Organising the Social

Paul Dowling

Faculty of Culture & Pedagogy
Institute of Education
University of London

Organising Analysis: constructive description and SAM

In this paper, its title—'Organising the Social'—operates at three levels. At the first, most general level, I want to introduce a general approach that I refer to as *constructive description*. At the next level down, I am concerned with a sociology that is consistent with constructive description, *social activity method* (SAM). These two levels constitute my mode of organising of the social as sociologist. Constructive description and SAM were both introduced in Dowling (1998) and developed in Dowling (in press).[1] The third level involves the deployment of SAM on some empirical material, mostly in the context of mathematics education, giving rise to the presentation of a modality of strategies constituting social inequality—social injustice—at local and global levels.

In Dowling (in press) I argue that a good deal of writing in sociology and in educational studies applies or seems to apply an approach that I refer to as *forensics*. By this term I mean research that makes a hard claim to be revealing or attempting to reveal the world, or aspects of it, as it really is. Such claims entail a realist stance and my opposition to forensics (in the sense that I am doing something else, not that I oppose its use by others) is antirealist or, perhaps more appropriately, arealist. I do not propose, here, to summarise the well-rehearsed arguments relating to the timeless realist/antirealist debate (but see Dowling (in press), also Ward (1996) and

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[1] In the earlier work, the expression 'social activity theory' was used; this was changed to 'social activity method' in the second work cited.

Harré & Krausz (1996)), but I will offer a schema that identifies and locates four possible approaches—*discursive comportments*—in a relational space—the kind of space that is characteristic of SAM. I can begin by suggesting that there are two opposing modes of forensics. The first mode entails the attempt to *discover* a world of which its own products stand as discursive representations, textualisings, even though this is, other than in naïve realism, recognised as, ultimately, an uncertain and of necessity an incomplete ambition. The opposing mode involves the attempt to uncover a reality by dismantling things as they seem to be; this is *critique*. I refer to discovery and critique as exhibiting, respectively, *territorialising* and *de-territorialising vectors*. My opposition to forensics is *construction*. Here, there is no necessary postulation of a world beyond the discursive world of the construction itself; its territorialising and deterritorialising modes are constructive description and *deconstruction*. The relational space of discursive comportments is shown in Figure 1.

	Vector	
	Territorialising	De-territorialising
Forensics	*discovery*	*critique*
Construction	*constructive description*	*deconstruction*

Figure 1. Discursive Comportment (from Dowling (in press)

It is important, at the outset, to point out that the relational space in Figure 1 and the others in this paper are understood as schemata of ideal types that are intended to provide for the mapping of any given text or practice, which, overall, may be expected to exhibit more than one and possibly all four categories in the relevant schema. My own approach is dominated by constructive description. This general approach is also the basis of the research methodological scheme that was presented in Brown & Dowling (1998). I am, though, being just a little careless with the use of the term in Figure 1. This is because, strictly, speaking, constructive

description as I define it in my own work is more appropriately described as a species of territorialising construction. Essentially, the approach consists, firstly, of the inauguration of a dehiscence in the empirical world between empirical and theoretical texts. There is no essential distinction between the two forms of text, though some categories of text—interview transcripts, fieldnotes, images—are less likely than others—philosophical monographs, research reports—to be constituted as theoretical. Secondly, transaction between the theoretical and empirical produces an *internal language*, consisting of a reading of the theoretical texts and a set of *theoretical propositions*, and an *external language*, consisting of an *organisational language* and a description of the empirical texts. The deployment of constructive description is thus construed as an organising of the world—in my case, the social—rather than a representation of the world.

SAM, is a species of constructive description. Its internal language is very simple, consisting of a small number of theoretical propositions, the most crucial of which is that the social is defined, at any level of analysis, by the construction, maintenance and destabilising of alliances and oppositions that are emergent upon autopoietic action. In Dowling (in press) I have contrasted this, very simple internal language with that of Basil Bernstein's theory (for example, 2000), which is highly complex and coherent. For the time being, I measure the distinction between the two internal languages in terms of a category that I refer to as *discursive saturation* (DS). A practice exhibiting high DS (DS^+) is one in which strategies are deployed to render its principles available in discourse; this is very evident in Bernstein's language. This contrasts with a practice exhibiting low DS (DS^-), where there is little elaboration in discourse; this more closely fits with my own internal language.

