

## **Reason and creativity in classroom dialogues**

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A concern with reason has always been at the heart of European educational theory. For the ancient Greeks reason was considered the defining characteristic of humanity. Both Aristotle and Plato argued that the promotion of reason should be a central aim of education. The movement for universal education that began in eighteenth century France, was at least in part inspired by the belief that education for all would expand the influence of reason in society and therefore fuel social progress. Harvey Siegel argues that thinking skills programmes are a continuation of this enlightenment project to promote reason by means of education (Siegel, 1997). Some ‘post-modernist’ thinkers, such as Lyotard and Foucault, have strongly criticised this enlightenment project. However most post-modern theory applied to education, when examined closely, does not involve a rejection of the ideal of reason so much as a redefinition of reason in terms of local dialogues (e.g Parker, 1997). The important question is not so much, should education promote reason but, rather, which model of reason should it promote? In this paper I first put forward the suggestion that dialogic models of reason can be constructed and applied to good effect within education and I illustrate this idea with the example of ‘Exploratory Talk’. However I further argue that close observation of actual dialogues highlights the essential importance of creativity to reason. This in turn suggests the development of a dialogic model of reason that goes beyond the teaching of explicit reasoning to include the promotion of creativity.

### **The dialogical paradigm**

One source for the dialogical paradigm in the social sciences are the writings of Ragnor Rommetveit (1992) and Per Linell (2001) which systematically compare dialogical

assumptions and monological assumptions. The monological paradigm, still very much the dominant paradigm in all areas of science, seeks to find the universal laws and structures underlying and explaining surface phenomena. Both Rommetveit and Linell argue that while monologism is clearly useful in some contexts it needs to be understood within a deeper and broader dialogical framework. The assumptions of this framework can be loosely summarised as:

- any communicative act is interdependent with other acts, it responds to what has gone before and anticipates future responses; it is similarly ‘in dialogue’ with other aspects of context such as the social setting
- cognition is mediated by the use of cultural artefacts including language and other communications technologies;
- words have a history and follow conventions - cultural identities can therefore ‘speak through’ individuals;
- meaning does not exist ‘ready-made’ beforehand but is always constructed in dialogues (which may well be the internal dialogues of thought).

(For a more detailed account of the assumptions of a dialogical paradigm see Linell, 1998, p 48)

The dialogical paradigm is relevant for any attempt to understand reason. Dialogicality means not merely that participants in interactions respond to what other participants do, they respond in a way that takes into account how they think other people are going to respond to them. Rommetveit, quoting Barwise and Perry, calls this circularity ‘atunement to the atunement of the other’ and points out, firstly that it influences most human behaviour and secondly that it is impossible to understand the effects of this circularity using monological representations (Rommetveit, 1992). Reason has been codified in various ways that have not taken this dialogical circularity into account. This is obviously true of accounts of argument found in formal logic but it is equally true of the various lists of ‘critical thinking skills’ that underpin many educational programmes. In the monological paradigm it is normal to see models as a way of getting a handle on reality which we can use to inform interventions that change things. Models of reason have served precisely this purpose in education. For those who adopt the assumptions of the dialogical paradigm, on the other hand, the role of models is not so straightforward. In

the next section I will discuss what it means to create a pragmatically effective dialogical model of reason.

## **The concept of a 'dialogical model' of reason**

### *a) Intersubjective orientations*

Models of reason in psychology that refer to logical structures in the mind reflect a strong tradition in the philosophy of rationality (or reason) since Plato linking human reason to formal logic and mathematics. While the claims of the social philosopher Jurgen Habermas have been criticised by dialogical theorists such as Linell (1998, p 11) there is none-the-less a dialogical vision of reason underlying his model of 'communicative rationality'. This is sometimes clearer in re-statements of his main thesis made by others. The feminist philosopher Seyla Benhabib, for example, argues that social life, especially bringing up children in peace, requires a 'concrete ideal' of the reasonable, an ideal which includes an attitude of care for others and willingness to listen to their point of view (1992). The pragmatist Richard Rorty similarly argues that while Habermas is misguided in seeking what he claims are universal and quasi-transcendental grounds for rationality he is right that rationality must be defined through 'the sort of encounter in which the truth cannot fail to win' (Rorty, 1991, p 39 – 'truth' is here intended pragmatically as something like the most useful thing to believe in a given context) and that this depends on certain 'virtues' such as 'relying on persuasion rather than force' and 'respect for the opinions of colleagues'.

