular comments first, in eg. 202 (below):

eg. 202 / I can see they've identified that myths can carry messages *acc.in.t.st.un.ep.g* / and that we've exemplified it through king Midas. *acc.in.t.st.un.ep.g* / I can help them to see it as a moral message, explicitly using the term 'moral'. *ctd* / I think I'm comfortable about using of 'moral message', because I'm using it in context. *ctd* / (R1/SR2 4.18)

In this, the formative assessment process is readily apparent. It culminates with T's introduction of the term 'moral' to the discourse. His licence stems from his assessment of the children's understanding, together with his awareness of the context in which the word will be employed. Of importance to our quest to understand T's practice here is the sense in which this is a deliberate act. He comments on the issue thus (eg. 203, below):

eg. 203 / I'm very committed to the idea of the interconnectedness of language and thought. *ctd* / I don't shy away from the use of terms. Without this, intellectual development is hampered. *ctd* / Using 'moral message' is very deliberate. *ctd* / Even though it happens on the spur of the moment here, it grows out of a broad stance. I don't have to be conscious of this at the time. I just behave in a way that is consistent with it. *ctd* / (R1/SR2 4.18)

The comments confirm what has already been asserted: T's formative practice assumes that language and intellectual development are interconnected. But they also involve what at first sight appears to be a contradiction. I was for some time unsure about how, in T's mind, an action could be both deliberate and done on the spur of the moment. The problem was resolved as I considered his other assertions. What he did '[grew] out of a broad stance'. This he did not have to be conscious of, but rather to behave consistently with.

Now I see that T's actions could be deliberate in the way that riding a bicycle is deliberate. That is to say, it is goal directed and done consciously, in the sense of

with regard to destination, adjustments in the light of road conditions, and so on. It does not, however, involve conscious reference to balance, acceleration and braking, matters that might be regarded as components of the competent cyclist's 'broad stance'. Rather, it involves riding in a way that is, for the most part, consistent with them. This parallel led me to think about the nature of the broad stance that T said he was not conscious of in the course of immediate action, but with which he behaved consistently nonetheless. With his assertions about language and intellectual development in mind, I wondered what its components might be and how, if at all, they might shed light on his formative assessment practice.

My answers came from T's commentary on one of the reflective discourses. Aware of his interest in Wittgenstein, I had interposed to ask if this had had any bearing on observations he had already made. His response is below (eg. 204). Unpremeditated and lengthy, I give it in part only (for whole, see transcript R1/SR2 Plain):

eg. 204 / it is like that really it is like that it's like it's like introducing them into another language game all the time you know *ctd* / we believe this so perhaps we can consider this and you know *ctd* / </ and then before you know where you are which is why partly why I don't tame my vocabulary .../ because part of the vocabulary of that language game is actually is the meaning actually enshrined within it you know *ctd* /... *ctd* /> </ I think the whole idea of language games is such a powerful .../ because underlying it is something is something very cognitive you know *ctd* /... *ctd* /> </ that when you enter a language game you're not just entering a new vocabulary .../ you're entering actually a new world a new way of understanding something *ctd* /... *ctd* /> (R1/SR2 28.38c)

These comments, more than any others, have shaped my understanding of T's perception of language in teaching, and, in relation to it, of the role of formative assessment. They suggest that at its core is a view of teaching as the development of meaning through the induction of children into particular language games. The notion of language games is Wittgenstein's, as is the associated dictum that 'the

meaning of a word is its use in the language' (1953, para. 43). These games, through their particular ways of using language, embody particular ways of thinking about the world. I find it helpful to see T's role in the discourses in terms of two, played concurrently. One relates to the content of the discourses. The other involves their tenor.

In the first, what is apparent is the way in which T inducts the children into language forms that make it possible to discuss content in an increasingly informed manner. For the most part, this involves vocabulary. We have already seen this in eg. 193, with the introduction of the word 'panic'. Eg. 205 (below) further typifies this, while also elucidating a justification that goes beyond what is needed for the children to see the significance of the myths receiving immediate attention: the children 'can store [the word 'tragedy', and therefore the notion of tragedy] away as a characteristic to help them to connect with other tragedies as we meet them':

eg. 205 / I've given them a word there, a concept. *ctd* / </ I definitely felt able to do that [give them a word, concept, i.e., 'tragedy'] .../ because of our previous discussion *ise* /... .../ and now they're seeing that the Orpheus and the Perseus myths are different. *acc.in.t.co.rl.ep.g* /... *ctd* /> / By giving them the label 'tragedy', they can store it away as a characteristic to help them to connect with other tragedies as we meet them. *ctd* / It's the connection between language and thought that I'm interested in. *ctd* / (R2/SR 6.05)

The role of formative assessment in drawing the children into the language game, in which the significance of myths is under consideration, is apparent. T seizes the opportunity offered by what he perceives as the children's recognition of the different significances of the Orpheus and Perseus myths to introduce a particular label, 'tragedy'. Possession of the concept will enhance their awareness of the differences between the myths. It will also help them in their encounters with other tragedies. There are many instances of this kind.

The other, concurrent, language game involves tenor. While T does not use the

term ‘tenor’, there is much evidence from his comments to suggest that he has differentiated views about the ways in which the discourses are conducted through language. I want to highlight three. First, as seen in eg. 206 (below), he emphasises joint participation. This is a language game in which the children, as well as T, participate, and it involves thinking:

eg. 206 / that’s important. I’m setting up the rules. *ctd* / This is not a question and answer game. We’re all going to be thinking about this together. *ctd* / I’m emphasising what they think as well as what I think. *ctd* / (R1/SR2 0.25)

In relation to this, his formative attentiveness is commonly directed to considerations about the children’s participation in the discourse, their questions as well as his own, as in eg. 207:

eg. 207 / The child who asked, ‘Why?’ sounded almost upset. *acc.in.f.px.z.en.s* / I almost felt upset myself. *ctd* / </ Recognising .../ she was [upset] too *acc.in.f.px.z.en.s* /... made me feel an explanation was needed. *ctd* / When a child asks a ‘why?’ question, my ears prick up. It demands attention. ‘Why?’ questions are not to be fudged. *ctd* / (SaDem/SR B8.40)

Second, as seen in eg. 208 (below), it prioritises reasoning and the production and testing of evidence:

eg. 208 / and yet you know I challenge the children well ‘how d’you know?’ you know ‘how would you know?’ and ‘why would why would you not believe it?’ right *ctd* / (R1/SR2 28.38a)

In practice, these challenges take many forms. In eg. 209 (below) we see T’s explanation of why on one occasion he invites the children to assent to a proposition about one of the gods, itself a form of reasoning, together with an indication of how he judges their responses:

eg. 209 </ .../ ‘Are you happy with that?’ [T’s question to children] this characterises the object of the exercise - helping the children to clarify their own position preparing the ground for further sense-making *ctd* /... I’m definitely conscious of doing this [preparing ground] *ctd* /> </ and that they are clear in their own minds. .../ It’s their noddings of agreement and their interjections and how they all fit. *acc.in.t.pr.ag.ep.g* /... *acc.in.t.st.un.ep.g* /> (R2/SR 8.15)

Satisfied not only with signs of their assent, but also with ‘how they all fit’, the sense-making can go forward.

Third, it involves the licensing, even encouragement, of tentativeness. In eg. 210 (below), this is made explicit. T’s comments relate to a point in his exposition of the puja ceremony at which a child asks why the priest rocks the pitcher:

eg. 210 / That’s funny, that. *ctd* / </ Did you hear that? I’ve just offered my explanation for the breaking of the thread in response to .../ a child’s question. *acc.in.t.pr.ge.ep.s* /... *ctd* /> </ It’s .../ the question *acc.in.t.pr.ge.ep.s* /... plus the unwinding of the thread that triggers the explanation. *ctd* /> / My tentativeness is signalling it’s OK to offer tentative explanations. *ctd* / This is what we do in this class *ctd* / (SaDem/SR B7.35)

Important for our understanding here are T’s final observations: ‘My tentativeness is signalling it’s OK to offer tentative explanations. This is what we do in this class’. I assume that the tentativeness to which he refers relates to his response to the child’s question: ‘I don’t know / I’m not really sure’ (Transcript, S125: Appendix 2.2.4). The correctness of this assumption, however, is immaterial. What matters is T’s account: what it says about the tenor of the discourse he wants to foster, about how the action to which he refers arises out of his perception of the child’s question and about the kind of answer he is prepared to give. In short, formative assessment here may be understood in terms of his aspirations for the conduct of this discourse.

These three things, the insistence on the joint endeavour, the encouragement of reasoning and the licensing of tentativeness, which could be seen as principles, in

so far as they inform T's action, as well as his subsequent thinking on action, give the discourses their tenor. They also help to explain T's attentiveness to the children's questions, their embryonic understanding, and so on, along with his own contributions to the discourse in the light of the continuing judgments he makes. In short, at this third level of understanding, they help to account for his formative activity.

8.5 THEORETICAL UNDERSTANDING

8.5.1 Theoretical understanding of T's assessment activity

In 8.5, I propose a way in which T's formative assessment activity may be understood theoretically. Following Maxwell (op. cit., p. 291), such understanding involves two components: the concepts used to render the subject matter comprehensible and the relationships that are proposed to exist between them.

