THE PRAGMATICS OF LANGUAGE REMEDIATING THE CENTRAL DEFICIT FOR AUTISTIC 2-3 YEAR OLDS

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When we are faced with an autistic child of four or five, and have to think about how to educate him effectively, the contrast between him and the non-autistic child on entry to school is obvious and extreme. However, as we succeed in diagnosing earlier and earlier, the most striking contrast for the clinician with a developmental psychology background is between a child with autism in the second year of life and the normally developing baby of a similar or younger age. It is particularly interesting to look at normal babies *before* they develop speech, and consider their sophistication as communicators before they have the words in which to express their thoughts, emotions and wishes.

The building-blocks of communication, *until* we get to speech, are almost entirely biological and developmental: that is, they are not taught to ordinary babies as skills, but develop naturally, and simply increase in sophistication through practice. Obviously the baby needs the motivation to continue to practise them; but (provided the emerging ability is there), this will, in itself fuel the motivation so long as someone is available to communicate with. A repeated comment of parents whose first child is autistic and second child normal is how much earlier they would have worried about the autistic child - by six or nine months, they often say - if they had known how actively normal babies communicate *before* they have words. They realise that they can have a better conversation- non-verbal 'baby chat' -with their 6 month old normal child than they have ever had with their autistic 3 or 4 year old.

The linguistic tools that ordinary babies use before spoken language is available to them are in fact the 'pragmatics' of language: all of these are the abilities that they will eventually need in order to transform speech into **conversation or dialogue.** What is important is that the pragmatics are not added on to speech after it has developed; they develop long before speech, are increasingly practised throughout the first year, and thus **make ready** for the speech that normally follows. For autistic children the pragmatics are lacking or deeply disordered; and in some ways this is a more serious disorder than the speech deficit because, developmentally speaking, it comes at an earlier and more significant time. Even for the verbal Asperger children, failure of pragmatics ensures that their speech, whose language may eventually be normal or even too perfect when written down, comes across as odd and stilted; intellectually gifted Asperger people may be socially handicapped all their lives by their pragmatic disorder.

TABLE 1

THE MAJOR PRAGMATICS OF LANGUAGE - RECEPTIVE AND EXPRESSIVE

(lacking or distorted in autism: social empathy the foundation)

SOCIAL TIMING (implicit in all pragmatics)

BODY LANGUAGE:

facial expression (including eye contact)	gesture (especially pointing)	posture, stance, personal space

LISTENING SKILLS:

Tum-taking

Noticing signals of impending speech

Knowing who is being addressed (identifying with group)

Maintaining attention to body language

Showing that you're attending

INTONATION: for meaning
for emphasis

VOLUME: for meaning
adaptation to distance (including attentional distance)

UNDERSTANDING INTENTION: teasing (6 months onward)
later: joking, sarcasm, metaphor, irony

SHARED UNDERSTANDING with acknowledgement:
includes SOCIAL IMITATION

SHARING INTENTION - and acknowledging this

SHARING INTEREST: drawing attention to) for parents' interest
bringing to show)

Perhaps it is helpful here to list the major pragmatics, so that we can see how necessary they are to communication. In practice they include almost all the **body language** we use, and this in itself would be a serious loss; but there is another aspect that governs everything else, and so should take precedence: **social timing.** The way in which we time our communications, verbal or non-verbal, **in relation to another person,** is crucial to starting and maintaining a **dialogue flow:** it contributes to the meaning of what we say (consider the use of hesitation in relation to how another person interprets our meaning); it ensures that we do not abandon our listener (as autistic children- and adults- do). It governs the other pragmatics in terms of how they are used *together:* for instance, a pointing gesture will be accompanied by transfer of gaze from the object to eye contact, and will be marked by a sound of some sort: 'Da!' in the pre-verbal baby. It can be seen that social timing has close connections with **social empathy,** which is a term I much prefer to 'theory of mind' because it rightly embraces the **emotional** aspects of thinking, instead of taking us down a too-narrow cognitive route.

Body language can be broadly divided into **facial expression, gesture and posture or stance** (for simplification). Facial expression includes eye contact, and is normally marked by mobility and variety. Autistic children's expressions are rather static and lack variety: we can read whether they are happy, sad or angry, but not much more; and they have the same difficulty with our expressions. As one perceptive Asperger adolescent said, 'People send each other messages with their eyes, and I can't understand those messages'; at least he knew the messages were there, but most autistic children do not.