Habermas himself begins his account of communicative rationality by drawing a distinction between 'a success-oriented attitude' and 'an attitude oriented to reaching understanding' (Habermas 1991, p 286). While he does not dismiss the strategic or profit-maximising rationality that issues from a success-oriented attitude he argues that this kind of rationality is parasitic on a more fundamental communicative rationality issuing from an attitude oriented to reaching understanding. Use of the word 'attitude' carries with it the danger of being interpreted as only referring to individual states whereas Habermas makes it clear that he is referring to ways in which participants in a dialogue can orient themselves to each other. He refers to this as the 'structural properties' of

intersubjectivity. To emphasise this I will use the term 'intersubjective orientation' in place of attitude.

Habermas's claim about the centrality of intersubjective orientations connects his later work to the very different tradition of Jewish writer and theologian, Martin Buber. In his seminal work, 'I and Thou', (Buber, 1923/70) Buber draws a distinction between the 'I-thou' type of relationship, characterised by mutual responsiveness, and 'I-it' relationships in which an active subject confronts and dominates a passive object.

A similar distinction is found later in the work of Bakhtin who contrasts the 'authoritative' voice to the 'persuasive' voice. The authoritative voice 'demands that we acknowledge it, that we make it our own; it binds us quite independent of any power it might have to persuade us internally'. This is the voice of literal meanings with 'no play with its borders, no gradual and flexible transitions, no spontaneously creative stylising variants on it' (Bakhtin, 1934/81 p343). Bakhtin contrasts this to what he calls 'the internally persuasive word' that:

is half-ours and half-someone else's. It's creativity and productiveness consist precisely in the fact that such a word awakens new and independent words, that it organises masses of our words from within, and does not remain in an isolated and static condition (*ibid.*)

Buber's distinction between 'I-thou' and 'I-it' modes was explicitly taken up and developed by Immanuel Lévinas, (1989b, p 59 - 74). Lévinas claims that the 'encounter with the face of the other' is an opening of meaning which underlies the possibility of reason or, what he called, 'la pensée raisonnable' (1990, p223). Levinas's thought had a considerable influence on Jaques Derrida, who was his student at the Sorbonne and so he is often described as one of the sources of contemporary post-structuralist theory. Monological reason, or what he called 'the Western tradition of reason', is, Levinas claims, a retreat into what he called a position of 'self-sovereignty' in which the other is kept at a distance precisely by 'representations' of it. Real reason or 'wisdom' begins, he claimed, with a response to 'the call of the other'. This projects the self into relationships of 'responsibility'. Again, as with Habermas, Buber and Bakhtin, reason is seen as rooted in fundamental intersubjective orientation between people in a concrete dialogue or encounter.

Evidence confirming the significance of intersubjective orientations for the development of thinking has recently been offered by Peter Hobson (2002). A developmental psychopathologist, Hobson studied the difference between the development of thinking in autistic children and in normal children. He claims to demonstrate, using experimental evidence as well as case studies, that the normal development of thinking crucially depends on the quality of the relationships formed in the first eighteen months of life. He describes relationships in which different perspectives are brought together as motivating initial symbol use and opening up 'a mental space' between the participants which then becomes internalised in individual consciousness. Autism is the result, he claims, of a failure, for whatever cause, to form such relationships. It is interesting that while autistic children can sometimes do the kind of fast and accurate calculations that computers can also do they lack a capacity for creative thought. Hobson's focus is the development of reason, in the ancient Greek sense, as that faculty that distinguishes normal human thinking. His work supports, at an ontogenetic level of analysis, Habermas's more phylogenetic claim that reason emerges historically out of an orientation towards mutual understanding.

These varied sources all suggest the significance of an account of 'intersubjective orientation' to any dialogical model of reason.