On the other hand, the external language of SAM—that which allows it to touch the empirical—is far more highly developed (see, for example, the glossary of nearly 200 terms in Dowling (in press)); I shall introduce a part

of this language in this paper in formulating my argument relating to the social organising of mathematics education strategies. Bernstein, by contrast, has no developed external language, so that the categories of his internal language place very little pressure on the empirical texts that it confronts. For example, the operationalising of 'classification' and 'framing' as 'between' and 'within' produces an effectively reversible analysis, because between, at one level, can always be construed as within, at another. It is unsurprising, therefore, that classification and framing invariably run in tandem, strong classification entailing strong framing and weak classification entailing weak framing (Dowling (in press)).

External syntax (gaze)	Internal syntax	
	DS^{+}	DS^{-}
DS^{+}	*metonymic apparatus*	*method*
DS^{-}	*metaphoric apparatus*	*fiction*

$DS^{+/-}$ represents strong/weak *discursive saturation*.

Figure 2. Grammatical Modes (from Dowling (in press))

Taking the product of the two variables constituted by the level of DS of internal and external language gives rise to the relational space in Figure 2. This space was introduced in Dowling & Chung (in press) and constitutes a re-interpretation and development of Bernstein's own distinction between hierarchical knowledge structures having strong and weak grammars. It will be apparent, that I would describe Bernstein's theory as a *metaphoric apparatus* and my own approach as a *method*. Given the highly developed internal languages of physics and its recruitment of strongly principled inscription devices[2], it is appropriate to refer to this discipline as an instance of a *metonymic apparatus*. In a sense

[2] This expression is from Latour & Woolgar (1979), though they were concerned with endocrinology rather than physics.

the opposite practice of literary criticism, having comparatively weakly developed (i.e., in this case, not coherehnt) internal and external languages would be an example of a *fiction*. It is, however, important to emphasise again that we would expect empirical variation as any given field or practice is surveyed; the new historicism of literary critic Louis Montrose (1989), for example, might more appropriately be described as a metaphoric apparatus.

	Content (signifieds)	
Expression (signifiers)	I^{+}	I^{-}
I^{+}	*esoteric domain*	*descriptive domain*
I^{-}	*expressive domain*	*public domain*

$I^{+/-}$ represents strong/weak institutionalisation.

Figure 3. Domains of Action

As I have suggested, a key characteristic of SAM is the construction and deployment of relational spaces such as those presented in Figures 1 and 2. I want to introduce one more before moving on to empirical analysis. This space, shown in Figure 3, establishes four *domains of practice* by distinguishing the level of *institutionalisation* of the *content* and *expression* of a text or textual fragment. By institutionalisation, I mean a regularity of practice emergent on autopoietic action. In the case of school mathematics, for example, we can quite easily distinguish between text that deploys exclusively technical mathematical signs and text deploying signs where the expression and content are, shall we say, arbitrary with respect to mathematics. Examples of the latter mode would be texts concerning what are generally considered to be applications of mathematics—shopping and financial activities, for example. In the terms of Figure 3, the first mode of text is referred to as *esoteric domain* text, the second mode as *public domain* text. *Descriptive domain* text is constituted as mathematical modelling, where the expression is strongly institutionalised mathematical language, for example, using conventional

algebraic symbols, but the content—that to which the symbols refer—is arbitrary in the context of mathematics *per se*. *Expressive domain* is the converse of descriptive domain; here a non-mathematical signifier might be employed to signify a mathematical object—a piece of cake as a fraction, a balance as an equation, and so forth.

An organising of texts

The original deployment of the scheme in Figure 3 was in an analysis of the UK School Mathematics textbook scheme, *SMP 11-16*, published by Cambridge University Press and commonly used in schools in England and Wales as well as elsewhere in the 1980s and early 1990s. In school years 7 and 8, the *SMP 11-16* scheme consisted of a large number of booklets that were organised into levels and topics, but that could be used flexibly, in terms of sequence, for all students. At the start of school year 9, however, the scheme changed form and presented three series of textbooks for use in this and the subsequent two years. The textbooks were explicitly distinguished in terms of the 'ability' of the proposed student audience. The complete analysis of this scheme is presented in Dowling (1998)[3]; here, I will report on a very limited range of the findings of this work in order to establish my argument.

Firstly, a quantitative analysis of the *SMP 11-16* textbooks revealed that, the series that was directed at the highest 'ability' students contained an average of 43.4% (by area) of esoteric domain text, with the proportion increasing from 36.6% in the first book in the series to 54.4% in the final (fifth) book. The series directed at the 'lower ability' students, by contrast, averaged only 9.0% esoteric domain text and the proportion actually decreased from 14.2% in the first book to 5.2% in the final (eighth) book. Furthermore, the overwhelming majority of esoteric domain text in the

[3] See also Dowling (1994, 1996).