For all pre-verbal children, **gesture** is crucial, the first and most important being pointing, about which I'll say a little more later on. Waving bye-bye (with eye contact) is less important, but very noticeable if it is lacking: as are nodding, head-shaking and beckoning, whose lack causes still greater problems when the child doesn't respond to these. More serious for an autistic child is that it is usually very difficult for speech to be replaced or augmented by sign language. **Posture** is less important than these, but can cause social difficulties later, especially when the child can't interpret the teacher's posture, or when he doesn't face the person he tries to communicate with.

This brings us to **listening skills,** which include the use of all of the other pragmatics as well as the realisation of the need to attend to them in other people. The child with autism fails to notice that someone is about to speak, and fails to maintain attention to their body language as well as speech. Listening skills include **knowing who is being addressed** -for instance, knowing that he, too, is included when the teacher says 'Now children....'. In practice, lack of listening skills is probably the major practical problem for Asperger children in mainstream school.

Knowing how to get attention is as necessary as knowing how to listen, and part of normal communication is to do with **using intonation** to establish subtle aspects of meaning; in particular, the child needs to adapt **both volume and emphasis** to the attentional state of the other person. Ordinary babies do this non-verbally before they have speech. Clearly the other person may be 'distanced' by being in the next room or just watching the television, and the non-autistic baby soon has enough empathy to adapt her voice to overcome these obstacles.

For very young children, **understanding intention** is the forerunner of listening skills; failure to do this is linked with both lack of social empathy and lack of social timing. Ordinary 6-month-old babies are very well able to enjoy and respond to the teasing element

of anticipation games (such as 'I'm....coming....to....GET you!'), and by a year they are teasing their parents themselves very consciously; autistic children have to be taught this, and with difficulty, except for the simplest of games such as 'peep-bo' and tickling. Use of eye contact is especially strong when children tease their parents, which certainly doesn't help the autistic child. Ordinary two-year-olds are good at judging their parents' mood: is mummy serious, or can I make it into a joke? Children with autism, even those who are bright, fail lamentably at this social ability. In older and verbal children with autism, their inflexibility adds to the difficulty by making joking, sarcasm and metaphor difficult for them either to understand or to use. It is an interesting point that where the most able and verbal Asperger children have difficulty with semantics, this is almost entirely because they fail to understand **personal** meaning - not what the *words* mean, but what the *person using them* means in this context.

Closely related are **shared understanding and sharing either intention or interest.** The ordinary baby assumes and wants shared interest from others; for instance, the development of walking immediately leads to **bringing things to show people for their interest,** just as pointing is used for drawing parents' attention to interesting things. Autistic babies bring things for functional reasons - a cup to be filled, a book to be gone through - but not purely because it's fun to share an interest or to have a pre-verbal chat about things.

At this point we can remind ourselves of the communicative sophistication of ordinary pre- verbal children by considering a 2-minute home video clip of a normal 11 month old child, Rachel, which vividly illustrates how almost all of these pragmatics are present in the ordinary baby at the end of the first year. This clip is part of a 20-minute episode in which Rachel, having finished her Sunday breakfast, is playing with her grandmother at the table where the rest of the family are still eating. She's pleased with herself because she's just learned to place a set of four pegs in four holes, so the toy is the shared focus for both of them. Rachel is pre-verbal, but she squeals, smiles and laughs, each time with eye contact; she gazes at an uninvolved speaker and juggles with the kinds of attention she gives to other people, especially her four year old brother and including the unresponsive camera-man, so this is much more than the usual 'experimental triad' of child, adult and object. She imitates a gasp socially, with a smile and eye contact, reaches with spread fingers and finally points with stretched forefinger -just as she is supposed to at 11 months.