*b) interaction rules*

Buber's 'I-thou' relationship might be a pre-condition for the emergence of reason, as Hobson claims, but it is not, in itself, reasoning. For Habermas the possibility of rationality is always implicit in successful communication. One of his claims is that when the consensus assumed by communicative action is broken then the options are coercion of one side by the other (strategic action) or a move into explicit reasoning about different viewpoints. Over time reason, in this sense, emerges as the least costly option (it is worth noting that this may be a slow historical process of which we are only at the beginning). In Habermas's account of communicative rationality a second level of description of reason is often referred to as the social rules governing what he calls an 'ideal speech situation'. He never actually gives details of what these rules are. However, at one point he quotes approvingly an account by Alexy of the procedural rules that might be used to structure a speech situation in which unforced agreement could be achieved. These are

rules such as, that every participant has an equal right to participate and to question claims (Habermas, 1990 p 92). These particular rules have been criticised by Benhabib and others as being too formal. Benhabib's claim is that reasonableness stems not from the abstract rights of a universal other but from recognising the needs of a concrete other. But Habermas's important insight here is that we need shared social rules to open up a space for thinking between the Scylla of coercion on the one side and the Charybdis of unreflective consensus on the other.

### **'Exploratory talk' as a dialogical model**

So far I have argued from the literature that dialogical models of reason require at least two features: an account of fundamental intersubjective orientations and an account of social ground rules followed in an interaction. This can be illustrated more concretely in the idea of 'Exploratory Talk' that is influential in education in the UK since the 1970's (Barnes, 1976). The concept of Exploratory Talk was first put forward by Douglas Barnes and has more recently been developed and championed by Neil Mercer and colleagues. This is presented by Mercer (1995) as emerging in the context of a characterisation of three 'types of talk' found empirically in collaborative learning in classrooms. The three 'types of talk' described by Mercer can also, as a later article made clear (Wegerif and Mercer, 1997a) be seen as reflecting orientations of the kind that Habermas referred to as 'structural properties of intersubjectivity'.

- cumulative talk reflecting an orientation towards a group identity with sharing and a desire to understand each other but without any critical challenges,
- disputational talk reflecting an orientation towards individualised identity so that argument is seen as a competition which each seeks to win and
- exploratory talk which is oriented beyond group or individual identity towards the process of shared inquiry so it allows critical challenges and explicit reasoning within a co-operative framework.

Of these three intersubjective orientations the one found most educationally desirable by teachers, and that is closest to traditional ideas of rationality, is exploratory talk. This combines features of cumulative talk, being a kind of cooperation, with features of disputational talk, because it includes challenges and competition. However, the

competition in exploratory talk is between ideas not between people. A key indicator of an exploratory orientation is that participants are able to change their minds in response to good arguments. In the light of the previous discussion of intersubjective orientations it seems that an exploratory orientation is a development from a communicative orientation in which social ground rules support shared inquiry within a relationship of trust and co-operation.

To turn this idea of exploratory talk into a useful model that could be applied in a classroom the research team needed to specify it more closely in terms of social ground rules. A recent list of these ground rules given by Mercer et al (2003) is as follows:

- .
- All relevant information is shared
- All members of the group are invited to contribute to the discussion
- Opinions and ideas are respected and considered
- Everyone is asked to make their reasons clear
- Challenges and alternatives are made explicit and are negotiated
- The group seeks to reach agreement before taking a decision or acting.

This model has now been applied in several research studies (e.g Mercer, Wegerif and Dawes, 1998; Wegerif, Mercer and Dawes, 1999; Mercer, Dawes, Wegerif and Sams, in press). Encouraging children to take an exploratory orientation and to use these ground rules meant working with teachers to 'teach' these ground rules and to turn the classroom into a social and physical environment that supported and rewarded their use. The ground rules displayed on the wall were important for this as were the seating arrangements and the frequent reminders from the teacher that the way groups talked together was as important and valued as the answers that they came to. Equally important was the way that the teacher talked with the class. Using the 'talk lessons' led the talk of the teachers to change almost as much as the talk of the children.

A study in Mexico by Rojas-Drummond et al confirms earlier findings reported by Mercer, Wegerif and Dawes (1999) and by Wegerif, Dawes and Mercer (1999) that teaching primary age children to use exploratory talk leads to an improvement in their individual test scores on standard tests of non-verbal reasoning. These findings support

the claim that children learn to reason better as individuals through personally appropriating strategies used first in dialogue with others. This finding fits well with Vygotsky's theory that, as he put it: 'all that is internal in the higher mental functions was at one time external' (Vygotsky, 1991, p 36 ) meaning that the ability to perform cognitive tasks when acting alone stems from a prior socialisation process when the same or similar tasks are performed with the help of others. More qualitative analyses of the talk of children solving reasoning test problems also support the claim that the exploratory orientation and the ground rules of exploratory talk worked as a dialogical model of reason (Wegerif and Mercer, 2000).

