GAP

CELEBRATING THE FIRST 10 YEARS OF THE JOURNAL

Edited by Glenys Jones

Published in partnership with The University of Birmingham autism.west midlands and Autism Cymru
Introduction
Previous research has demonstrated that the way in which adults interact with children with autism can have a great impact on their communication (Nind, 1999; Potter and Whittaker, 2001; Prizant et al, 2006). Although most of the widely used approaches to develop social communication in autism provide some direct or indirect advice on adult interactive style, to date only a few studies have explored its effect on the communication of children with autism (Aldred et al, 2004; Chandler et al, 2002; Chariop-Christy et al, 2002; Ingersoll, 2011; Ingersoll and Schreibman, 2006; Jones et al, 2006; Kasari et al, 2006; Sussman, 1999; Yoder and Stone, 2006). Even fewer are the studies which explore the impact of adult interactive style on the spontaneous communication of children with autism, which is one of their core difficulties (Jordan, 1999; Prizant et al, 2006).

The aim of this paper is to review some of the most well-known approaches for developing social communication in children with autism focusing on advice these offer to parents and practitioners in terms of their interactive style.

Methodology
A literature search was conducted using the British Education Index, Education Research Abstracts (ERA), Education Resources Information Center (ERIC) and Google scholar. The search terms used for the initial search were ‘autism/autism spectrum disorders/ASD/autism spectrum conditions/ASC’, ‘intervention(s)/approach(es)/program(es)’, ‘communication’ and ‘facilitative/interactive style’.

Peer-reviewed papers, conference proceedings and books were considered. There was no restriction as to their publication date to avoid excluding old, but informative materials. The references for the sources found were searched for additional material. The author also attended a number of workshops on interventions to develop social communication in autism, which took place from June 2007 to March 2011 in the UK. She also
consulted with school staff and academics as to which interventions are widely used to teach children with autism in the UK. For approaches which have an official website, the websites were also checked for information on adult interactive style.

Findings

The findings are grouped under two broad categories following Ingersoll and Dvortcsak’s (2006) example. These are behavioural/naturalistic and developmental/relationship-based approaches. Behavioural/naturalistic approaches are based on the assumption that new skills should be taught in an environment where the antecedent stimuli are clear and systematic reinforcement follows a correct response (Cooper et al, 2007). Teaching usually takes place in highly structured environments where the target communication skill is broken down into smaller steps such as, ‘greet’ in response to the arrival of an adult (Charlop and Trasowech, 1991) or say ‘thank you’ when being given a desired object (Matson et al, 1993). Developmental/relationship-based approaches are based on the assumption that children with autism follow the developmental trajectories of their typical peers and suggest going back to practise the milestones they missed (Greenspan and Wieder, 1998). Learning is achieved through strong affect-laden relationships between the child and the adults, while adults follow the child’s lead, respond to all their communicative attempts, even the unconventional and pre-intentional ones, adjust their language and social demands to the child’s developmental level and set up the environment to evoke initiations (Ingersoll, 2010; Ingersoll et al, 2005).

The approaches which provide the most data on adult interactive style are presented in alphabetical order for each broad category. Given the wide range of autism research taking place worldwide and the limited scope of a journal paper, the list of the interventions presented here is not exhaustive.

3.1 Behavioural/naturalistic approaches

3.1.1 Early Intensive Behavior Intervention (Cooper et al, 2007; Lovaas, 1981)

Early Intensive Behavior Intervention (EIBI) is based on the principles of Applied Behavior Analysis (ABA) and uses Discrete Trial Teaching (DTT). DTT is a very structured programme in which the therapists present a stimulus to the child and react straight away according to their response (Lovaas, 1981). If the response is correct, the therapist praises and rewards the child, whereas if the response is incorrect, the therapist immediately prompts the child to respond appropriately. DTT is less likely to develop spontaneous communication as the child gets frequent and intensive instruction and direct feedback for responding to the adults. However, some of the advice given in EIBI with regards to the adult interactive style might be used when facilitating spontaneous communication. For example, adults should be brief and specific, use a clear voice when giving the stimulus, which should have a distinctive onset and offset (Richman, 2001). Adults are also advised to get the child’s attention before presenting the stimulus (Richman, 2001).