Rachel sits at right angles to her grandmother, with her brother further down on the other side. She has a truck with 1 peg already standing in its hole; they can only be fitted one way up. She fiddles with the pegs, trying them against the holes; squeals and smiles at her brother, and moves pegs around. She squeals and makes strong eye contact with her grandmother, and smiles at her under her eyelashes, looks at another (speaking) adult briefly, then fingers and fits a second peg. Looks at once to her grandmother, who gasps and says 'Oh! You did it!' and Rachel grins till her eyes are almost shut, laughs, and gasps in imitation. She partly fits a third peg and steals a glance at her brother, looks back at the pegs, smiles, turns to her grandmother, repositions the peg and turns to her again. Her grandmother says 'That's right- now you know which way up to put them'. She fits the peg properly, her grandmother gasps and Rachel turns to her and chuckles.

Her grandmother says 'What about this one?' and Rachel looks at a distant peg. Her fingers are now spread but not reaching; she looks at her brother, and turns to her grandmother as she says 'do you want this one?' She reaches her hand, fingers spread, saying 'uh'. She grasps a peg from the truck with forefinger extended, and 'points' with

the peg, saying 'uh' with more force; her grandmother imitates the noise and her brother laughs and imitates too. Her grandmother says 'do you want this one?' and Rachel reaches out her arm and makes a very clear distance-point with her forefinger. Grandmother says 'Oh! Yes! You shall have it!' and gives it to her; there is eye contact, then Rachel fits the last peg, squeals, and looks at her grandmother with a big smile and eye contact, which she holds. Her grandmother claps her: 'Well done!'. Rachel looks over to her brother, makes eye contact and claps herself, smiling, as he claps her in return.

Can we teach the pragmatics of language to children with autism?

Because for many years we were carrying out research on the normal development of communication in babies, while in parallel being closely involved with a specialist school for children with autism, the contrast between the growth of pragmatics in ordinary children and in children with autism has been consciously at the forefront of our minds in our efforts to develop communicative competence in our school. If ordinary babies have been practising the pragmatics for a year, before their speech begins to appear, should not *this* be the priority for autistic children, too?

It does in fact seem common sense that, when we start with a well-researched list of diagnostic criteria, **which in fact amounts to a list of inbuilt deficits,** we will be most effective if we address those deficits very directly in the work we do. There is currently a kind of fashion, which is partly reflected in some of the papers in this book, for playing down the deficits of autism. However, I believe we have to face up to a different view, given deficits that are as crucial, damaging and central as a lack of linguistic pragmatics; because if we make no attempt to remediate this loss, and as early as possible, we betray the child and fail abysmally in our responsibility towards him.

When a child enters Sutherland House school, then - usually at about four or five - we concentrate on those pragmatics that we consider most crucial: social timing, the tum-taking which is dependent on this, shared understanding and intention, and pointing. We can address all except the last through **musical interaction therapy,** which is a specialist 2:1 therapy involving the child, the child's keyworker and the musician/therapist. We have written a great deal on this way of working (eg Christie et al1992; Lewis et al1996; Prevezer 1998), and there is no space to discuss it here: except to point out that the fact that the child's keyworker is involved means that the **principles** of the work are carried back into the classroom and inform every other part of the child's curriculum. However, I would like to spend a little time on the teaching of pointing, which we regard as a priority.

The point of pointing

What is so special about pointing? We can sum it up in three words: it is *intentional, intersubjective* and *symbolic.* The child, as she points, is wholly aware of what she is doing, and knows herself to be deliberately attracting the attention of another person to what will be a shared object of focus and, as such, a focus for their intersubjectivity. The distance point, in particular, is symbolic because it creates an imaginary line between the finger and the object; this imaginary line *is* the 'point of pointing'.

At whatever age our children come into school, we find they are still unable to point unless they have been expertly taught. As we've seen in ordinary babies, the active point arrives at 11 months, at the same age as the pincer grip (which also involves the separation of the forefinger, a biological 'making-ready' development, but is non-social). Children with autism develop the pincer grip but not the point.