### **A neglected fourth type of talk: playful talk**

Transcripts of children's talk collected in the course of this series of projects have always included a great deal of off-task nonsense talk or banter. When the team began thinking about the three types of talk in terms of 'intersubjective orientations' they realised that this was a type of talk that could be characterised in terms of a fundamental intersubjective orientation, one of playfulness, with a concomitant set of ground rules. Although this idea was discussed by the research team it was not included in presentations of the types of talk idea. The reason for this was that it was off-task talk and did not seem very useful. In this paper I will re-visit the neglected idea of 'playful talk' and suggest that it may well be central to the aim of improving the quality of thinking and learning in classrooms. My argument is that incorporating the understanding of creativity in talk that comes from playful talk should help us to expand the original notion of exploratory talk into a broader model of constructive talk that includes all talk that helps forge new shared understanding but takes different forms in different contexts.

I will trace the connection between playful talk and cognition through four examples taken from transcript extracts taken of classroom talk.

#### **1) Off-task playful talk**

It is actually very hard to get children to perform any kind of task at school without their being creative with language. In the following example three nine year old children: Karen, Anna and Nick were asked to work together around a piece of software called 'Bubble Dialogue'. This software shows cartoon characters in a difficult situation and the

users have to fill in the thoughts bubbles and speech bubbles of the characters. In this case the cartoon characters were called Jane and Robert. Jane knew that Robert had stolen some chocolates from the sweet shop. Now her money was missing and she thought Robert might have stolen that too. Karen, Anna and Nick were asked to talk together about the issues and think about how the characters would feel. They did not really do that but they did produce some interesting word play. We join them as they construct together what they will type.

Transcript Extract 1: funny money

Sharon: I think  
Gail: I think Robert stole the stuff  
Sharon: That  
Nick: That Robert stole my bunny  
(Sharon and Gail laugh)  
Sharon: My money  
Gail: Funny  
Nick: It's not money I said bunny  
Sharon: It's his money  
Gail: I've said bunny

A few lines later they are typing in together the word 'chocolates' and Gail says: 'lovely, *yummy*, chocolates' echoing the earlier use of money, bunny, funny. She then continues in a different voice to indicate that she is quoting:

'life is in a box of chocolates'

Nobody picks up this reference to the film: 'Forest Gump' Three lines later Gail tries another reference to a different context, singing:

'Choc-o-lets. Tasty. Cadbury's Quake'

in the tune of an advertisement for Cadbury's Flake. This time Nick picks this up responding to use of Quake with the word:

'Quavers'

Which is a popular snack also advertised on TV. Sharon, who is typing this whole time, brings them back to the task, as she sees it, by saying:

'Chocolates'

and then beginning to spell it out.

'C, H, O, C'.

For now the others join her in spelling out chocolate, but it is not long before the word play breaks out again, 'chocolate' being turned by Sharon into 'choc then its late'.

Despite the teacher's best efforts these children interpreted the task as more about typing words into the boxes than thinking about issues. This task-interpretation is a common one and probably reflects their educational history. What is interesting though, is that they cannot do this task straight; they rhyme and break into little songs, use silly voices and puns and generally play around with language. In this they are not exceptional. Ron Carter (1999) argues that this creative 'poetic' use of language is so common in everyday talk amongst equals that it should be considered the norm. This has only become apparent recently because it has only recently been possible to collect large amounts of data of ordinary spoken language. Before this research tended to focus more on available written texts and word play was believed to be a deviant and specifically literary form.

## **2 On-task playful talk**

I am not going to claim that rhyming 'money, bunny, funny and yummy' is in itself something we should call reasoning. However it is creative. This is brought out more clearly in a transcript extract given by Neil Mercer (1995: page 101) to illustrate 'cumulative talk'.