8.5.2 Range of concepts

The concepts I employ in shaping a theoretical understanding of T's activity are shown in italics below. They serve serve four broad purposes and are thus of four kinds.

The first relates to my need to describe the activity's structure. It includes the concepts of *project*, *episode* and, most importantly, *discourse* and *discourse function* (or *discourse purpose*). Some of these are of a quasi-physical nature, as in *individual* (in my category system, *single*) and *group* and *whole class* (both referred to as *group* in the category system). The second involves the notion of formative assessment as *continuous calibration*, as distinct from such assessment

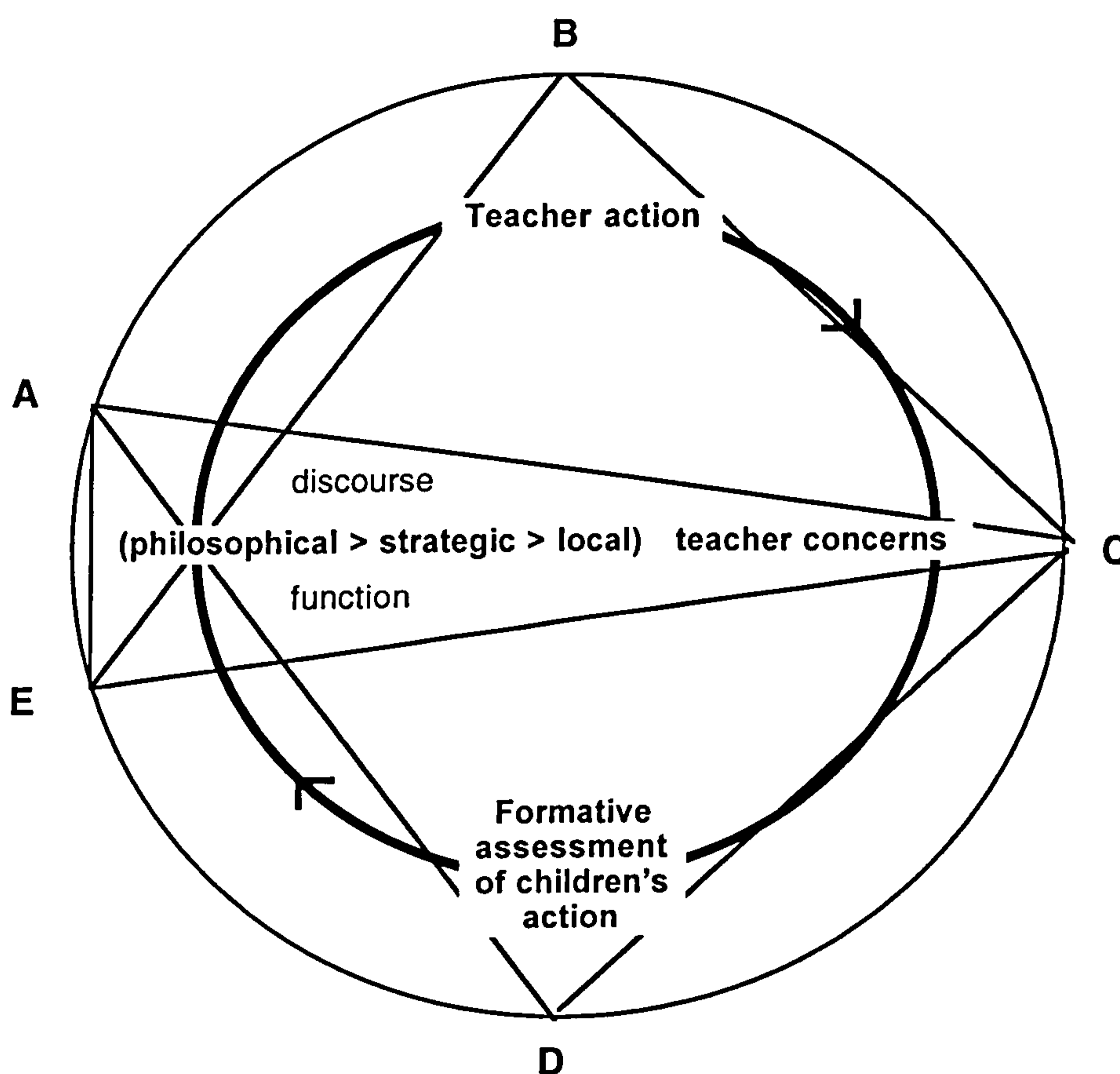
as a discrete activity located at or near the beginnings of teaching episodes.

The third relates to my interpretation of T's mental life. Most immediately, this involves what I portray as his assessment *concerns*, the elements of his psychological reality that pertain to formative assessment. Their highly differentiated nature is portrayed in the category system summarised in Fig. 2 (Appendix 2.2.1). I further propose that the three perspectives from which these concerns may be usefully viewed (8.4, above) have their counterparts in T's psychological reality, or *consciousness*, as it pertains to teaching. They involve the same elements, namely the same concerns regarded hierarchically, from the *local* to the *strategic* and the *philosophical*. I give my warrant for this claim in Ch. 9. The fourth involves the concept of *action*. This includes action by both T and the children. These concepts have been introduced in earlier sections.

8.5.3 Theoretical understanding: relationship of concepts

My aim is to offer a theoretical understanding of T's formative assessment-related thinking in everyday continuing classroom spoken discourse. I propose that this may be done by depicting the relationships that I believe to exist between the concepts of *consciousness*, *discourse function*, *assessment concerns*, *continuous calibration* and *action*. My account of the interrelationship of these concepts is summarised in Fig. 13:

Fig. 13 Formative assessment as continuous calibration: a cycle of assessment and action

**Key**

Within outer circle	T's overall teaching consciousness
Inner circle	formative assessment cycle
Triangle ACD	relationship of T's concerns to formative assessment
Triangle BCE	relationship of T's concerns to his action
Triangle ACE	interrelationship of levels of concern

The key point of this is its depiction of formative assessment as part of T's continuing consciousness as it relates to the children's action and his own. It may be seen as an application to the classroom of a thought broached in 4.5, namely that human action might be regarded as involving both interpretation - of context and of the meanings of others within it - and the intentionality (and all that lies behind it by way of values, beliefs, and attitudes) and capacity to make choices of the agents involved. My model focuses on the consciousness of the agent whose choices this study is about. That is to say, the teacher.

I make eight assertions about the figure. Together, they offer a theoretical understanding of T's practice.

- T's practice involves the continuous calibration of his action to the children's educative needs, as he judges the latter to be in the light of his interpretation and evaluation of their action. This continuing cycle of action and assessment, or *continuous calibration*, is symbolised in Fig 13 by the inner, bold circle;
- T's tendency to make judgments about the children as groups, as distinct from individuals, is signified by the use of the plural 'children' in the figure;
- How T assesses the children's action is shaped in part by concerns that are local, strategic and, ultimately, philosophical in nature. The relationship of these concerns to each other and to the process of assessment is symbolised in Fig. 13 by triangle ACD;
- It is also shaped by his awareness of the function of the discourse in which the action occurs. This is symbolised by the inclusion of discourse function within triangle ACD;
- The overarching nature of the philosophical concerns, and of the strategic over the local, are symbolised by the '>' signs which connect them;
- The philosophical concerns pertain not only to T's immediate practice, but also to his consciousness about teaching generally. This wider consciousness is symbolised by the outer circle. The relationship of T's philosophical concerns to both this wider consciousness and the cycle of continuous calibration is symbolised by the location of triangle ACD within the outer circle as well as, in part, within the inner;

- The relationship of T's action to his assessment concerns and discourse awareness is symbolised by the overlap of triangles BCE and ACE;
- The relationship of his action to his assessment of the children's action is symbolised by the overlap of triangles BCE and ACD;
- This overlap, in which T's concerns and awareness of discourse function are identified, demonstrates the centrality of these concerns and his awareness of discourse function to the calibration process.

The validity and significance of this account are considered in Chapter 9. Continuous calibration, in the sense used here, is quite different from the 'continuous teacher assessment' portrayed as 'part of everyday teaching and learning' (SCAA, 1993, p. 24) by a number of authorities for whom the term appears to imply no more than the informal gleaning and accumulation of judgments for later use. Its essence, on the contrary, lies in the immediate and continuous adjustment of action in the light of judgment.

8.6 CONCLUSION

I conclude from these deliberations that T's formative practice can be understood from three perspectives: local, strategic and philosophical. The first perspective is local. It involves T's concerns for the children's thinking and feeling, and the subcategories and sub-subcategories of thinking and feeling considered in chapters 7 and 8. From it, T's actions may be understood in the light of the immediate and ever present urge to move the educative discourse forward in the light of particular discourse purposes, an urge which must constantly be reined in or given its head in the light of judgments about the children's intellectual and emotional readiness to advance.

The second perspective is strategic. Here understanding involves recognising three imperatives that appear to inform T's work: maintaining the primacy of the group, sustaining the joint intellectual journey and keeping up the continuous calibration of his action to the perceived needs of the children. My claim here is that, in the concerns that underlie his formative judgments, he is continuously alert to signs of what strengthens or undermines the group as a learning unit, to whether this involves the whole class or a smaller sub-set of its pupils, and to indications of whether the joint intellectual journey is being sustained or put at risk.