Adults are encouraged to use a variety of prompts. These prompts can either be verbal or physical. Physical prompts might seem more intrusive, but they are highly recommended, being easier than verbal prompts to fade (Richman, 2001). Physical prompts can range from full hand-over-hand prompt to show the child how to perform an action or a slight tap on the shoulder to remind them to take action. The adults should gradually reduce the amount of physical prompt they provide. For example, they may start with hand-over-hand help and gradually relax their grip, guide the child by the wrist, tap them on the shoulder or point to the activity they are supposed to be doing.

Adults also use reinforcement. This can take two forms: positive and negative. Positive reinforcement is the addition of a desired stimulus (eg, biscuits, ‘Nice job’, toy car, tickles) to the environment, whilst negative reinforcement is the removal of an unpleasant stimulus (eg, an activity the child dislikes) from the environment (Cooper et al, 2007). Reinforcement should be used differentially as then it becomes more powerful (Cooper et al, 2007). This means that adults should save the most meaningful reinforcers for the most difficult tasks. For example, they should provide more reinforcement the less prompted the child’s communicative attempt is. Special importance is placed on the adult’s tone of voice when reinforcing, which should be done with an upbeat voice (Richman, 2001).

3.1.2 Picture Exchange Communication System (Bondy and Frost, 2002)

Picture Exchange Communication System (PECS) is a picture-based programme to teach children with communication difficulties to initiate communication in
a social exchange (Frost and Bondy, 2002). It prompts children to exchange a picture of a desired object for that object or activity. A crucial point of PECS is that it aims at spontaneous communication as there is no verbal pre-empting such as ‘What do you want?’ or ‘Give me the picture’. The adults have to wait for the child to initiate communication by handing over the object/picture/symbol. Its significance lies in the fact that unlike other Augmentative and Alternative Communication (AAC) systems (eg, pointing or signing which can be seen in the absence of a communicative partner) the child has to physically interact with a partner by giving them something. In the initial PECS sessions, two adults are needed. Adult 1 (the communicative partner) holds out an empty hand in front of the object while Adult 2 (the physical prompter) physically guides the child to hand the picture to Adult 1. Once this is mastered, prompts are gradually eliminated and more distance between Adult 1 and the child is created (Bondy and Frost, 2002). Adults also switch roles between being the prompter and the partner so that the child learns to communicate with more than one person.

Bondy and Frost (2002) suggest a number of communication enhancement strategies to develop the child’s spontaneity. Adults are encouraged to place favourite items within view but out of reach, offer small portions of food and drink, consume a favourite food or drink in front of the child and create the need for assistance (eg, wind-up toys, firmly closed containers). They are also asked to interrupt a favourite cooperative activity, offer the child something they do not like, hold out two favourite items and say nothing and violate the child’s expectations. When these strategies are put in place, adults are reminded to pause and wait to increase the likelihood of spontaneous communication. Communicative partners are advised to wait for at least five seconds with an expectant look, raised shoulders and eyebrows and if, despite that, the child does not respond, they are advised to use subtle prompts. These could include pointing to the picture or object, saying the initial sound of the word or having a second person model the response.