This example is from a session in which two 10 year old girls, Katie and Anne, were working on the production of their own class newspaper, using some desktop publishing software for schools called *Front Page Extra*. At the point the sequence begins, they have been engaged in the task for about an hour and a quarter and are trying to compose some text for their front page.

Transcript Extract 2: Fatabuloso (Mercer, 1995, page 101)

Katie: Okay, so right then. What shall we write?

Anne: We can have something like those autograph columns and things like that and items, messages

Katie: Inside these covers (*pause 3+secs*) Our fun filled

Anne: That's it!

Katie: Something

Anne: Something like that!

Katie: Yeah

Anne: Inside this fabulous fun filled covers are - how can we have a fun filled cover? Let me try

Katie: Inside these (*pause 3+ secs*)

Anne: Hah huh (*laughs*)

Anne: You sound happy on this. Fantabuloso (*laughs*)

Katie: inside these inside these fant, inside these fun-filled, no inside these covers these fantastic these brilliant

Anne: Brilliant

Katie: Is it brilliant?

Anne: No

Katie: No. Fantast fantabuloso shall we put that?

Anne: Yeah (*inaudible*) fantabluloso

Katie: Fan - tab -u- lo-so

Anne: Loso. Fantabuloso.

Katie: Fantabuloso oso

The importance of this example, and why I am returning to it again, is that here the children, Katie and Anna, apply word play to the task they had been given. Here creative word play moves over from just being a bit of fun to being useful. Katie and Anne are taking their work seriously. They could almost be a couple of creative marketing executives trying to find a new name for a product. Products with very similar names: Fab, Fanta, Brillo etc. already exist and were presumably thought up through a similar kind of shared creative process. The difference between this and the 'money' transcript is that here the talk is oriented to finding the best possible solution to the problem set. Sharon, Gail and Nick do not link their verbal play to the task in hand, it is just a bit of fun, if anything it is subverting the task. Their play is creative in that it generates lots of new links and potential ideas - is life really like a box of chocolates? - but they do not build on any of them. Katie and Anne do build. Their creative play becomes reasoning because they apply implicit shared criteria to select the preferred response. Katie asks 'Is it *brilliant*?' i.e does this word fit and she agrees with Anna that it is not quite right. Both then converge on 'fantabuloso'.

### **3 Thinking by resonance**

To consider how to produce an understanding of dialogical reason that goes beyond a reduction to the process of explicit verbal reasoning I will use the analysis of an example of thinking in the talk of seven and eight year old children engaged in a 'philosophy for children' session.

As we join them the children are thinking together with a teacher about issues raised by a picture book that they all have in front of them. The book is 'Where the Wild Things Are' by Maurice Sendak (Sendak, 1968). When we join them they have just read aloud about how the hero of the story's bedroom turns into a forest and the bedroom walls 'become the whole world'. The teacher, Mark Prentice, then encourages them to think about imagination and the meaning of the word 'world'. Below is a lightly edited version of the talk that follows:

### **Transcript extract 3: creating and dissolving worlds**

Helen: [You can just start] staring at things and make it into your picture.

Helen: It can be about 20 things in one place.

Teacher: Say that again Helen because it's interesting.

Helen: There's about 20 things in one place .

Teacher: That you can just look at and stare?

Helen: Yeh there are also lines on the curtains they could turn into loads of green leaves.

Emma: Yeh or bamboo stalks.

Teacher: So you can stare at something and get a different picture?

Emma: Yeh you could change it into a leopard or something.

Teacher: Have you ever done that? Stared at something and looked at all the shapes that are inside it?

Alex: Yeh you could turn that into a big bone or something.

Teacher: This radiator here - so we have power to change things don't we. How do we do that?

Emma: I was in my room the other day and I closed my eyes nearly shut and my rocking horse I thought it was this kind of a pot - a shaking pot.

[...]

Teacher: Can you create your own world?

Several: Yes.

Teacher: How can you create your own world?

Several: Imagining, dreaming.

Teacher: That's interesting so you can create your own world by imagining - did Helen create a world when she started to talk about the curtains up there?

Helen: There's about a thousand worlds all in one person's head, all in one place.

[...]

Teacher: What do you think - Alex?

Alex: Well one time I invented my own country which I called Alexland cos I became my bedroom a whole country and I pretend all my toys are alive.

Teacher: So you created a world .