In ordinary babies, once the point has arrived, the child's self-conscious communication undergoes an explosion, and the point itself becomes the tool for the 'What dat?' game, which rapidly increases vocabulary. Ignoring for a moment the dichotomy that has been made between the imperative (requesting: I want that) and the declarative (look at that), which we find irrelevant in actual practice (Charman 1998), pointing offers any child many different possibilities. At an early stage, before the arrival of distance pointing, it helps the child to focus on single items within an array: touch-pointing at single pictured objects, for instance, aids concentration on detail, just as a child may later run his finger along a line of writing. Distance-pointing may serve the same purpose of **focus,** reminding the child what he is referring to, even before he extends this to share his focus with another person. The imperative point may have different stages of meaning: 'I want....so give me....now!....no, not that one, *that* one'. The declarative, too, has different degrees of **empathy:** 'That's interesting (don't you think?) Can't you see it?....look....no, move your head a bit. ...*That's* the one I mean (not the one you may be thinking)'. Although distance-pointing usually indicates a notional symbolic connecting line, this is not always so; it may be used to emphasise a word or to suggest another symbolic meaning which is imagined. For instance, we have a video-clip in which the non-autistic Sebastian, aged just two, does both these things together when he 'jumps' a toy monkey, looks at his grandmother and says 'up in the air!', pointing up into a notional sky with his free hand.

Perhaps more important than any of this, the point is an exceptionally *arresting* gesture, whether one is pointing oneself or watching someone pointing. As such, it emphasises **intentionality** in no uncertain terms. Watching a toddler pointing, one is struck by the emphatic tautness of the tendons as the forefinger stretches up and the other fingers stretch down in opposition. This is the most uncompromising and unmistakable gesture that the one-year-old has ever made, and it is difficult to ignore or resist, even if one wanted to. For the child herself, it asserts, 'Hey, I'm talking to you....and I mean it!' Thus it is likely to give a powerful message, both to the adult *and to the child herself.* Surely this must be the trigger for the explosion of purposeful communication as soon as pointing is established, and the child clearly becomes conscious of her power (Newson and Christie, 1998).

The question is, can we manufacture a similar, even if mini-explosion in purposeful communication if we teach autistic children pointing as a learned skill? We know that we can, *so long as we teach with intense care for meaning,* rather than creating just another learned stereotypy. By making the pragmatics a priority, we find ourselves able to produce 'useful speech' in 65% of our 6-11 year olds, rather than the usually quoted 50% (if we define useful speech as having *at least* a variety of spontaneous 2-word sentences).

The next question, of course, is whether we can reduce the age at which we can teach the pragmatics. It is not our choice that children enter school at 4-5; 2-3 would seem a much better time for the communicative deficits of autism to begin to be remediated. At the very least, if we could make these children a little more open to communication at two, even if still pre-verbal, we might avoid the terrible year at three which so many autistic children go through as they withdraw further still into distressed inflexibility. The destructive effect of

just doing nothing is one that we are both clinically and educationally aware of, and one which parents themselves fear.

Early diagnosis, early intervention

Our current research explores the close integration of diagnosis at two followed by immediate intervention, and is aimed to provide a package to make this viable. It adapts the work we have done in a school setting to the more naturalistic setting of the home, translating the musical interaction therapy method of school into a play-based programme that can be easily learned by parents who have no musical or other training. Similarly, we have picked apart our curriculum, teaching parents to teach their children the most urgent and necessary pragmatics, including quite complex and difficult processes such as teaching meaningful pointing. Our basic principles of working are the same as we use in the school: intervention is **adaptive,** and is based on teaching interaction, negotiation, and communication tools. It is *not* based on forced imitation, coercion or control. Workshops on behavioural methods, **but within a negotiative framework,** are included.

The most important feature of our early intervention programme is to ensure that parents' full understanding of the diagnosis and its implications for the child becomes the basis for knowing *why* they need to work with their child in the various ways suggested, and what are the principles for doing so. Information on both *why* and *how*, in a number of different areas, is given through very practical **'how to do it booklets',** which are clearly based in what the diagnostic criteria have made them aware of, and therefore give them a highly informed sense of what is needed. During the diagnosis, a pragmatics profile has been drawn up for their child as part of his diagnostic report, so that parents can see precisely how the individualised prograrnne fits with the difficulties we are trying to remediate. Examples of the booklet titles are: **Interactive play; Teaching pointing; The beginnings of structure; Understanding language;** and so on.

The 'how to do it' books are backed up by weekly home visits by the developmental psychologist and occasional consultation visits to the clinic to meet our musical interaction therapist; while the psychologist is herself backed up by fortnightly meetings with three specialist consultants. After the first six months, a parent workshop series is run over eight meetings, so that parents can meet each other and learn together how to deal with specific difficulties that concern them.