The third involves T's personal educational philosophy, as this concept is defined in 8.4.4.1. This embraces T's view of curriculum, his assumptions about what constitutes intellectual development, his assumptions about learning and teaching and his assumptions about the role of language. I do not claim that this is an exhaustive account of T's philosophy, nor do I assert that the four dimensions listed above account for all that he does that could be seen as formative assessment. I do, however, claim that they are sufficient to show that, at this level, the concerns that inform his formative assessment practice are informed by general principles of a philosophical order, and that acknowledgment of them is essential to an understanding of his practice. I do not assert that these principles are consciously in mind as T works, but, using his words, do say that he 'behaves in a way that is consistent with [them]', and that understanding what he does must acknowledge this consistency. Further, I say that formative assessment in his practice may be understood in terms of mediation between these principles and the unpredictable opportunities for relevant worthwhile learning that occur as the children engage with subject material, an approach that I have labelled as 'principled opportunism'. It is what enables him to sustain an open-ended curriculum in a potentially worthwhile manner.

These perspectives, it should be noted, are not mutually exclusive. On the contrary,

my claim is that T's formative judgments may be understood from any of the three perspectives I have identified. For instance, eg. 211 (below) may be looked at locally. It involves judgments about the children's *thinking*, more particularly, their *understanding*: 'I can see they've identified that myths can carry messages we've exemplified it through king Midas.'. From a strategic perspective, the same comments imply the jointness of the intellectual journey: 'they've ... we've'. From a philosophical perspective, 'help them to see it as a moral message, explicitly using the term 'moral'', which may be seen to be the outcome of T's judgments, embodies a view of worthwhile learning ('see it as a moral message') and an assumption about the role of language in learning and thinking: '[I'm] explicitly using the term 'moral'. I think I'm comfortable about using of 'moral message', because I'm using it in context.'

eg. 211 / I can see they've identified that myths can carry messages
acc.in.t.st.un.ep.g / and that we've exemplified it through king
 Midas. *acc.in.t.st.un.ep.g* / I can help them to see it as a moral
 message, explicitly using the term 'moral'. *ctd* / I think I'm
 comfortable about using of 'moral message', because I'm using it in
 context. *ctd* / (R1/SR2 4.18)

The most comprehensive understanding comes from viewing T's commentaries from all three perspectives. Of them, however, it is only the philosophical that is synoptic. The local perspective on T's judgments and the concerns that lie behind them of itself contributes to an understanding of his formative assessment practice. So, too, does the strategic. More light is shed on both the local and the strategic, however, when they are further viewed from the philosophical perspective. In short, the most general account of T's formative assessment practice is available by reference to his educational philosophy.

CHAPTER 9

VALIDITY AND SIGNIFICANCE OF STUDY

9.1 OVERVIEW

My intention in this study has been to contribute to the development of understanding of formative assessment as it relates to everyday classroom practice. My purpose in this chapter is to consider what the study contributes to such understanding. With this in mind, I seek to do two things. One is to review my methodology in order to identify any threats to the validity of the conclusions and to propose changes that I would make to future work like this. The other is to consider the significance of my findings.

What follows attends to four matters especially:

1. The understanding generated by the study, with particular reference to its validity (9.2, below);
2. The significance of the understanding created (9.3);
3. Implications for policy and practice (9.4).
4. Potential for further investigation (9.5)

9.2 UNDERSTANDING GENERATED: VALIDITY

9.2.1 Review

The justifications for the study's methodology are set out in chapter 4. Chapter 5

establishes its broad strategy, describes the conduct of the first phase of the investigation, indicates its outcomes and identifies their implications for the second phase.

Chapters 6 to 8 deal with the study's main phase. In this that the study becomes interpretive in the sense offered by Maxwell: that is to say, it focuses on the 'intention, cognition, affect, belief, evaluation, and anything else that could be encompassed by what is broadly termed the 'participants' perspective'' (1992, p. 288). They lead to a proposal for how formative assessment in one teacher's practice may be understood. In what follows, I reflect on the conduct of the investigation with a view to identifying matters that might threaten the validity of its conclusions or that I would want to approach differently in further studies of this kind. Most importantly, building on my consideration of validity in 4.7, it considers the claims I make for the understanding developed through the study. I structure my reflections in the main around Maxwell's proposal for five broad categories of understanding in social theory (Maxwell, 1992, pp. 284, 285). The merits of this formulation are considered in 4.7.

9.2.2 Methodology and descriptive validity

The overall design of the study, as initially conceived, was, I believe, sound. Its initial purposes were frustrated, however, by the withdrawal of one of the teachers involved at a point too late to find a replacement. In consequence, the comparative element initially sought has not been realised. Its loss, however, has been counterbalanced by the opportunity it opened up to examine the work of the remaining teacher (who I continue to refer to as T) in greater detail than was first anticipated. Thus it has not of itself undermined the validity of my findings. It has, however, changed the nature of the study to one that focuses on the thinking of one teacher, rather than on a comparison between the thinking of two. The conclusions must take this limitation into account.

Equally sound, I claim, have been the means of determining this teacher's broad approach to project work in the humanities, namely by a pilot project involving non-participant observation of actual curriculum in action. My observations were successful in a number of ways. They enabled me to see how T's work was structured and how the main phase of the investigation could be framed. Further, at an initial level, they allowed inferences to be drawn about his underlying educational philosophy. Most importantly, they disabused me of my initial expectation that the formative assessment activity I wanted to study would be located in discrete encounters between T and individual children relating to writing or other representational activity. Instead, they showed me that I had to focus in the main phase on the oral interaction between T and the children as it unfolded minute-by-minute in the course of the project. In short, they showed what I had to describe in order to understand.

With regard to the main, primarily interpretive, phase of the study, three concerns emerged in its course. All relate to my approach to eliciting T's thinking on action, namely by inviting him to comment freely on video recordings of the classroom interaction.

The first relates to the effects of my presence in the classroom to record T's interactions with the children. In 4.7 and 6.3, I indicate what I did to minimise them. I cannot state categorically that my presence was without consequence. I can say, however, that the broad pattern of T's activity was similar in both phases. If there was distortion, it was in the same direction. One might reasonably assume that the same principles informed both. Moreover, I have T's assurance throughout that what he did was typical of his practice. In the light of this consistency and T's assurance, it is reasonable to assume that any distortion was minimal. In another project like this, however, I would arrange for video recording without my presence.

The second relates to my not knowing how far my presence as T commented on the videos influenced what he said. Whether I recorded in notes or by tape, he would have been aware of my affective responses, however much I tried to restrain them. Moreover, from our previous work together, T knew about my interests. It is possible that this awareness influenced what he said. Against this must be set what I knew of T's interests from the same joint activity. This made it more likely that I would be aware of discrepancies between past pronouncements and present commentaries. Moreover, we had long been able to challenge each other's views and had often done so. I had no reason to think that T would incline what he said towards my views. On balance, I think the gains that accrued from knowing each other's interests, as, for example, in the elicitation of T's comments about Wittgenstein (see 8.4.4.6, eg. 201), outweighed the disadvantages. However, in another venture, I would first invite the subject's comments without my presence, and only then elicit further observations face to face.

Third, I would not again seek to record a subject's observations by hand, as I did in this study in relation to T's commentaries on the initial videos. The 'reactivity' dangers are too great. The subjectivity of note-making is unavoidable. I can say, however, that making notes available to T for his scrutiny and amendment offered a partial safeguard against distortion. Nevertheless, I note how much more commentary tape recording facilitated. Had I adopted this approach from the outset, more data would have been generated. That said, I believe that the total bank of data generated has been sufficient in volume and robustness for my purposes.

In spite of these reservations, I maintain that my data on the classroom events and T's commentaries on them have enabled me to arrive at a valid understanding at a descriptive level of T's work in the course of a humanities project, for all the material I had could be tracked back to the original video and audio recordings

and to my field notes. By extension, I maintain that the data were sound enough to allow me to consider how the work could be understood interpretively.

9.2.3 Interpretive validity

I have harboured three concerns about the validity of the interpretive understanding I have constructed. All relate to the division of T's commentaries into units of meaning and their subsequent categorisation.

First is the possibility of double-counting. An example (eg. 210, below) illustrates this concern:

eg. 210 </ I'm trying to help the children put .../ Lana's and Ady's points
acc.in.t.pr.ge.ep.g /... together. *ctd* /> / Ady seems to have thought a
 bit further. *acc.in.t.pr.ge.ep.s* / </ I'm doing this because .../ I
 think Lana's on to something important. *acc.in.t.st.un.ep.s* /... *ctd*
 /> </ .../ I'm fairly certain Lana means myths are a guide to action
acc.in.t.co.sa.ep.s /... and I want to confirm this. *scp* /> / Once that is
 done, it becomes a path we can go down. *ctd* / (R1/SR1 M25)

All the *acknowledging children* units in this passage revolve around T's initial reference to 'Lana's and Ady's points'. In my analysis I treat this as a unit in its own right and regard it as involving a *positive* evaluation on T's part, on the ground that he sees the points as having development potential ('a path we can go down'). Further evaluations, however, follow: 'Ady seems to have thought a bit further *acc.in.t.pr.ge.ep.s* '; 'Lana's on to something important. *acc.in.t.st.un.ep.s* '; 'Lana means myths are a guide to action. *acc.in.t.co.sa.ep.s* '. In short, I make four *acknowledging children* units from T's initial inference about the children's 'points'.