Alex: Yes.

Teacher: Now is that a real world?

Alex: Well sometimes I feel like its really real but then when I've found something like a catalogue, which I pretend you couldn't get catalogues and stuff like that, then the world just disappears.

Teacher: So it disappears when you look at something else.

Alex: Yeh when I look at something - when I go downstairs it just disappears, because my bedroom's the best place - because my toys are up there.

The teacher's role is very interesting here. He is not giving them ideas but facilitating the group thinking by repeating key points and asking prompting questions.

Here there are few challenges or explicit reasons. Instead the children seem to build on each other's comments with similar memories and ideas. Helen's idea that things can seem to be different as if 'there were about twenty things in one place' is picked up by Emma and Alex who share examples of this. This is what has been called cumulative talk because there is a sharing of experience and ideas without challenges or critical grounding. But it is nonetheless apparent that some serious thinking is going on. This leads up to the realisation, articulated by Alex, that there can be two different worlds, his own world and the adult world, and that objects from the adult world, found in his world, can make his world dissolve. Someone could say that this is not reasoning but just a description of his experience. However reasoning is implicit in the description. This way of describing experience is a way of seeking to understand it and these descriptions reveal

the world in a new way. This is perhaps what Wittgenstein calls a 'perspicuous representation' (Wittgenstein, 1978). He describes his experience but with insight into its general structure.

This description of how his world can dissolve in the face of anomalous objects is given in response to a prompt by the teacher that could be taken as a challenge. 'Is it really real?' But Alex does not reply to this with any explicit reasoning of the kind 'yes it is, because' or 'no it isn't, because' - he replies with a description that is a kind of anecdote.

Well sometimes I feel like its really real but then when I've found something like a catalogue, which I pretend you couldn't get catalogues and stuff like that, then the world just disappears.

We could say of this that Alex offers a reason why Alexland is not really real. However, the whole utterance here is much more than just a piece of explicit reasoning, it is also a sharing of his experience in a way that invites us inside that experience.

For me Alex's understanding that one world can be dissolved by the presence of an artefact from another world is a powerful piece of thinking. However I understand this through the similar ideas that it evokes for me but probably not for Alex. I am thinking of the role of catalysts in chemistry turning one kind of thing almost instantly into a very different kind of thing. I am also led to the idea of a paradigm shift in the development of science that has been described by Thomas Kuhn as a radical shift to a different world view sometimes sparked by anomalies thrown up by the original paradigm.

My response to what Alex says takes me beyond what is given, not through explicit reasoning but through a kind of resonance in which the structure of his narrative account connects for me with similar structures in events that I have read about or experienced. It is precisely through this kind of resonance that the children seem to be building on each others ideas. One child sees a forest of green leaves emerging from the shapes in the curtain, another sees the radiator on the wall as the spinal bone of an animal a third sees her rocking chair as a 'shaking pot' and so they share and build the idea of different worlds and the factors that influence how these different worlds form and dissolve. Alex's very clear statement of a powerful idea does not come on its own but is a product of this dialogue. It is probably as new for him as for the others in the group.

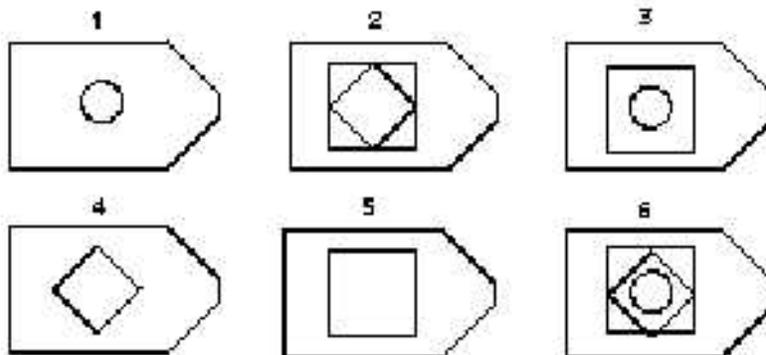
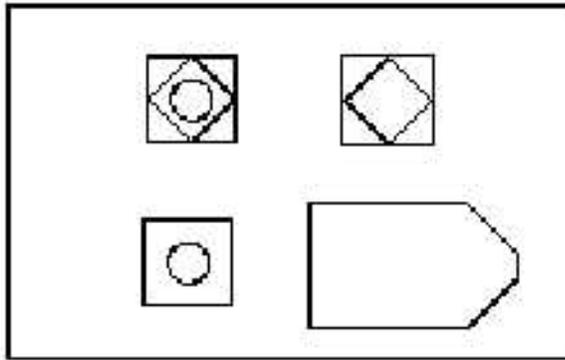
Creative play with words and ideas assumes an orientation of mutual trust and support where each participant knows that what he or she says will be accepted. In the exploratory talk around reasoning tests the children frequently rejected suggestions saying something like: 'No, I don't agree because of x, y, z'. In the example above it would be unlikely that anyone would reply to Alex's claim that you can see the radiator as a big bone by saying 'No, I don't agree because ...'. Instead the participants try to make the best sense they can of a different perspective, and this effort seems to open up a space of reflection in which ideas can resonate together.