'lower ability' books was concerned with arithmetic, whereas the 'higher ability' books contained algebra, geometry, trigonometry and so forth.

Another interesting finding was that the 'high ability' books tended to move backwards and forwards between esoteric and public domain text, providing a kind of apprenticeship into both the esoteric domain and into the nature of its *gaze* onto the non-mathematical world. I would now describe this as constituting a metaphoric apparatus; the principles of the gaze—the external language of school mathematics—are not generally made explicit, but are acquired by example. The 'low ability' books generally did not move beyond the public domain other than, as I have indicated, in very restricted aspects of mathematics. This public domain was, of course, organised according to the principles of esoteric domain mathematics. Thus mathematised shopping is clearly not shopping as practised by shoppers; this observation is born out by studies of shoppers in action (for example, Lave *et al*, 1984). At the same time, where the text does not leave the public domain, it is not possible to reveal the esoteric domain principles that construct mathematised shopping. The 'low ability' books, therefore, present their audience with a practice that has no developed internal or external language, which is to say, a fiction.

The *SMP 11-16* books, then, apprentice one group of students into a metaphoric apparatus—the esoteric domain of school mathematics and its gaze—and restrict another group to a fiction, which is neither mathematics nor any of the practices that are signalled in the public domain. The respective student audiences of the two series of books are explicitly differentiated according to 'ability'. However, a semiotic analysis of the two series reveals also that the two series tend also to construct their student audiences in terms of social class. This is achieved via the differential placing of the audience in relation to characters and occupations in the books, thus 'high ability' students might objectify the activity of uniformed police officers, whilst 'low ability' students are positioned as themselves potential police officers. There is also a differentiation in terms of class-

specific signifiers such as salaries ('high ability') and wages ('low ability') and the formats and presentation of the content of the respective books also resonate with similar distinctions found, at the time, between UK national newspapers—say, *The Guardian* and *The Sun*—the audiences of which are also differentiated on roughly social class lines.

There is a sense, then, in which the *SMP 11-16* textbook scheme can be understood as an organising of school students that differentiates them in terms of social class and translates this difference into one of 'ability'. To this extent, only those recognised as higher social class are apprenticed into an activity that would contribute to the reproduction of that status. It will be noticed that I have not left the textbooks in this analysis; an alternative mode of social organising becomes apparent when I do.

Organising Schools

In two periods of three weeks in 1996 and 1997 my colleague, Andrew Brown, and I undertook an observation and interview study in three secondary schools in the Western Cape region of South Africa. This study is reported in detail in Dowling & Brown (in press). The first of the three schools, Mont Clair High School[4], was a prestigious, comparatively high fee school. Students attending this school at that time were predominantly from white, Protestant, middle class backgrounds; the school was very well resourced and supported by a comparatively wealthy parent community. We described this community as a 'globally distributed virtual community' (Dowling & Brown (in press), no page numbers as yet), a global distribution that was likely to be enhanced by the tendency for 'white flight' from South Africa, following the replacement of the National Party Government by the African National Congress in 1994. For the purposes of this paper, two findings relating to Mont Clair are relevant. The first concerns the

[4] The names of the schools have been fictionalised.

teacher/student identity relationship at the school, particularly in terms of the formal curriculum. It became apparent in our classroom observations that, whilst most of the teachers were clearly very much in control of what they were doing, they were also frequently put on the spot by individual students who would require clarification of a particular point made, or would throw in an apparent contradictory example to a grammatical principle that had been proposed by the teacher, or ask for a comparison between a historical analysis of the setting under discussion and a different setting, also on the curriculum. Thus, whilst the teacher was clearly in a position of authority in respect of the curriculum content, they were also accountable to the students in respect of the delivery of their knowledge. In this respect, the relations between teacher and student were what I refer to as *exchange* mode, which is to say, the principles of evaluation of an act or utterance are located with the audience rather than the author of the act or utterance. Furthermore, the students exercised their authority in relation to this accountability very much on an individualised basis; we saw no instance at all of collective action, even in the small number of classrooms where a novice teacher was providing what looked to be a rather inadequate service.

The other finding was that Mont Clair students generally understood the curriculum content as having value exclusively in terms of the access that it could provide to what, following Bourdieu (1991) we might refer to as the symbolic capital of the matriculation examination certificate. That is to say, they did not see that the curriculum content that they were enthusiastically engaging in acquiring would be of very much use to them beyond their time at Mont Clair.