Multiple judgments about single events like this are common in T's commentaries. I wondered whether treating each one as a unit in its own right has led me to

exaggerate the extent of T's judgmental activity. I now believe that this concern has been unwarranted. To take the above example, to say that a child means that myths are a guide to action and that she is 'on to something important' is to make two inferences, not one. To ignore their discreteness entails missing subtle distinctions in T's formative assessment thinking, the existence of which emerges as an important finding of this study. I conclude, therefore, that double-counting is not a problem, and that conceptualising the relationship of the units differently in order to avoid the difficulty would unduly restrict my findings.

A second problem involves some the categories of T's thinking. One, the subcategory of *thinking process* labelled as *generating*, I have already suggested is a portmanteau category (8.4.2.2, above). The large number of instances involved could have been further subdivided in order to provide for finer distinctions in T's thinking. Another involves two of the subcategories of *feeling*, namely *interest* and *engagement*. I no longer think that their distinctiveness warrants their separation. Given the small number of instances involved, however, I have not seen the matter to be sufficiently important to require my analysis to be changed. A further one involves some of the finer distinctions of *thinking* and *feeling*. Here the problem is not the distinctions themselves, but rather the small number of instances they represent. These shortcomings of the category system apart, I believe that the arrangement is sound enough to provide a basis for the inferences built on it. I make this claim on two grounds. First, the more I worked with the categories, the easier I found their application. Second, the degree of agreement reached with my interjudge colleague (see 6.6.2) in the early stages of the analysis was enough to suggest that the subdivisions of T's thinking I discerned had substance.

A third concern relates to the analytical work's statistical dimension. On the grounds that it would assume an unwarranted equality between the discrete items examined, I decided at the outset not to use statistical measures of significance. I

now think that my scruples were misplaced. I see that the arithmetical counts and percentages I use are open to similar objections. I defend what I have done by pointing to the cautions built into my argument. But, employed with similar caution, more rigorous measures could have been productive, whether in lending greater weight to some generalisations or in ruling out others altogether. My data are retained in a form that makes reexamination in their light possible should this be felt desirable. Meanwhile, while acknowledging their limitations, I hold that my simpler devices have been fit enough for my purposes.

Two things lend confidence to this claim. First, my methodology and the ways in which I present my results (see Chapters 6 and 7) are transparent. Any errors should be readily visible. Second, my results at the first level of my analysis match those of others who have worked in this field. In their overview of studies of teachers' interactive thinking, Clark and Peterson (1986, p. 272) note a range of 39% to 50% of learner-related thoughts. My study focuses especially on the comments I label as *acknowledging child/children*, one that would be subsumed in Clark and Peterson's category of learner-related thoughts. 41% of the comments in my data are of this kind (see Ch. 7, Table 5), a figure within Clark and Peterson's range. Had I included the *seeking children's perception* and *indicating shared experience* categories (1% and 3% respectively) in the count, my findings would have been centrally located within it. My study takes the analysis some way beyond those Clark and Peterson report. This congruence at its first level, however, suggests that my work rests on firm foundations. Furthermore, since the rest of the analysis is conducted on similar principles and the early levels were scrutinised by my interjudge colleague, one may be confident that the findings are reasonably secure.

Thus I hold that the interpretive understanding of T's formative assessment activity that I advance is valid. My warrant rests on what I see as the basic principles of such understanding, namely that it is about meanings and that the meanings

involved are first and foremost those of the person or persons being studied. My account is grounded in T's language, and therefore T's meanings. Where I go beyond his words, as, for example, in making inferences about his educational philosophy, I base my claims on what he says and substantiate them by direct quotation from his commentaries. Where I use constructs like 'educational philosophy', I base them on usage within the research community. In these ways, I do more than assert the validity of the interpretive understanding I have constructed. I also present it in ways that readers can test it out for themselves.

9.2.4 Theoretical validity

With regard to the validity of the theoretical understanding that I propose, I follow Maxwell in holding that a theoretical account functions as an *explanation*, as well as a description of phenomena (op. cit., p. 291), although later in this account I reach beyond him in one respect. I indicate in 4.7 and 8.5 that two components are involved: concepts and the relationships that obtain between them. Theoretical validity therefore involves the validity of the concepts and of the relationships held to obtain between them. I claim that my proposal holds up on both counts.

First, most of the key concepts I employ are in common use within the research community with broadly agreed meanings. By these I mean especially *consciousness, action, educational philosophy, assessment, cycle, discourse* and *function*. Where I introduce new concepts, as in *concern* and *continuous calibration*, I keep them to a minimum and offer explanations couched in terms drawn from ordinary or educational usage. I anticipate that readers will find it possible to connect with both the existing concepts and the new ones, and to relate consistently to the manner in which I use them.

Second, I claim that, taken together, the concepts and the relationships between them that I depict are valid as an explanation of T's practice. This is a bold claim, not least because it begs the question of what one means by explanation. I emphasise that I do not mean explanation in the positivistic sense, as in *a* being the cause of *b*. I do not claim that T's action is *caused* by his philosophy and its manifestations at the various levels I have depicted, and by his evaluations of the children's actions in its light. I say instead that his action is consistent with this philosophy and therefore *comprehensible* in its light.

In making this claim, I reach beyond Maxwell, whose paper at this crucial point declines to offer guidance ('I cannot deal here ... with the complex and much-debated issue of what constitutes an explanation' (op. cit., p. 292; footnote)), and look to an account offered elsewhere:

explanations [in social science] aim to explicate the basic conceptual schemes which structure the ways in which the actions, experiences and ways of life of those whom the social scientist observes are made intelligible (Carr and Kemmis, 1986, p. 90).

Following these writers, two tests of validity are available, one more stringent than the other. The first is that an explanation must be coherent: that is to say, 'it must comprehend and coordinate insights and evidence within a consistent framework' (op. cit., p. 91). I believe that the scheme I offer meets this requirement and that it does so in a manner that is consistent with the expected discourse of the research community. The other, more demanding criterion, is that, 'either concretely or in principle ... the account must also be able to pass the test of participant confirmation' (ibid.). T saw and validated the earlier stages of this study. He has since been provided with the whole of Chapter 8, which sets out the understanding of his practice that has been developed. Responding by telephone, he said that the account was true to his beliefs to a degree that was 'almost uncanny'. More particularly, he said that its depiction of his educational philosophy was 'spot on' and that the account of its relationship to formative

assessment was one that he felt 'comfortable with'. Only the depiction of his comments seemed odd. The problem was not their meaning, which he still saw as his, but rather their distance from the spoken word. While I await written confirmation, I think that, on this evidence, the 'participant confirmation' criterion is met. On these grounds, I conclude that the theoretical understanding that I offer of his formative assessment activity is valid.

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9.2.5 Generalisability

By generalisability, I mean the extent to which one can draw on my understanding of T's assessment practice to comprehend other aspects of his own work or the work of other persons in other settings. With Maxwell (op. cit.), I recognise that generalisability's function in qualitative studies differs from its role in quantitative research, in that the former is not designed to facilitate systematic inferences to wider circumstances. I see it rather to be a matter of making the particular understandable in the anticipation that new questions may be raised about other instances to which it relates. Viewed in this light, the central issue for this study involves the determination of what its object is a case of.

Golby (1994) emphasises the importance to case study of the investigator having a reasonably precise idea at the outset of what sort of case is being studied. From the beginning, I was clear that this was a study of teachers' formative assessment thinking in the context of the everyday humanities curriculum in primary schools. Unexpectedly, but I think advantageously, it became the study of the thinking of a single teacher.

As the study proceeded, however, I became conscious that my initial conception of its subject matter, while remaining valid, was at once too wide and too narrow. By too wide, I mean that my early expectation that I would be able to observe all that

T did. I could, at most, record some of it and could only interview him on what was recorded. This raises the issue of what Maxwell refers to as 'internal generalisability' (op. cit., p. 294): by what right could I assume that what I have seen is typical of T's work and that what he said about it is representative of his wider perspective? My answer rests on five grounds: I recorded a large proportion of a whole, lengthy humanities project; the volume of commentary this generated was prolonged and substantial; I had already observed a similar project in the pilot phase; I had T's assurance that what I saw was typical of his practice; through professional contact, I had some knowledge of T's work before this investigation began. Taken together, these offer substantial safeguards against my data being unrepresentative. By extension, provided that my interpretation of the data is valid, I can assume that the inferences I have drawn are typical of T's work in this field in general. The account I offer of my methodology is intended to demonstrate that this interpretation is sound. In short, I can make valid claims for the internal generalisability of my interpretation.