We have been working with 10 children over a period of 2 ½ years, staggered so that each family has 18 months of intervention.· The children ranged from 20 months to 2:9 on starting. The programme is evaluated in a number of ways, including independent interviews, repeated pragmatics profiles and comparison groups.

Four short videotapes are described below as 'work in progress' to illustrate the interactive play sessions with which we try to remediate the pragmatics (as a home-based alternative to musical interaction therapy). With permission, the children's names are used as they figure on the tapes. In all these illustrations, it is noticeable how enjoyable these sessions are for the children: and this is true of everything we do or ask parents to do with them, including more formal tabletop sessions and teaching pointing. In this way the pleasurable heart of parenting can be kept intact, despite the much greater demands on them. It is also easy to see the principle of **negotiation** in action.

Video 1: Jayden aged 2:5

Jayden is seen 7 months into the intervention; Susie Chandler, research psychologist, works with him on this occasion while his very yoimg mother watches as she doesn't like being on camera. Jayden had many stereotypies at 1:10, including meaningless pointing which he had to unlearn: he then learned real pointing within two months, and immediately followed with meaningful words, though some of the content of his speech was obsessive at first.

Jayden spontaneously jumps on the spot three times; Susie says 'jump, jump' and jumps herself; Jayden joins her jumping around, and Susie sings: 'We're jumping round the room, we're jumping round the room, Jayden is jumping, jumping round the room'. Jayden's jumps are in time with hers. They stop, and Susie starts a new verse: 'We're.....*walking* round the room....', and continues as Jayden very deliberately starts walking around with her; as the verse ends, he crashes onto a beanbag, and Susie says 'Crash!'. Jayden does it again, this time saying 'Cra-ash!' with feeling. Together they re-enact the 'Crash!' twice, then get up. Susie says 'We're.....crawling!' Jayden drops to his knees and crawls with Susie as she sings this new verse. At the end of the verse, Susie sings 'We're**....**' and Jayden goes on crawling, and looks expectantly at Susie, who starts a second 'crawling' verse in response; this time, Jayden completes his crawl with a 'Crash!', and Susie follows suit. They re-enact the crash! very dramatically, Jayden with raised arms crashing down to the floor and giggling as he says 'Crash!'

Video 2: Ollie aged 2:10

Ollie is here 3 months into intervention; he is severely autistic with learning difficulties, and is especially resistant. His father has retired to be his main carer. Ollie took the whole 18 months to learn to point, and suddenly became an active non-verbal communicator.

Father kneels on the floor, Ollie reclines against him with bare feet stretched out towards Susie who kneels opposite. He looks at her briefly and she says 'Are you ready for a blow?', takes a deep breath, says 'Blow!' and blows on his foot. He smiles, she says 'Again? Ready....for....(he wriggles expectantly; pushes foot forward, looks at her)....a....blow!'**.** He gives eye contact. Susie: 'On your foot? Ready....(he gives stronger eye contact, settles back against his father, pulls foot back, looks expectant and smiles)....for....a....blow!' Susie blows, he laughs, says 'aaahh!' with a rising inflection, clutches both feet, gives very strong eye contact. Susie: *'That's* a lovely look!' Olly says 'Dah' with a confirming inflection. Susie says: 'Ready....for....a.....b,b,b..(no response) blow' (quietly). Ollie gets up, turns away, but then comes back and, standing, offers his other foot to Susie. Susie: 'This foot?' and blows it. Ollie jumps excitedly away.

Video 3; Edward aged 2:4

Edward is seen 2 months into intervention; his mother is working with him in her bedroom on the double bed. This is because he is obsessed with videos; and in the living-room he screams constantly to have a video put on. The bedroom was used until Edward was

interested in interactional play for itself, when he began to be able to accept the living room without videos.