The second school that I want to introduce was Siyafunda High School—a very different setting. Siyafunda was located in what was referred to as an ‘informal settlement’, consisting of housing that was mostly constructed by the residents from corrugated iron and other scrap material. The school was very poorly resourced, having less chairs in each

classroom than students wanting to sit on them, no textbooks in evidence, no overhead projectors and so forth. Many of the older students lived alone, not with their parents and some of the 'boys' were older than most of the teachers, having returned to school after years of saving to cover the cost of full-time education. For many of the teachers we spoke to, teaching was seen as a staging post *en route* to a more prestigious career, ideally in medicine or, if that failed, engineering or perhaps senior administrative work. Most of the teachers were very young and many lived just outside of the township in simple, but conventionally constructed housing in an area that used to be a coloured township.[5] Whereas the teachers at Mont Clair were in a position that might be described as economic service providers to the students as clients, the Siyafunda teachers, it seemed, had an obligation to serve the township community as educators. They were also obliged to serve as moral regulators, being required by the pupil committee to administer corporal punishment to boys who had assaulted girls; this, even though corporal punishment was proscribed by the provincial council.

Another contrast with the Mont Clair context was the collective identity of the students. Teachers never, in our observation, called students by name and we were told that they generally would not know students' names; students made no attempts to mark themselves out from the collective, quite the contrary, often ducking down, obscuring themselves when required to answer a question. In the school assemblies—held in the open, in the space between two classroom blocks—the songs and prayers were led by an individual student, who would begin the song, but we were not able to identify who this individual was; they were hidden in the crowd; the principal gave the appearance of being a guest at the assemblies rather

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[5] The term 'coloured' was employed by the apartheid regime to refer to people of mixed race descent and Moslems who were not 'Indian'. It has since been embraced by the people so described as a positive identity marker in the same kind of way that the previously derogatory, 'black', was embraced as a celebratory term by African Americans in the 1970s.

than the person running them. We encountered two students who were dressed in a very flashy style—sharp and colourful, almost zoot suits, and large hats; these students kept very much to themselves. It had been suggested to us, by people outside of the Siyafunda community, that these were gangsters. A key informant from within the community, however, told us that these boys had just returned from the traditional male initiation and were required to dress so as to mark themselves out for a period, generally of about six months. They would be feeling very embarrassed by having to be marked out in this way and this explained their solitary behaviour.

We asked the students about the content of the curriculum, whether they would be satisfied with a matriculation certificate without having to go through all the learning. Absolutely not, they said, the knowledge is the 'base' for all that follows and had to be learned properly, had to be *embodied*. This, again, was in stark contrast with the Mont Clair students, for whom it was the *objectification* of knowledge in the form of certification.

I have described the relationship between the Mont Clair teachers and students as, in some respects, *exchange* mode. This was also the case at Siyafunda, though in there it was collective rather than individualised accountability. The situation at the third school was very different. Protea High School was located in a coloured suburb. The principal of Protea told us that the community comprised people of mixed race, generally Christian and Afrikaans speaking, and Moslems whose first language was English.[6] The community was also very diverse in terms of social class; housing ranged from very expensive detached buildings on large plots of land through, low-rise blocks of flats, to shanties similar to those in the Siyafunda community; whilst most of the students walked to school, some arrived, driven by their parents in brand new 7-series BMWs. This is a very unusual form of community that we referred to as *class condensation*. It

[6] The cultural composition of the 'coloured' population is not as simple or as polarised as this; I am reporting here only what the principal told us.

was established by the apartheid residence laws, which required people of particular ‘races’ to live in designated areas. Some of the coloured population—lawyers, medical doctors, industrialists—might be quite wealthy, but they had not, during the apartheid era, been allowed to move into the more salubrious white suburbs.

The nature of the Protea community, then, was certainly not collective. Teachers had to work at establishing communal harmony in the classroom. In one mathematics class the teacher began the lesson by pointing at two piles of exercise books, one much taller than the other. The shorter pile—only four or five books—comprised the books from the only students who had completed their homework. The teacher told the class that she felt betrayed, let down by the others. The ‘good’ students were called up to the front of the classroom and asked to write up the solutions to the homework on the board; the others copied the solutions into their books. The bad feeling generated by the teacher was not sustained, however, and by the end of the lesson she was smiling again; but the whole class—including the ‘good’ students—had to do the homework again, ‘because it will be good for you’. The punishment regime at Protea included a good deal of rather more dramatic naming and shaming; wrongdoers were, apparently, quite often made to stand in high-traffic areas bearing a notice of their offence strung around their necks. The teacher, in the Protea suburb, was, we were told, regarded as a senior member of the community, a community leader. A lot of community activity took place in the school in the evenings and at weekends; one teacher went as far as to serve as a volunteer driver, taking men to football matches in the school minibus so that they wouldn’t have to drive themselves home after the inevitable drinking spree during the game.