**3.1.3 Treatment and Education of Autistic and related Communication handicapped Children (TEACCH) (Lord and Schopler, 1994)**

TEACCH is a structured teaching approach which works on many areas including communication. Communication is seen as an exchange which typical people have a responsibility to make work and Lord and Schopler (1994) give advice on facilitative adult style. Visual structure and motivation (eg, snacks, favourite activities) are crucial when teaching children with autism to communicate (Lord and Schopler, 1994). Adults need to be predictable and to give information top to bottom or left to right. Depending on the child’s abilities, a number of visual cues can be used such as written words, photos or symbols with written words, photo or symbol cards and objects of reference. Adults should clarify beginnings and ends of activities. Social reinforcement such as a smile, a hug, a pat on the back or even a sticker should be used with caution as they might be meaningless for children with autism (Mesibov, 2007). Moreover, adults need to give multiple communicative opportunities across settings (eg, school, home, community) (Lord and Schopler, 1994) and they should not give children objects they want unless they ask for them (Mesibov, 2007).

Adults are encouraged to get the child’s attention before communicating and to use real choices. The child’s attention should be gradually sustained for longer periods of time. Adults can use colours and highlighting in the visual cues to engage the child’s attention. Mesibov (2007) draws attention to the fact that adults have to give the child the chance to choose from objects and activities they really like and these choices should be supported by visual cues. Spoken language should be kept to a minimum.

**3.2 Developmental, relationship-based approaches**

**3.2.1 Developmental, Individual Difference, Relationship-based (DIR) model – Floortime (Greenspan and Wieder, 1998, 1999)**

The DIR model – Floortime is an intervention which takes young children with autism to the very first milestones they missed and starts the developmental process from the beginning (Greenspan and Wieder, 1998, 1999). The primary goal is to help children form a sense of themselves as intentional and interactive individuals through building a link between emotions, behaviour and eventually words (Greenspan and Wieder, 1998, 1999). Establishing secure relationships is the cornerstone to promote development of the functional milestones. Adults should base their interactions on the child’s interests, imitate them and respond to their initiations (Schertz and Odom, 2004). They are encouraged to hold the child’s...
attention through their senses (eg, vocal gestures, touch, motor experiences) (Greenspan and Wieder, 1998). Great attention is also given to children's individual sensory differences (Schertz and Odom, 2004).

Based on the DIR model – Floortime, Sonders (2003) formed her own approach of developing communication skills, which she named Giggle Time. Here adults assign meaning to the child's ordinary actions by turning them into a turn-taking interaction. Adults are advised to use one of the pragmatic, pre-language skills (eg, eye contact, gesture, proximity, vocalisations) to start the Giggle Time. The adult's turn should be a similar length of time as the child's to keep their interest. Given the children's affinity for predictability, adults are advised to repeat their turns exactly the same way each time. Once a routine is established, the adults' turns can be modified. Animated facial expressions, body movements and voice volume should be used. Exaggeration is necessary when interacting with the children as the adults should be more interesting than the child's object of desire. Adults are advised to create problems for the child to solve which may offer opportunities for communication (Greenspan and Wieder, 1998). For example, they can read a book upside down or put the socks on the child's hands while getting dressed. Adults should follow the child's lead and imitate them. They are also advised to wait for initiations (eg, 10–15 seconds to show the child it is their turn to do something), use rhymes and combine them with movement to engage the child. Sonders (2003) highlights the importance of incorporating vestibular movement into the joint action routines stating that the lower the staying power of the child, the more vestibular movement is needed. The ideal distance between the adult and the child is within 60 cm apart. When adults want to show the child it is their turn, they should adopt a freezing expression and posture (eg, mouth, eyes and limbs in an exaggerated open position). It is argued that a child's favourite action song in which the adults drop the end word or phrase can work effectively for most children with autism. Adults can do the action and wait for the word and if the child does not respond they can prompt by whispering the word.