My justification for seeing this conception as too narrow stems from my growing recognition of the significance of my focus, stemming from the first phase of my investigation, on the interactive dimension of T's humanities practice. In the view of many writers (eg., Edwards and Mercer, 1987; Barnes, 1992; Mercer, 1995), extended oral interaction between teachers and children is a key means by which pupils are drawn into the meanings of their culture. In brief, it is widely seen as primary location for teaching and learning. T's interactive work in the humanities could therefore be seen as a particular case of such activity within his own practice and, more importantly, of interaction in educative settings generally. Further, it had become apparent that, if formative assessment played a part anywhere in T's practice, it was in his minute-by-minute interactions with the children. By studying his formative assessment practice in this interaction, I was studying a particular case of assessment within interaction generally. The original justification for my focus on the humanities still stood. More clearly than before, I saw that it was the

means of eliciting a teacher's thinking about assessment that had not yet been affected by conceptual frameworks associated with the National Curriculum.

All this means that I can, with reasonable confidence, claim a limited internal generalisability for the theoretical model of formative assessment as continuous calibration proposed in 8.5 (above). It may be seen as representative of T's own practice in the humanities. More importantly, it may be regarded as representative of any aspects of his work that involve extended interaction.

With regard to external generalisability, by which I mean my warrant on the basis of my understanding of T's practice to say anything about the practice of others, I must be more cautious. The withdrawal from the investigation of one of the original participants means that I can say nothing on the basis of what two teachers, let alone more, hold in common, nor about where they differ. The evidence of T's adherence to a particular philosophy of education (see 8.4.5, above) adds a further apparent constraint. Provided that I remain mindful of what may and may not be done on the basis of case study, however, neither point troubles me. I know that I cannot make systematic inferences to wider settings and do not attempt to do so. Nonetheless, on the basis of my findings, I can legitimately raise questions about assessment practice within the wider community of teachers, and so can others. Furthermore, such questions may be addressed to those who study practice or form policy as well as to practitioners directly. Provided that the issue of the relationship of the practice I have studied to other practice is kept in mind, such questions can be generative. It is on this potential that I claim that the significance of this study lies.

9.2.6 Evaluative validity

This aspect of validity involves 'the application of an evaluative framework to the

objects of study' (Maxwell, *op. cit.*, p.295), rather than the descriptive, interpretive and explanatory goals considered above. In the light of Maxwell's examples, for this study it would involve the consideration of questions like, 'Was T right to interpret the children's action in such and such a way?' and 'Was he justified in showing concern for the children's feelings at such and such a point?'

I do not regard issues of evaluation like these as central to my brief. Nor do I wish to say anything about the effectiveness or otherwise of T's approach, for my study is not designed with this in mind. Nonetheless, I regard other questions of a different evaluative order as highly relevant. To ask, as I do now, for example, 'How adequate is the educational philosophy that underpins T's formative assessment activity?' is to raise an evaluative issue about his thinking. In response, I may begin by pointing to one or more of the dimensions of educational philosophy that I claim underpin T's thinking. For illustrative purposes, I take T's notion of intellectual development. I claim in 8.4.4.4 that it involves things like the children coming to understand the general (as in 'the idea of myth'), as distinct from the particular, and their making fine distinctions (as in coming to see that the Orpheus myth is something other than a moral tale). When I then assert that these are demanding and worthwhile expectations to have for children, I evaluate this aspect of T's philosophy positively. The framework I use to make this judgment, however, is not T's but mine.

In this way, evaluative understanding is quite different from the other kinds of understanding considered so far. It involves an awareness, not only of T's perspective, but also of the evaluative lenses through which I perceive it. This matters in three ways. First, with the aid of these lenses, it allows me to say that I do not regard T's formative assessment activity and the teaching within which it is embedded as educationally trivial. Second, it enables me to relate my understandings of T's activity to what is known about others. Third, in so far as others may share, or at least comprehend, my framework, it allows them to assent or

to dissent from the significance that I place on the understanding I have reached.

9.3 SIGNIFICANCE OF FINDINGS

9.3.1 Conceptualising formative assessment: case study's potential

Throughout this study, I have seen the matter of formative assessment as a practical problem. It is about teachers' practice and what may be problematic about it. I have sought to explore this principally by interpretive methods, that is to say, by trying to see what teachers' actions mean to them and by reflecting on what I find. Following Carr and Kemmis (1986), my hope has been that, through this approach, I would be able to offer some help to those who strive more rational and authentic practice ...

... by [extending] understandings and ... the range and sophistication of the language for describing action, and thus to extend the capacity to communicate about action [and] to orient action and coordinate it with the right actions of others (Carr and Kemmis, *op. cit.* p. 93).

I see this to involve the actors directly involved and also those who theorise about and shape policies that relate to their practice.

With Golby (1994), I hold that the strength of case study lies in its allowing practical problems to be investigated '... in ways which might allow us to reconceptualise [them], understand more fully [their] wider significance and act more intelligently in resolving [them]' (Golby, 1994, p. 16). Case study is at the heart of this investigation. I contend that its greatest significance lies in its potential contribution to thinking about how formative assessment is conceptualised. With this in mind, I contend that three matters are involved: the place of formative assessment within the dynamics of classroom practice; the

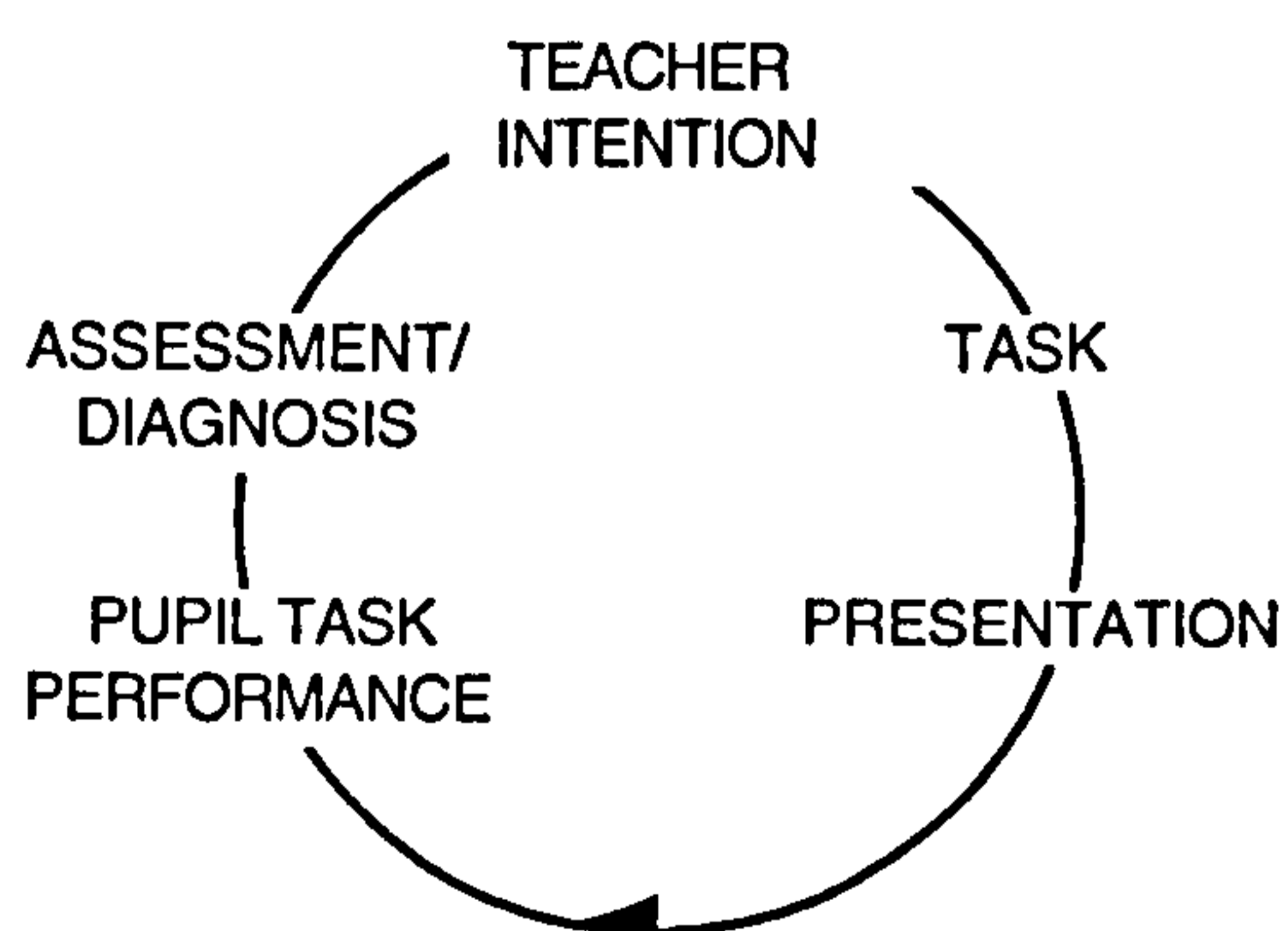
relevance of social constructivism to formative assessment; and formative assessment and the nature of teacher consciousness. Together, they suggest that a modest reconceptualisation of the nature of formative assessment in everyday classroom practice could with advantage be entertained.

9.3.2 Reconceptualising formative assessment

9.3.2.1 Complementary conceptions of formative assessment

There is more than one way in which the place of formative assessment in the dynamics of teaching may be conceptualised. This may be seen by comparing two models. One is the schematic representation of a teaching cycle shown in Fig. 1 in Chapter 2, but reproduced here for the reader's convenience. The other involves the representation of formative assessment as continuous calibration offered in 8.5.3, Fig. 13, as a summary of my theoretical understanding of T's practice. I do not suggest that these exhaust all ways in which formative assessment might be schematised, but present them in order to draw attention to the significance of their differences.