The students at Protea were, like the Mont Clair students, individualised, but the teacher/student relationship was clearly not exchange mode. Rather, the teacher, in a position of *guardian*, stood almost completely in *pedagogic* mode, themselves retaining control over the principles of

evaluation of their acts and utterances. Like the Mont Clair students, those at Protea generally saw the curriculum in terms of its potentially objectified symbolic form, the content itself to be dispensed with on graduation.

	Teacher/Student Relations	
Community	Exchange	Pedagogic
Individualised	*service provider/client*	*guardian/ward*
Collective	*community servant/community member*	*general/footsoldier*

Figure 4. Teacher/Student Identity

I have described the three schools in a way that has allowed me to introduce two more relational spaces. Firstly, I have distinguished between individualised and collective communities and exchange and pedagogic teacher/student relation. The product of these two variables gives rise to the identity space in Figure 4. Again, the teacher/student identities will have varied depending upon just where we looked in each of the schools, but I am suggesting that Mont Clair exhibited the service provider/client identity, to a substantial degree and that this was largely absent from the other two schools. Siyafunda was generally characterised by a community servant/community member identity and this was also essentially unique to this school. The guardian/ward identity that dominated in Protea was also apparent at Mont Clair, but to a far less extent. In general, then, the three schools can be distinguished in terms of these three modes of teacher/student identity and, furthermore, these identities were largely unchallenged by teachers or students; in this sense, each school sustained an *identity equilibrium*. It is worth mentioning that we observed that the principal at Siyafunda in the second year of our visits[7] made some attempts to establish the general/footsoldier teacher/student identity by, for

[7] The principal we met in our first year visits had taken up the post of principal at another school and the post at Siyafunda had been filled by a promotion.

example, trying to take a more pedagogic role at the assembly and, in her English classroom, by deviating from the official curriculum to, in effect, preach (though she called it a discussion) about teenage pregnancy. It seemed quite clear to us that these attempts simply did not work and that she was essentially being ignored by the students. Another teacher—a teacher of Afrikaans, a highly unpopular subject in this Xhosa community—had managed to shift the teacher/student identity to that of guardian/ward via the deployment of highly charismatic, individualising pedagogic strategies; this teacher, however, did stick to the curriculum.

I have, in fact, only provided enough information to complete half of the second relational space that I want to introduce in describing these schools, but I will present it fully here. The space is intended to stand as a development, for my own purposes, of Bourdieu's (1991) forms of capital. I have never liked the use of the term 'capital in Bourdieu's sense; I have never quite grasped what it might mean to 'exchange' cultural capital; after all, you don't yield anything in this kind of exchange. I do, however, feel that Bourdieu's (1977) dialogic of embodied and objectified culture is productive and am using this, *mutatis mutandis*, as one dimension of my scheme. The second dimension concerns the focus of a pedagogic activity, which may be on the *practice* to be acquired or, alternatively, on *relations* to be established between individuals and groups. The product of these two variables generates the schema in Figure 5.

	Acquirer Focus	
Culture	Practice	Relations
Embodiment	*habitus*	*hub*
Objectification	*symbols*	*network*

Figure 5. Acquirer Strategies

In my descriptions of the three schools, I have made observations about how students regarded that which was to be acquired in terms of

curriculum content. This concerns the *practice* column in Figure 5. In two of the schools, Mont Clair and Protea, the curriculum content was valued in terms of its *symbolic* objectification in the form of the matriculation certificate. Whilst passing matric. may well entail acquiring embodied curricular discourse and skills as *habitus*, it was not this that mattered; once the ladder has been used to get onto the roof it can be dispensed with (unless you want to come back down). At Siyafuynda, by contrast, it was precisely the embodied curriculum—the habitus—that was being sought and, in this case, its objectification in symbolic form would be the inevitable outcome of successful acquisition. There was an exception to this at Siyafunda; this was in respect of Afrikaans. We were told that Afrikaans, perceived as the language of the oppressor, was very unpopular and students would make no effort to acquire it until the point of the matric. exam. A pass in Afrikaans was a requirement for matriculation, so students would cram at the last minute in order to get their pass—a prevalence of the symbolic over habitus. That the students did work hard and apparently did very well in the classes of the Afrikaans teacher that I have mentioned above is a strong testament to her *charismatic authority* (see Dowling (in press).[8]

The official curriculum at all three schools and for all students was essentially the same.[9] So we do not have, here, the same mode of differentiation as in the English *SMP 11-16* scheme. Failing students would not be permitted to advance and would drop out before graduating, but, at least in terms of mathematics, they would all be served with the metaphoric apparatus—no fiction. Differentiation is achieved via the distinct

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[8] This teacher also taught biology, apparently in much the same way and with the same kinds of results. She was regarded as an outstanding teacher, but the second principal at Siyafunda had not been in a position to find a permanent post for her, and the first principal appointed her at his new school.