3.2.2 Hanen or ‘More than words’ approach (Manolson, 1992)
The Hanen or ‘More than words’ approach trains parents to develop a facilitative interactive style with their children (Pennington and Thomson, 2007). Its main goal is to teach the child communication skills and increase their vocabulary. Parents are encouraged to take time to Observe, Wait and Listen (the OWL technique) (Manolson, 1992). Additionally, the child is allowed to lead while parents 'share the moment' and add language and experience (Manolson, 1992). Special attention is drawn to teaching parents how to recognise their child's attempts to communicate, use simple language and engineer situations for them to communicate (Pennington and Thomson, 2007). Imitation, interpretation of the child's behaviour and child-perspective language are very important (Manolson, 1992). Parents should acknowledge all the child's attempts to communicate. They should respond to the child's messages even if they are likely to get it wrong, as their response lets the child know that they have been heard. Parents are advised to use language which is appropriate for the child's level and to speak as the child would if they could. Manolson (1992) highlights the importance of waiting while acknowledging how difficult this can be as often a silent moment might be felt as an empty moment. Use of fun words to attract attention such as ‘wheeee’, musicality of speech, fun, physical contact, praise, smiles, laughter and expansions are some other core strategies taught to parents (Sussman, 1999).

3.2.3 Intensive interaction (Caldwell, 2008; Nind and Hewett, 1994, 2001)
Intensive Interaction is an approach for enabling social communication based on the model of caregiver–infant interaction and can be used with individuals of all ages (Nind and Powell, 2000). It builds upon the basics of communication (eg, taking turns, sharing personal space) claiming that when adults change their interpersonal behaviours (eg, facial expressions, body language, vocal behaviour) to become more interesting and meaningful, children are likely to increase their social communication (Nind, 1999). It is a ‘process oriented approach’ with the interaction itself being the ultimate goal (Nind and Powell, 2000). Adults are expected to be observant, tuned in and responsive while allowing pauses and letting the child lead (Nind and Hewett, 2001).

Nind and Hewett (2001) advise adults to position themselves below the child's eye level before communicating. Great emphasis is placed on physical contact when interacting with people with limited understanding as touch is considered a fundamental form of communication especially for non-verbal people.
Adult interactive style and autism: reviewing the literature to inform school practice

(Nind and Hewett, 1994). Adult availability is another important principle. Nind and Hewett (1994) advise that the adults’ body should be slightly turned towards the child, with shoulders and legs relaxed, head slightly leant to one side or back and eyes wide but with a mild and questioning face. Pausing and waiting are of particular value as children with communication difficulties may process information at a slower pace (Nind and Powell, 2000). Adults should celebrate and acknowledge all the child’s attempts to communicate, including speech (Nind and Hewett, 2001). Imitation is also important (Caldwell, 2006). The need for adults to slow down and use some variation in the pitch of their speech is highlighted (Nind and Hewett, 2001).

3.2.4 Musical interaction (MI) (Methley and Wimpory, 2010)
Musical interaction focuses on the need to ‘tune in’ to the child and start working with what they are able to do. The adult should follow the child’s lead by imitating their sounds and movements, use running commentary songs, flexible action songs and short repetitive routines which build anticipation (Christie et al, 2009). Adults are also asked to treat the child as if they are communicating long before they really are (Methley and Wimpory, 2010). For instance, if the child runs away, the adults treat this as if they meant to communicate, by starting a running game or song. Likewise, the child learns that they can direct the action in the sessions. In addition, adults are advised to copy the child’s sounds as well as their physical actions to give them the idea of exchange and turn-taking. Spontaneous songs about what the child is doing are encouraged as it is argued that some children are more likely to take notice of the adult if the adult sings a response rather than just saying it.

3.2.5 Option or Son-Rise approach (Kaufman, 1994; Kaufman 2002)
The Option or Son-Rise approach (Kaufman, 1994; Kaufman 2002) is a child-centred approach developed by the parents of a child with autism. The rationale behind it is that instead of trying to force a child to conform to a world that they do not understand or that does not make sense to them, adults try to ‘go with them’. Once a mutual connection is established, the child learns with greater success, speed and ease. An effective way of developing a relationship with the child is via the three E’s, which are energy, excitement and enthusiasm (Autism Treatment Center of America, 2008). Kaufman (1994) notes: ‘We had to make ourselves into the most beguiling […] clowns of the universe so we would excite him and entice him to walk through seemingly impenetrable walls’. (p 63)

Adults should honour vigorously every child’s attempt to communicate and acknowledge even the ineffective efforts (eg, by saying ‘nice try’ or ‘that was so close’).