Fig. 1 Teaching cycle (repeated from Chapter 2)



A simple teaching cycle
(Bennett and Dunne, 1992;
p.7, Figure 1.1)

The conceptions have many similarities. The teacher and the children are

represented in both. Each implies the involvement of mind on the teacher's part, the one by the phrase 'teacher intention', the other by 'teacher action'. Both incorporate the term 'assessment', with its assumption of evaluative activity. Each portrays a dynamic situation, in which one thing, an act of assessment, leads to another, teaching modified in its light. Above all, both propose that teaching and assessment are cyclically related.

With this, however, the likenesses end. Whereas Bennett and Dunne present *teacher intention, task* and *presentation* as conceptually separate, the continuous calibration model subsumes them within a single entity, *teacher action*. While Bennett and Dunne separate *assessment* from *pupil task performance*, with the first following the second, the calibration model unites them as *formative assessment of children's action*. Where in the Bennett and Dunne scheme, the processes involved in *pupil task performance, assessment, (adjusted) teacher intention, (revised) task setting*, and so on, may be separated in time, in the continuous calibration model the accommodation of *teacher action* to the *assessment of children's action* is immediate and continuous.

These differences are not trivial. Most obviously, the respective portrayals of the dynamics of the relationship between formative assessment and teaching involve quite different conceptions of the way in which practice is modified in the light of pupil performance.

On the one hand, the Bennett and Dunne model lends itself to linking assessment and teaching through rational planning. By this I mean that the careful, premeditated articulation of intentions is linked logically and sequentially to task design and presentation, to the determination of evaluative criteria for pupil performance and of the means of their application, and to the use of the information thus gained in shaping further teaching intentions and activity. While the cycle of adjustment may in principle be repeated indefinitely, the processes of evaluation and amended teaching are formally and practically separate. The model

is not unique. As argued earlier, it is typical of many that involve the systematic build up of evidential pressure over time before teaching plans are amended. In Ch. 2.3, I liken this to the occasional but abrupt shifting of tectonic plates.

On the other is the model implicit in T's work. Characteristically, this does not involve rational planning, with its occasional seismic shifts in what the teacher does in the light of specially garnered judgments, but rather the spontaneous and continuous adjustment of teaching through the evaluation of children's action within interaction, as in the gradual accommodation to one another of plastic bodies. I use the term 'spontaneous' here without judgmental intent, but rather to signify that the adjustments are unpremeditated and for the most part immediately linked to evaluations of the children's action. And, since the children's action, and T's evaluation of their action and adjustment to it, are continuous, the processes of evaluation and teaching amendment are formally and practically linked and continuous. For this reason, as proposed in 8.5.3, I characterise the process as the *continuous calibration* of teaching to the children's action.

With regard to the placement of formative assessment within the dynamics of teaching, these conceptions differ fundamentally. In the one, assessment is an integral part of teaching primarily in the sense that it allows for successive cycles of assessment and teaching. Within each cycle, however, assessment precedes teaching and is in principle separable from it. Its relationship to teaching is a contingent, rather than a necessary one. By contrast, the continuous calibration model unequivocally identifies formative assessment practice directly with teacher-pupil interaction. In this, formative assessment is not the precursor of teaching, but an integral part of a continuing unfolding of teaching and learning

I do not hold these models to be in opposition. One might conceive of teachers engaging in formative assessment activities that pertain to both, albeit not simultaneously. For example, a lesson might be initiated with activity of the first kind leading to interactive discourse embodying assessment activity of the second.

My point is rather that they are different. If continuous calibration is integral to interactive teaching generally, rather than merely to the practice I have studied, and if extended teacher-pupil interaction is a significant feature of teaching generally, then a general theory of formative assessment must account for its role within interaction as well as within its conventionally accepted setting. More speculatively, if interactive processes are validly regarded as central to teaching, one might ask whether continuous calibration in some form should not be regarded as the more general link between teacher and pupil action, with the more conventional models of the link through formative assessment being seen as a subcategory.

9.3.2.2 Continuous calibration as a social constructivist conception

As indicated in Ch. 2.3, one writer (Torrance, 1993) surmises that our understanding of formative assessment could gain from an examination of the particulars of classroom interaction from a social constructivist perspective. Here, I show how the model of formative assessment as continuous calibration I am exploring is necessarily social constructivist in conception. My case rests on its relationship to interaction.

The models of formative assessment considered in 9.3.2.1 differ in their regard to interaction. The Bennett and Dunn formulation does not of necessity exclude it. Interaction could be involved in both its *presentation* and its *pupil task performance* phases. It might also be seen in the processes involved in *assessment/diagnosis*. Such devices, however, impose on the model dimensions it is not designed to portray. At base, interaction plays no essential part in the scheme. By contrast, in that it is concerned with the immediate actions of one actor, the teacher, in response to those of another group of actors, the children, as they jointly engage in curricular activity, the continuous calibration model centres on

interaction. That the particular model I consider is concerned with the consciousness of the teacher, and especially with the teacher's perceptions of the children's consciousness, rather than directly and equally with the consciousness of the children, does not negate this key feature of its significance.

A less obvious, but vital distinction between the two formulations involves the significance attached to mind, consciousness and meaning. Mind and consciousness are implicit in the Bennett and Dunne model in the notions of *teacher intention* and *assessment/diagnosis*. The scheme could involve meaning in these same elements, but does not do so of necessity. In the rest of the account, however, they have no necessary place. By contrast, mind, consciousness and meaning are central to the account based on T's practice. This is implicit in the model in the term *action* and its coupling to both *teacher* and *children*, and in the notion of *teacher concerns*.

What I mean by *concerns* is dealt with in Chapter 8. Other than to emphasise their significance at philosophical, strategic and local levels, these details of T's consciousness need not be enlarged on here. What is meant by *action* is explored at length in Chapter 4. Here I reiterate only its key constituents in order to highlight what is distinctive about the formulation.

First, it implies agency, that is to say, a person or persons acting intentionally in the light of beliefs, desires, goals and so on. In this formulation, while agency is attributed to both the teacher and the children, the focus is especially on the former. A more ambitious account might involve the children as agents directly. That I have not attempted to include this perspective merely reduces the scope of the model. It does not invalidate it. Second, it implies situation: here the classroom, with what this means for the number of participants involved and for the roles they play. Third, within this situation, it implies activity that is characteristically social, meaningful and symbolically mediated: to this, language and meaning are central.

In summary, the continuous calibration model focuses on action and interaction, mediated through language. It has mind, consciousness and meaning at its centre. These characteristics set it apart from the Bennett and Dunne model, and from others like it. At the most general level, they align it unequivocally with the sociocultural accounts of cognition associated especially with Bruner (1986, 1990) and Wertsch (1991) (see 4.4). More particularly, it builds on Bruner's concept of calibration (1987, p. 92), but extends it from the experimental psychology laboratory to the complex setting of a classroom. I want now to show how, at a more particular level, the model may contribute to a resolution of the longstanding problem identified in Ch. 3, namely, the 'lack of a general theory of ... formative assessment *in complex settings*' (Sadler, 1989, p. 119: my emphasis).

9.3.2.3 Formative assessment and teacher consciousness in a complex setting

By a 'complex setting' in this context, I take Sadler to mean the circumstances of everyday classroom life, as distinct from the contrived simplicity of the experimental psychology laboratory. I see these to relate to two things especially. One is the number and diversity of the participants involved. Whereas experimental studies typically involve tutoring pairs (eg., Bruner, 1986: see 3.4, above), classrooms typically involve one teacher working with a diverse group of children '... who have arrived with their own histories, expectations and agendas (some of which will be in conflict with the teacher's agenda)' (Mercer, 1995, p. 84). Some - but by no means all - of the problematic aspects of this situation are outlined in 3.2 (above). Here I restate the point that keeping this diverse array of learners engaged in the 'collective enterprise of classroom discourse' (Mercer, *ibid.*) is a formidable challenge. It is a major factor in making the classroom setting complex.

The other relates to what is to be learned. In experimental studies this typically

involves helping the tutored partner to complete a finite task, such as the construction of a pyramid out of interlocking wooden blocks (eg., Bruner, *op. cit.*). Classrooms, on the other hand, are places where, under the tutelage of others, children are expected to make sense of a wide range of matters. Some of these do not bear directly on the curriculum at all. Of those that do, many are of a kind that cannot ever be regarded as completely mastered. The stipulation in the National Curriculum for History that Key Stage 1 pupils should be taught 'to recognise why people did things, why events happened and what happened as a result' (DFE, 1995, p. 75) is but one example. The epistemological issues involved in matters like this are considered in 3.3 (above). Here it is enough to indicate that such problems are compounded by the fact that curriculum commonly involves the concurrent pursuit of multiple goals, rather than individual ones consecutively.

This study involves the perceptions of a teacher about the transaction of the everyday curriculum within a normal classroom in the knowledge that it encompasses both complications. More particularly, I attend to his perceptions that relate to the more or less lengthy interactions, or discourses, through which the curriculum is chiefly transacted. Within these interactions, classroom life is likely to be at its most complex. In them, those elements of the teacher's practice that involve the formative assessment I seek to understand especially occur.