[9] Although Protea was a dual-medium school and about one-third of the students had lessons in Afrikaans rather than English.

teacher/student identities and the distinct acquirer strategies that dominated in the respective schools. I shall explore a possible implication of the latter following the next section of this paper. First, however, I should make some reference to the *relations* column of Figure 5.

The distinction that I have made, in the third column of Figure 5, is between an orientation to embodied relations, on the one hand, and to objectified relations, on the other. The latter refers to the kind of relations that are established for another, frequently economic, purpose, which is to say, it is not the relationship itself that is of value, but what it might enable. I have termed this the *network* mode. By contrast, there are other forms of relations that are valued in and of themselves. This mode would describe certain kinship relations as well as romantic relations and relations between friends as friends. Because the emphasis is on embodiment, the acquirer in this mode stands at the centre of the collective as a *hub*. I should emphasise that, again, I am not essentialising, for example, romantic relations as necessarily exhibiting this mode. Rather, I am calling on a frequently encountered experience to illustrate a possible realisation of this mode. Possible, but not necessary; people have been known, I understand, to marry for money.

It is possible to speculate that the opportunities for networking may have been greater at Protea than at Siyafunda, because of the greater diversity of the community, in social class terms,[10] and greater still Mont Clair by virtue of its globally distributed virtual community. However, I have very little data that would enable me to speak confidently about the ways and extent to which networking is pursued at any of these schools. Presumably, there are similar opportunities at each school for developing the hub mode of relations. Again, though I have insufficient data to explore

[10] Although it is certainly not the case that there was no class differentiation in the Siyafunda community, which will be even more highly differentiated now, ten years on.

this empirically. These deficiencies may clearly be explored in further research.

The schema in Figure 5 might be interpreted to develop Bourdieu's (1991, 1985) conceptualising of forms of capital, social capital being recontextualised in the relations column and cultural and symbolic capital as habitus and symbol respectively. I have not attempted to incorporate economic capital into the schema, because this seems to me to be a different order of concept in the sense that it entails countability, whereas the other forms do not, although Bourdieu clearly needs to establish their in principle countability in order to pursue his own kind of quantitative heuristics (1984, 1988). For this reason, I am not claiming to have improved on Bourdieu's concepts. In Dowling and Chung (in press) we refer to this kind of recontextualisation as *misreading* or (following Harold Bloom (1973) *misprision*: a self-conscious misreading, to be distinguished from *misrecognition*. I am misreading Bourdieu in order to develop a schema that works in the context of my own organisational language.

Organising the globe

I want now to move on to the final empirical context that I shall engage in this paper. In doing this, I am moving back to text, this time the Trends in International Mathematics and Science Study (TIMSS) website.[11] Again, the analysis of this material has been presented in detail elsewhere (Dowling, 2007, in press) and again I shall introduce aspects of the findings of that work in order to make my argument for this paper as a whole.

Although the TIMSS studies are carried out under the auspices of the American governmental National Center for Educational Statistics, they are widely recruited by governments and other parties having an interest in

[11] This site is at http://nces.ed.gov/timss/ and now has a different design from the 2004 site that I examined. The new site, however, retains the test and compare facility that is referred to below.

comparative educational performance globally; here is a press notice from the UK Department for Children, Schools and Families on the 2003 study:

> Schools Minister Stephen Twigg today welcomed the results from an international comparison study which suggests that England's primary pupils were among the best performers in science and maths. According to the Trends in International Mathematics and Science Study (TIMSS) released today only two countries scored significantly higher than England at primary age in science. Also the progress made in maths since 1995 was larger than any other country.
>
> (http://www.dfes.gov.uk/pns/DisplayPN.cgi?pn_id=2004_0221)

TIMSS is thus conferred with a *bureaucratic* form of authority (see Dowling (in press) in respect of what counts as legitimate mathematical and scientific performance. I should add that the exclusive privileging of mathematics and science—other areas of the school curriculum are not as easy to globalise in this way—establishes this combination—I shall refer to it as *mathematicoscience*—as the legitimate public mode of discourse. The nature of precisely what does count as legitimate mathematical and scientific performance is most readily accessible on a test and compare facility incorporated in the TIMSS site. This presents the visitor with example test items from the TIMSS studies and allows them to see the performances on these items by those tested in various countries. One example from the mathematics series provides a table thus:

x	*y*
2	5
3	7
4	?
7	15

Following which:

> The table represents a relation between x and y. What is the missing number in this table?