#### **4 Metaphors to solve a reasoning test problems**

In several studies colleagues and I have assessed the impact of teaching exploratory talk by giving children standard reasoning test problems to solve together in groups before our teaching intervention and again afterwards. In analysing children's talk solving Raven's test problems we focused on the evidence of the role of explicit reasoning, looking, for example, for instances of the use of logical connectors such as 'because'. However we also found that problems were solved not through explicit reasoning so much as through the generation of perspicuous representations that were based on physical metaphors. I will give a short example of the data and then explain more what I mean.

Here is a short extract the group's talk after a series of 'Thinking Together' lessons promoting the use of Exploratory Talk. (An analysis of the full transcript has been published in Wegerif and Mercer, 2000 so I will not repeat this here).

**Figure 1. Problem B12 of Raven's Standard Progressive Matrices**



**Transcript Extract 4: taking the circle out**

Trisha: Look that's got a triangle, that's got a square, look that's got a square with a diamond with a circle in, that's got a square with a diamond in and that's got a square with a circle in so that's got to be a square

George: I don't understand this at all

Trisha: Because look on that they've taken the circle out yes? So on that you are going to take the circle out because they have taken the circle out of that one

George: On this they have taken the circle out and on this they have taken the diamond out and on this they have put them both in, so it should be a blank square because look it goes circle square

Susan: It's got to be a blank square. Yeh it is.

Trisha's initial statement in this extract comes after a long discussion in which different members of the group have tried out different alternatives and all have paused for periods

of several seconds staring at the problem with concentrated expressions. Trisha appears to have understood the nature of the problem but does not express it very clearly. George admits to being baffled and Trisha responds by trying to generate an explanation that he will understand. She does this by using the phrase 'taking the circle out'. This is a physical metaphor for the relationship between parts of the pattern on the page. George grasps this immediately and repeats it for himself. Susan also now appears to understand the pattern. The relationship between the pictures in the reasoning problem is not explicitly present in the picture, it cannot be pointed at by Trisha, it can only be seen by George and Susan once it has been made visible through a shared metaphor. This use of language to 'model' relationships and processes was often found in the talk of children solving reasoning problems. Expressions such as 'the same', 'getting fatter', 'that and that make that' or 'add that to that and you get that'.

The talk of Trisha and George is clearly exploratory talk. It contains explicit reasoning. But it is interesting that, in order to see the problem together, they need to construct a new metaphor. This act of creation links this talk to the talk of transcript extract 2: fantabuloso. In one case a new word is created to complete a newspaper headline and in the other a new phrase is created to understand a problem. In both cases the new construction emerges out of an extended dialogue in which the participants are struggling to create shared understanding and find a solution to a shared problem.

### **Reflection**

In the first example I showed illustrates an almost random playful kind of creative wordplay as an end in itself with no obvious external motivation. In the second example a similar kind of poetic resonance between words is put to use to help complete a written assignment. In the third example resonance between images and ideas helps children articulate and understand their experience of the construction and de-construction of different worlds of experience. The final example illustrates how the creative generation of a new metaphor was essential to a group finding a shared solution to a reasoning test. The argument running through these examples is that verbal creativity is an underlying and essential ingredient of the co-construction of meaning in dialogues and that this includes explicit verbal reasoning.