In 2.2, I note Torrance's expectation that, if assessment has an educational role to play, it is more complex than is commonly believed (Torrance, 1993, p. 333). At least with regard to the case I have studied, my findings amply confirm this anticipation. But they do so in an unexpected way, for they reveal the extraordinary complexity of the thinking of the teacher involved. I regard the revelation of this complexity as a significant outcome of this study. This complexity is depicted in full detail in Chapter 8. There is no need to review this ground in detail here. Instead, I want to consider how my study bears on the wider issue of how formative assessment is conceptualised. With this in mind, I summarise its key findings below. In that they deal with a teacher's interactive

thinking, they are akin to the outcomes of the studies of interactive thinking surveyed by Clark and Peterson (1986), but with the added significance of being related to formative assessment.

1. T's formative assessment thinking-on-action incorporates judgments about both the children's *thinking* and their *feeling*;
2. While judgments about the children's *thinking* exceed those about *feeling*, both occur in numbers great enough to suggest that they play an important part in this teacher's formative assessment practice;
3. T's formative assessment-related concerns about the children's *thinking* and *feeling* are wide-ranging and subtly differentiated. Further subcategorisation of his perceptions of the children's thinking is possible, has been done and is analytically useful;
4. The fact that these categories are drawn from T's own language suggests that there is good reason to believe that they are part of his psychological reality, as it relates to formative assessment;
5. The incidence of T's comments on *thinking* and *feeling*, and, more particularly, of the subcategories of *thinking* and *feeling*, varies in accordance with the primary purposes of the discourses to which they relate;
6. Overall, there is a preponderance of comments about the *thinking* and *feeling* of the children as *groups* rather than as *individuals*;
7. T's formative assessment-related concerns for the children's *thinking* and *feeling*, as they are represented in terms of the subcategories identified in earlier chapters, may be seen as manifestations of more general local and

strategic concerns, and, ultimately, of his educational philosophy.

These findings, it must be emphasised, relate to the one teacher on whose practice my case study is based. In considering their relevance to the formation of a more general understanding of formative assessment, I must proceed with extreme caution, for I have no direct licence to extrapolate them to a wider population.

The most important measure of this caution involves distinguishing between what is particular to T and what is potentially of a more general order. Of the former, the most fundamental is the particular educational philosophy that underlies his practice. I do not mean by this that the liberal progressivism that I attribute to T (see 5.3.5 and 8.4.4, above) is uniquely his. That would be to deny the force of a recent tradition in educational thinking that was, and possibly still is, embraced by many. It is rather to acknowledge that there are facets of this tradition that are manifested in T's practice that may play a smaller part, or even no part at all, in the work of others whose educational lights are different.

It is thus with caution that I approach the first two of the findings summarised above. At their centre is the claim that T's formative assessment practice rests on his concerns for both the children's *thinking* and their *feeling*. I do not know whether similar concerns are shared by teachers whose philosophical persuasions differ from T's. In one important respect, however, *feeling* plays a role in T's practice that, by definition, it could not in the work of a teacher committed, for instance, to the liberal pragmatist principles out of which the National Curriculum has grown.

As shown in 8.4.4.3 (above), judgments about the children's *feeling*, and more particularly, what they show *interest* in, are prominent determinants in T's practice of the immediate and particular content of the curriculum. For the pragmatist, by contrast, whether laid down by statute or arrived at by agreement with

professional and other colleagues, the content of the curriculum is a given. It is less open to change in the light of the perceived interests of the children she teaches. Nonetheless, she could well be concerned about *feeling*. If so, one might anticipate that her concern would be manifested in her formative assessment practice, at least as it relates to continuing interaction. Her reasons for attending to the children's feeling, however, might be quite different from those of the liberal progressive.

From this brief consideration, three points arise. First, questions about whether concern for *feeling* plays a part in the formative practice of teachers in general and, if so, whether they differ in relation to their educational philosophies, are open to empirical investigation. Second, if concern for *feeling* is a significant element in the formative practice of teachers who subscribe to any major philosophy, then general theories of their practice must take them into account or be incomplete. Third, most that I have said above about teachers' concern for *feeling* could also be said about their concern for children's *thinking*. This, too, is investigable. This, too, would need to be incorporated within theory. With this in mind, one might conclude that a separate theory for each identifiable philosophical tradition would be required. It is difficult, however, to see how this would be useful. A better solution would be to anticipate a theory of such generality that it would accommodate all persuasions.

Colker (1982, reported in Clark and Peterson, op. cit.), investigating teachers' interactive thinking generally, found no significant differences between teachers' thoughts about learners in tutoring, small group and large group situations. Other than that they do not attend to tutoring situations, my findings on thinking in relation to formative assessment in particular broadly concur with Colker's. Item 5 (above), however, points to a subtle variation. In relation to T's work at least, discourse purpose influences evaluative thinking, even when group size does not. As with items 1 and 2, I do not know whether what pertains to T's practice is to be found in the work of others. Their situations, however, are also investigable. What

gives this issue potential importance is the fact that teaching is by definition a purposeful activity. In so far as formative assessment practice may be found to vary according to differing teaching purposes, this, too, would need to find a place within theory.

The indication in item 6 that, in T's practice, his evaluative thinking relates predominantly to children as groups is interesting in that it does not match the assumption implicit in most depictions of formative assessment practice (see Chapter 2) that the processes involved relate to individuals firstly, with the outcomes later aggregated in some way that enables the teacher to work productively with the group or the class as a whole. There are three points to be made. First, this finding relates to T's interactive thinking in continuous discourse only. Second, while I can say nothing about the thinking of other teachers in like situations, their circumstances and their thinking are investigable. Third, if it were found that teachers at large made judgments extensively about groups as well as, or even rather than, about children as individuals, then this, too, would need to be built into theorising.

So far as I can ascertain, the indication in item 7 that T's formative assessment-related concerns for the children's *thinking* and *feeling* may be seen as manifestations of more general local and strategic concerns, and, ultimately, of his educational philosophy, goes beyond anything previously reported. Nevertheless, this finding is consistent with the assertion by Clark and Peterson that a range of studies of teachers' implicit theories hold in common the idea that teachers' cognitive and other behaviours are guided by and make sense in relation to a personally held system of beliefs, values and principles (op. cit., p. 287).

The novelty of my own claim is twofold. First, it lends further weight to Clark and Peterson's assertion, but with particular respect to cognitive and other behaviour related to formative assessment within interaction. Second, it suggests that, with

regard to teachers at large, what may be regarded as formative assessment thinking within prolonged interactive settings could be of a piece with their thinking generally, since both would be informed by the same philosophy. As with my other findings, I have no direct mandate for this extrapolation. Nevertheless, my finding invites questions about whether what I have seen in T's work might be found to be more widely valid. As with my earlier points, the issue is investigable. The congruence of my finding with those reported by Clark and Peterson suggests, however, that there are grounds for anticipating that this possibility would be confirmed.

Clark and Peterson's review of studies of teachers' interactive thinking (op. cit.) makes it clear that, for all the differences of their analyses, investigators have repeatedly depicted this thinking as complex. My indication in item 3 that T's formative assessment comments about children's *thinking* and *feeling* are wide-ranging and subtly differentiated may be regarded as significant in that it suggests that it may be possible to extend this generalisation to their evaluative thinking in action in particular. Again, the issue is investigable.

What has already been said about the way in which T's thinking at a variety of levels is a manifestation of a particular educational philosophy, however, suggests that one should not anticipate that the complexities of other teachers' thinking would be of the same kind as his. First, one might anticipate that there would be differences between people holding different philosophies. Second, such philosophies themselves involve generalisations, the grouping together of tendencies to think in certain ways, rather than precise and unvarying stipulations. Even with teachers who subscribe to broadly similar philosophies, one might anticipate idiosyncratic differences. With the formation of theory in mind, however, it would appear to matter that the possibilities of both complexity and difference are recognised and accommodated.

All of this suggests that, within everyday curricular interaction in the complex setting of the classroom, formative assessment thinking is likely to be an integral part of teachers' interactive thinking, and that it is likely itself to be very complex.

9.3.2.4 Formative assessment as an integral part of teaching

It has been suggested that enquiry into teachers' implicit theories is central to the construction of a complete and useful understanding of thought processes in teaching (Munby 1982; reported in Clark and Peterson 1986, p. 285), an enquiry considered by Clark and Peterson in 1986 to be 'the smallest and youngest part of the literature ... on teacher thinking' (ibid.). Clark and Peterson refer to these implicit theories as the teacher's 'psychological context'. They see this to be composed of 'a mixture of only partially articulated theories, beliefs and values about his or her role in the dynamics of teaching' (op. cit., p. 287). Their definition of teachers' implicit theories closely matches the definition of a teacher's educational philosophy that I use in my endeavour to understand T's work, namely, what is 'more or less implicitly contained in the common-sense assumptions, values and beliefs underlying [his] everyday practical activities' (Carr, op. cit., p. 53). In writing about 'implicit theories' and 'educational philosophy', we are considering the same thing.