Radio buttons offer 9, 10, 11, 12 and 13 as possible answers, with 9 receiving a ‘correct’ response when the test form is submitted. What is interesting about this item is that, since the nature of the relation between *x* and *y* is not specified, all five of the answers offered are acceptable, mathematically as is any other number—the question implying that the relationship is a numerical one.

Another item shows a drawing of a car in front of a building and asks the respondent to estimate the length of the building, given that the car is 3.5 m long. However, there is no information about either the width of the car or its distance from the building or, indeed, the position of the viewer. Making estimates for the missing information, it is quite possible to arrive at 18 m as an answer rather than the 14 m that the site marks as correct.

One item from the science series states:

> Four children can feel and smell an object inside a bag, but they cannot see it. Which of the following is NOT an observation about the object?

Of the four choices, the site marks ‘I hope it is candy’ as the non-observation. But if we reformulate this as, ‘the object in the bag is something that I hope is candy’, then quite clearly it is an observation about the object, but a subjective one. Another science item:

> Two open bottles, one filled with vinegar and the other with olive oil, were left on a window sill in the Sun. Several days later it was observed that the bottles were no longer full. What can be concluded from this observation?

The capitalising of the first letter of ‘Sun’ as the proper name of a star rather than an everyday noun might alert us to the fact that the most obvious explanation to the missing oil and vinegar mystery—that someone has been making salad—is not going to be included in the list of choices; of course, it isn’t.

Now despite my recognition of the ambiguities in these test items, I obtained ‘correct’ answers to these and to all of the other items that I tried out on my first attempt. This is presumably consistent with my status as a

graduate in physics and a one-time teacher of high school mathematics and science. My point, then, is not to criticise these test items on grounds of validity or reliability, but, rather, to illustrate the kind of discourse that is being established as legitimate mathematicoscience. Specifically, this is a discourse that must exclude the subjective and the contingent. I want further to propose that, insofar as we can regard mathematics as a formalised discourse and science as a formalising discourse, then we may conclude that the former aspect of the discourse regulates the legitimate mode of argumentation and the latter the legitimate mode of relationship to the empirical. Mathematicoscience achieves this by relegating to the private domain all other forms of discourse; we can't talk about making salad and wanting candy in proper science; we can't introduce real cars and real people into mathematical diagrams; and random relationships between sets of numbers are not mathematically interesting. This privatising is established by the exclusive nature of the multiple-choice format of the test items as well as the insistence of the item assessments.

I mentioned that the TIMSS site gives exclusive privilege to mathematics and science. This is not entirely the case. It also includes items from the Civic Education Study (CivEd). The CivEd site notes:

> All societies have a continuing interest in the ways in which their young people are prepared for citizenship and learn to take part in public affairs. At the turn of this new century this has become a matter of increased importance not only in societies striving to establish or reestablish democratic governments, but also in societies with continuous and long established democratic traditions.
>
> (http://nces.ed.gov/surveys/cived/)

Is there a sense in which 'democratic government' and 'democratic tradition' are oxymorons? In any event an affiliation or aspiration to democracy as defined by government and tradition is here being installed as an absolute good alongside mathematicoscience as its mechanism of ratiocination.

As I have indicated, the central theoretical proposition of SAM is that the social is defined, at any level of analysis, by the construction, maintenance and destabilising of alliances and oppositions that are emergent upon autopoietic action. That which enables the recognition of an alliance/opposition is its own, emergent specialised practices. Mathematicoscience and democracy are such practices that operate, as I have argued, at a public level, privatising all alternatives. Yet we know that the work that goes into social action is very substantially conducted in private—in the lavatories, not the cabinet meeting. In critique mode, I would be referring to mathematicoscience and democracy as ideology. But not here, my methodology does not construct an invisible, subjacent, causal level of the real. The distinction between public and private is one of level of analysis. The public places no limit on the number of range of participants; the private does; it is a distinction between open and closed. Mathematicoscience and democracy do constitute the language of an alliance, but it is an alliance that seeks no more than global domination. It is mathematicoscience and democracy as symbol, not as habitus and the alliance as network not as hub that counts. In the end, all acts can be rationalised—even going to war when one is not under threat—and cars can be flattened against building walls in exhibition of the efficacy of school mathematics.