The creativity we can see in these extracts is not produced by any mechanism. We cannot reduce it to a chain of cause and effects. Derrida argues convincingly that creativity in language does not to be explained (Derrida, 1967), it is the absence of creativity that needs to be explained. This position is supported by the findings of corpus linguistics (Carter, 1999). On the other hand this uncaused creativity appears in a context. This is the context of dialogues between two or more people characterised by intersubjective orientations and shared ground rules. The exploratory orientation that is evident in the last three extracts is found in the context of ground rules that serve to keep people together around a shared focus while also keeping them apart, questioning and evaluating each others utterances. In this way these dialogues serve to open up a space between people in which creativity spontaneously occurs and also to channel that creativity towards a shared end.

According to Bakhtin, understanding another's speech involve producing one's own answering words and these words are inevitably shaped by different histories and backgrounds. Any understanding across the difference between people in a dialogue is therefore necessarily a creative act. However conversations can be more or less creative. Normally language is used to do things in the world without much reflection. If someone says 'pass the salt' they do not expect a reflection on the meaning of 'pass' or 'salt'. In this kind of interaction consensus is assumed and the creative space between people is small. This space can be opened up by turning language back upon itself in the form of questions. Any open question asking 'what?' or 'why?' involves a shift from a cumulative attitude of acceptance to a more exploratory attitude. Reflection means not assuming that we know the answer or that we know what things are but stepping back from certainty to allow things to present themselves in new ways.

While reflection is not the same thing as creativity it seems that the reflective use of language can open up a space between people allowing creativity to occur. However the kind of intersubjectivity that results, the attitude of shared exploration, is not dependent in itself on particular forms of language. Language can be used to promote and maintain relationships but ultimately relationships are not reducible to language. An exploratory silence is different from a disputational silence or a cumulative silence.

The talk in the last three transcript extracts given above, illustrate dialogical reason. This dialogical reason is not simply reducible to explicit verbal reasoning. Dialogical reason is the broader concept of all talk that helps people reach shared understandings. The exact orientations and ground rules that define the best kind of talk or knowledge construction depend on the task and the social context. Where the task is, for example, solving reasoning tests then explicit reasoning is likely to be appropriate. If the task is, to give another example, understanding a different world of experience, then the ground rules should emphasise listening and open reflection more than the critical assessment of reasons. While there are many different types and instances of dialogical reason, all can be characterised as forms of ‘dialogue across difference’ (Burbules, 1993). The difference may be small, as in the difference between two possible solutions to a reasoning test question, or large, as in the difference between two culturally based world views. However, it is this inter-animation of different perspectives that produces a creative space of reflection.

### **Conclusion**

Thinking about reason from a dialogical perspective shifts the focus of attention away from abstract cognitive structures and towards the way that people respond to each other in dialogues. Recent research by the Educational Dialogue Research Unit of the Open University has applied what I argue here is a dialogical model of reason consisting of an intersubjective orientation called ‘exploratory’ and a set of ground rules specifically designed to support collaboration in the classroom. This model has proved an effective support for teachers. Its implementation resulted in a significant improvement in the quality of collaborative learning and reasoning. However, while exploratory talk is a dialogical model of kind of reason, the focus on explicit reasoning makes it a limited model. It is clearly a useful pedagogical device or ‘scaffolding’ but it should not be taken to limit the possibilities of reason. Through the analysis of a transcripts of young children thinking together with a teacher, I have argued that dialogical reason is characterised by the creation of a space of reflection between participants in which resonance between ideas and images can occur. To put this idea more simply: creativity is a more essential characteristic of human reason than explicit reasoning.

The understanding of dialogical reason that I am proposing is broad. It includes all thinking where reflection and creativity are opened up by the inter-animation of different perspectives. The example of ‘exploratory talk’ shows that dialogical models of reason can be a useful tool in education. In principle it should be possible to produce different pedagogical models of this kind for different contexts and different tasks.

The enlightenment project of applying reason to every area of social life has achieved great things but many argue that it has become hijacked by too narrow a conception of reason. If we replace monological models of reason with a model of reason as ‘dialogue across difference’ could we then restore this original enlightenment project? Could we move from a situation where we are using dialogues in classrooms as a tool to help children learn pre-specified nuggets of knowledge, towards a situation where induction into dialogue is itself the main aim of education?

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