Clark and Peterson report a number of studies that hold in common 'the idea that a teacher's cognitive and other behaviours are guided by and make sense in relation to a personally held system of beliefs, values and principles' (Clark and Peterson 1986, p. 287). My interpretation of T's work is consistent with this claim. Its novelty lies in making what they report relevant to formative assessment practice. In Chapter 1 of this study, I point to the wide-ranging assertions that assessment is integral to teaching, but suggest that they are largely rhetorical in nature. My case study of T's work indicates that, in one setting at least, the claim

may have greater substance. That setting relates to teacher-pupil interaction. More precisely, it relates to extended interaction of the kind examined in this work.

The sense in which assessment is 'integral to teaching' within this setting, however, needs to be made clear. It is not integral in the way implied by the Bennett and Dunne model, that is to say, as part of a rationally planned system in which teaching intentions are modified in the light of deliberately gathered judgments about children's performance. Nor is it integral merely in the sense that it is central to the processes by which, in prolonged discourse, the teacher continuously and more or less immediately calibrates his action to his interpretation and evaluation of the children's, although this is certainly part of what is implied. Rather it is a matter of the particulars of the teacher's formative assessment practice, at a deep level, being at one with his general educational philosophy.

This implies that, in interactional settings, however spontaneous T's formative assessment practice may be, it is neither random nor capricious. On the contrary it is imbued with purpose and given direction by 'the common-sense assumptions, values and beliefs' (Carr, *op. cit.*, p. 53) that shape his activity generally. T's own words, uttered in explanation of his use of language with the children (and already cited in eg. 203, above), but in a way that could stand for his practice generally, make what this means for practice clear: 'even though it happens on the spur of the moment ... it grows out of a broad stance. I don't have to be conscious of this ... I just behave in a way that is consistent with it.' (R1/SR2 4.18)

9.4 IMPLICATIONS FOR POLICY AND PRACTICE

9.4.1 The necessary provisionality of implications

My findings are based on a case study of one teacher's practice. The issues about

generalisability raised in 9.2.3 constrain what I may say about their implications for wider practice as much as they do for any contribution I could claim to make on their basis about what teachers in general do. I do not think, however, that this means that I can say nothing. On the contrary, I claim that I can make well-founded observations, provided that their necessarily speculative status is acknowledged. Much depends on further research. Some indications of what this research might be about will be given in the next section. In what immediately follows, to avoid repetition, I shall simply show where research is desirable or necessary, while emphasising the provisionality of my suggestions.

9.4.2 Formative assessment, continuous calibration and the improvement of teaching

My study of T's practice makes it clear that, in his case at least, formative assessment in the conventional sense plays no part. Instead, he adjusts his action to what he perceives as the children's requirements and possibilities by the formative process I label as 'continuous calibration'. I do not claim that this is a more or less effective approach than that offered by formative assessment conventionally conceived, or that it would be better if others worked as he does. In the light of my study, however, it is legitimate to propose that formative assessment can be reconceptualised to include formative assessment as continuous calibration within interaction. Moreover, since continuous discourse is a feature of classroom life generally, rather than just T's, and in that such discourse is interactive (as distinct from ritualised, as in ecclesiastical liturgy), there are grounds for believing that continuous calibration may be a widespread and perhaps significant feature of classroom life. The validity of this assertion is of course investigable, as is the extent of its part in gearing teaching to children's requirements.

Meanwhile, with due caution, one might suggest that efforts to increase the effectiveness of teaching that focus solely on formative assessment conventionally defined will inevitably ignore a complementary and even alternative situation in which necessary adjustments to teaching are made. A greater recognition of what teachers do - as they put it - 'all the time' in interaction may well pay dividends.

Behind this are policy issues. On the one hand is the attraction of the technical-rational solution of formalising formative assessment in its conventional mode. It is easy to decree that it is to be done, easy to see it being done and easy - if time-consuming - to gather evidence to show that it has been done. For the same reasons, it is easy to accord it status. It is less easy, however, to give recognition and status to formative assessment as continuous calibration. However omnipresent, it is elusive, fleeting and largely occurring without trace. One might suggest here that, the greater the status given to the former, the less probable is it that the latter will be noticed at all. And, unless it is noticed, attempts to improve practice it are hardly likely to begin.

9.4.3 Improving formative assessment practice

Evidence of the difficulty of nurturing effective formative assessment practice, that is to say, assessment that changes teaching for the better, is common (eg., Desforges and Cockburn, 1987; Bennett and Dunne, 1992). For the most part, efforts have been geared towards formative assessment conventionally conceived. If a significant part of formative assessment actually takes place as continuous calibration within interaction, one might anticipate that its elusiveness would only increase the difficulties. Clark and Peterson (1986) argue on the basis of their survey of the literature that training teachers in any particular model of interactive decision making is premature. They suggest instead that training teachers 'to perceive, analyse, and transform their perceptions of the classroom in ways similar

to those used by effective teachers' (op. cit., p. 281) would be more profitable. There are problems about this. One springs from the recognition that what counts as an effective teacher is inevitably contentious. The other is that it may too easily be seen to bypass the issue of formative assessment altogether. If, however, their suggestion is viewed with continuous calibration in mind, then the notion of training teachers to 'perceive, analyse, and transform their perceptions of the classroom' may have some promise, for this might be done, not by focusing on routines, but rather on the quasi-philosophical issues that underpin action. In T's case, this means things like views about how children learn, what constitutes progression, and so on. All of this could be teased out of recordings of teachers at work, much as was done by Britton, Barnes and others in the 1970s and 1980s, and has been taken up more recently with increasing sophistication, for example, by Edwards and Mercer.

A crucial difference from more conventional approaches, however, is implied. The thrust would not be towards the improvement of formative assessment as a manifestation of rational planning. It would rather be towards enhancing teachers' capacities to work spontaneously in ways that are consistent with more well-informed theories of learning, development, and so on. Once again, but without any implication that this is the model to follow, T's words catch the essence: 'even though it happens on the spur of the moment ... it grows out of a broad stance. I don't have to be conscious of this ... I just behave in a way that is consistent with it.' (R1/SR2 4.18). Clarity about the nature of the broad stance is what matters.

9.5 NEED FOR FURTHER INVESTIGATION

9.5.1 Range

It is appropriate that this work should include indications of where further

investigation is needed, for it is based on a case study and this is one of case study's functions. The suggestions I have are of three kinds: questions about the typicality of some of the assertions made on the basis of the case study itself; questions of comparison that cannot be resolved by this case study alone; and those that involve the dimensions of my subject matter not touched in my investigation at all.

9.5.2 Questions about typicality

A number of indications have been given in this final chapter of where further research is needed to establish the extent to which my findings about T are unique to him or typical of teachers in general. Here I list the most important:

- T's interactive concerns focus especially on the children's *thinking* and *feeling*, with the latter in particular being a matter given little attention in studies of interactive thinking. Further studies are needed to establish whether this is unique to T, or whether it has wider relevance;
- I claim that T's interactive concerns are wide-ranging and subtly differentiated. The typicality of this needs to be tested, as does the possibility that other teachers' concerns are differentiated differently, especially as they relate to philosophies of education that differ from T's;
- The possibility that interactive concerns differ in the light of differing discourse purposes needs to be investigated more widely. Similarly, the possibility that, in interaction, and on a wider scale than I have seen in the work of T alone, teachers' evaluative thinking relates to groups more than to individual children, needs to be explored;

- Most importantly, the typicality of the claim that teachers' formative assessment concerns are given coherence by and are understandable in the light of their underlying educational philosophies needs to be more widely explored.

9.5.3 Questions of comparison

In this study, I have postulated two main approaches to formative assessment: the conventional 'rational planning' model; and continuous calibration. I have not seen them as necessarily opposed, nor have I considered whether one might be more effective than the other. Nonetheless, some writers, with a rational planning perspective, have advanced evidence for teaching being more effective when formative assessment is skilfully incorporated (eg. Dockrell, 1995b). I think that such claims manifest two weaknesses. First, their underlying logic is essentially associative. Second, they do not consider the possibility of other explanations. In particular, they do not consider whether the gains to the children's learning could be attributed to aspects of teaching other than the use of particular 'rational planning' formative assessment techniques. My study raises the possibility that adjustments of teaching to the needs of the children may take place as much through continuous calibration as through formative assessment conventionally conceived, even when both are used. Research is needed to explore this possibility further.

9.6 AN AVENUE FOR FURTHER INVESTIGATION

My study has concentrated on the teacher's role in interaction. I have had nothing to say about the children's part in it, nor about how, through their participation, they learn with their teacher's support. Both matters are important to a full

understanding of how formative assessment operates within interaction in support of learning. An adequate theory of formative assessment would need to account for these factors as well as the consciousness of the teacher with which I have been directly concerned.

To explore the issues involved, the kind of techniques I have used could be employed to gain an understanding of the children's consciousness, with parallels being drawn between it and the teacher's. This, however, might be complemented by quite different techniques to track the children's learning and its relationship to what the teacher offers. Work of this latter kind is being done, within a Vygotskian framework, for example by Mercer (1995). It involves tracking the ways in which children appropriate their teachers' language and the teachers their children's. The work is in the recent sociocultural tradition. An investigation of continuous calibration within interaction in an everyday classroom setting that combined this technique with my own concern for the teacher's - and, by extension, the children's - consciousness could contribute to the development of an understanding of formative assessment as yet unreached.