Edward, wearing just a nappy, stands by the bed looking at a picture on the far wall, his back to his mother, who kneels at the other side of the bed with a small collection of plastic animals in front of her. She says 'Where's Edward? Edward....(he ignores)....Edward!' He turns, smiles, climbs on the bed and crawls towards her. Mother: 'What shall we do? (sings) Old MacDonald had a farm, ee i ee i oh. (Edward looks at the animals) And on that farm he had a....?' Edward selects a crocodile and gives it to her. Mother: 'Crocodile! With a snap-snap-snap here and a snap-snap-snap there' (poking the crocodile at Edward's bare tummy). She continues with the next verse; Edward gives her a horse and jumps around on the bed. She sings 'On that farm he had a horsie....with a neigh-neigh here (tickling him with the horse); he giggles and dances. She continues with the next verse, he falls over but comes and gets the horse again; she accepts it and continues singing and tickling. Edward dances, mainly oriented towards her, sits down, watches, listens, and chooses the crocodile again on cue. He sits in front of her, watching. He rolls around on the bed, looks at the ceiling, but as she approaches his cue again he turns back, grabs the horse in time, and makes four emphatic touch points on the horse with his other forefinger before giving it to her.

Video 4: Aaron Ornown as Snuggie), aged 2:11

Aaron is 3 months into the intervention; his mother and Susie both work with him during this session. He has learned to point, and is doing so spontaneously and determinedly, standing under a shelf of toys while they try to see what he is pointing at.

Mother: 'Would you like your tube? Where's the tube? Pointing- *there's* Snuggie's tube! (a coloured polythene tube, flexible and three feet long). *I'm* going to blow Snuggie's....hair!' She blows through the tube and Snuggie giggles a lot and reaches for the tube. His mother says 'I'm going to blow on Snuggie's....(he puts out his hand)....hand!' He runs to the settee, climbs on it and turns to face her; his feet are bare. Mother: 'I'm going to blow on Snuggie's....foot!' He giggles and squeals, grabs the tube and pulls it towards Susie, who says 'Are we swapping?' She plays the same game, this time singing 'Blow on Snuggie's hair; blow on Snuggie's feet', as he sits on the settee squealing and giggling, and giving her eye contact. Susie 'toots' through the tube; he grabs the end of the tube and makes it go up and down as she adjusts her tooting to his movement; the sound goes up and down in pitch as his movement goes up and down.

Snuggie makes eye contact with Susie, and he simultaneously shakes a rattly toy in his other hand and vocalises; their play is very reciprocal. He is now adjusting his movement to her sound while vocalising in a sing-song way. He then toots himself with similar intonation to hers, while moving the tube up and down.in time with the sound, showing quite complex social timing.

Finally:

Perhaps I can sum up what we are trying to do here. We want to make it possible for children with autism to experience for themselves what other children experience naturally at an

earlier age still; but they cannot do this unless we make it happen for them in very deliberate ways, intensifying and repeating the experiences until the child begins to reap the social and communicative rewards, and to be aware that these *are* rewarding. We did not know at the outset whether we could be successful with 2-3 year olds; however, all of our first batch of six have become more communicative, some have meaningful sounds and even words or sentences, all have learned to point meaningfully (even the one whose forefinger had not yet separated when we started), and none of them has entered the distressing 3-year-old withdrawal stage: that alone would have justified the intervention.

I'd like to end with some quotations from the independent evaluation interviews, so as to give parents the final voice.

He couldn't speak or really communicate at all before, and he can speak now and point and use other gestures. Sometimes he talks too much! He can ask for things he wants; before he had lots of tantrums because I didn't know what he wanted ....He plays with me now. Before, he would just run around or sit lining up pegs and bottles. He plays with his trains with me now instead ofjust lining them up all the time.

Everything is explained verbally as well as in the written booklets. Pointing has been particularly helpfUl as you can find your place on the sheet ....as to where your child is. It's the same with going through the checklist.

What's the best thing? That it's positive ....and the action you can take. You know why *you're doing something ....it helps you re-learn natural skills of the mother and teacher role which can be used. Everything about timing ....the anticipation games ....realising the need for 1 to 1.*

I now have a communicative child!

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The 'How to do it' booklets mentioned are available from the Elizabeth Newson Centre, Sutherland House School, Bath Street, Sneinton, Nottingham, NG1 1DA, and are written by Phil Christie, Elizabeth Newson and Wendy Prevezer, who are consultants to this project on which Susie Chandler is research psychologist. The project is funded by a charitable Trust which prefers to remain anonymous, but to which we are extremely grateful.