None of this is to denounce far less reject mathematicoscience or democracy, but to propose seeing them as symbols and not as mechanisms in the formation, maintenance or destabilising of new alliances and oppositions, more private ones. Arguably, the students at Mont Clair and Protea are well aware of this; arguably, those at Siyafunda are less so. This form of social organising entails the fetishising of a practice as habitus: mathematicoscience is the route to all knowledge; democracy is the route to liberation; those jeans that make the wearer walk like a penguin really do look good.

Authority and Pastiche

My aim in this paper has been to outline my own approach to the organising of the social and to explore some of the ways in which this approach presents the social as organised in terms of social inequalities and exclusions. I have introduced several schemas that constitute part of the organisational language of SAM. I shall conclude by introducing two more. I have already referred to, but not elaborated upon, two of the terms of the first. I have described the Afrikaans teacher in Siyafunda as deploying *charismatic authority*. By this I mean that, in her particularly energetic and unpredictable teaching style, she claimed authority on her own behalf rather than on the legitimacy of a particular practice (although in some respects she did that too); this teacher is the unique author of action in her classroom. By contrast, mathematicoscience and the TIMSS site lay claim to *bureaucratic* authority. There is no author of mathematicoscience (nor, indeed, of democracy). Thus charismatic authority closes the category of author, leaving the field of practice open, whilst bureaucratic authority closes the field of practice, leaving the category of author open. This gives me the basis for the scheme in Figure 6.

Category of author	Field of Practice	
	Open	Closed
Closed	*Charismatic*	*Traditional*
Open	*Liberal*	*Bureaucratic*

Figure 6. Modes of Authority Action

Three of these terms, charismatic, traditional and bureaucratic, are recontextualised from Max Weber (1964). *Traditional* authority, in my schema, closes both the category of author and the field of practice. This is the authority of academic titles that attach, non-transferrably, to the title holder and that also signify a particular habitus; a professor of education

may pronounce on educational matters, but not profess to authority in medicine. The final category, *liberal* authority is the elimination of authority or, shall we say, the transfer of authority to the audience in exchange mode. In generalised form, it is the utopia of Piaget or Marx. I suspect that both of these liberal thinkers realised that their methodology entailed attributing the property of *equilibration* and, therefore, 'knowledge' of the nature of equilibrium, to their respective systems. This calls up my final schema for this paper. The schema in Figure 7 concerns interaction in alliances. Its first dimension distinguishes between an alliance of similars and an alliance of disimilars; the second between a target of discursive closure and a target of discursive openness.

Alliance	Target of Discursive Action	
	Closure	Openness
Similars	*equilibration*	*exchange of narratives*
Disimilars	*hegemony*	*pastiche*

Figure 7. Modes of Interactive Social Action

Piaget and Marx (see Piaget (2005) in respect of both, in this instance) must understand equilibration as a property of their privileged system and both see *hegemony* as a pathological form. Hegemony is the mode of interaction of conventional, which is to say authoritative, pedagogy: the discourse of the student is to give way to the discourse of the teacher; once this has occurred (again, ideally) the former student joins their professor in academic equilibration, developing the discipline. But the target of discursive action is not always closure. In particular, the recruitment of cited work in academic papers often establishes chains of names and dates in brackets that are not participating in any kind of active engagement with the author, their respective work being referred to only by a reference. This is the same pattern of interaction as that which might be found amongst a group of new friends in a holiday hotel bar, recounting

tales of former holidays; only laughter conjoins the stories; this is an *exchange of narratives*.

This paper has included language that must appear to be highly realist, as if I were telling a tale of things as they are; yet I have distanced myself from realism; I am constructing a discourse that has no essential referent. But, imagining them to be real for a moment, the *SMP 11-16* textbooks, the events in three schools in the Western Cape, the TIMSS website are not in themselves organised by this analysis. I have made reference to one or two academic authors in a way that is rather more than simply appending a name and a date. But I am asserting—here, as I asserted explicitly in respect of Bourdieu—that I am misreading their work in order to create my own as other than theirs. The data, the previous work, inspire, but neither determine nor are they corrected by me. This is *pastiche*.

The liberals are in a *Catch 22* situation: they want to eliminate authority, but to do so it seems that they have to act authoritatively. That is why Piaget and Marx have to attribute authority as an essential property of the system. This property, though, ultimately entails a cold end to the social, a social with no differentiation, no organising; a social world free of injustice is, unfortunately, a dead world. But we do not have to have such grand ambitions. More fruitful, perhaps, to work locally and iteratively on projects where new alliances seem possible, generate new organisings of the social, realised as texts or as contexts; our small corners of the world may become more pleasing to us in ways that satisfy our ethical agendas; things as they are will remain, if you insist, as they are.

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