The adult should be the number one attraction and join in the child’s repetitive behaviours (called ‘isms’) (Kaufman, 1994). Adults should see the child’s repetitive behaviour as a doorway to create a relationship with them. The Kaufmans started imitating their son ‘turning his ‘isms’ into an acceptable, joyful and communal event’ (p 49). For example, when Raun, the Kaufmans’ son, spun plates, rocked or flicked his fingers, whoever was in the house would do the same besides him. It was their way of being with him. Imitating Raun proved effective. He would watch his parents when they were involved in his rituals. Following his lead was another principle they tried with him. When Raun rocked back and forth while humming, his parents rocked besides him and sang in harmony with his hum.

Kaufman (1994) gives some practical advice on how to increase the effectiveness of the proposed techniques. The first thing adults should do is to observe what the child is doing. Then they should place themselves one metre away and do what the child does for at least 15 minutes. Some children will respond from the first moment, others might need longer. It is important that adults position themselves so it is easy to get eye contact from the child. Being in front of them either at eye level or slightly below is the ideal position. Achievements should be celebrated in animated ways such as big, whispered or sung cheers, arms thrown in the air, jumps up and down, a little dance. A lot of physical contact such as hugging, stroking, tickling, tumbling and throwing into the air is recommended but adults should always allow children the freedom to back off when they need to. Finally, adults are advised to offer choices and to encourage the child to initiate.

3.2.6 Relationship Development Intervention (RDI) (Gutstein, Burgess, Montfort, 2007; Gutstein and Sheely, 2002)
Relationship development intervention (RDI) is a parent-training model which claims that by focusing on improving child-caregiver interpersonal relatedness,
children with autism become more engaged in reciprocal communication (Gutstein, Burgess and Montfort, 2007). It is based on the rationale that ‘relationships are self-motivating, ends in themselves’ (Gutstein and Sheely, 2002, p 23). Parents are asked to video record themselves while working with the child and then use this footage in the weekly or bi-weekly consultation meetings with the RDI consultant (Gutstein, Burgess, Montfort, 2007).

RDI encourages parents to slow down, provide time for processing and reflection, use ‘self-talk’ to articulate their thinking processes and language for ‘statements or observations instead of command or demand’ (Thompson, 2013, p 15). Parents are also advised to be predictable and add small bits of novelty in a very creative and positive way (eg, repeat child’s language in a silly voice, very slowly or very rapidly). RDI activities should be genuinely fun and exciting for both children and parents. Exaggerated and dramatic face, gestures and voice tone are advisable. The use of celebratory language (eg, ‘good work’, ‘yeah’, ‘wow’) when the child is doing well is also highly recommended. Parents should limit verbal communication, slow their rate of speech and introduce more pauses between words. Their communication should be ‘in balance’ with that of the child and they should not use more words in any utterance than the child uses. In ritualised song segments, parents are asked to purposefully fail to repeat an often repeated phrase and observe whether the child completes it. Short breaks should be taken every ten minutes to see whether the child will spontaneously ask to play more. Parents should gradually reduce the need to cue or prompt the child to get their attention.

### 3.2.7 Social Communication Emotional Regulation Transactional Support (SCERTS) (Prizant et al, 2006)

The SCERTS framework aims to support the child to become a competent, emotionally regulated communicator and has a focus on developing strategies for the adults as well as for the child (Prizant et al, 2006). Adults should be responsive and foster initiations. Responsiveness can be achieved in a number of ways such as following the child’s focus of attention, attuning to their emotion and pace, responding appropriately to their signals and recognising signs of dysregulation and offering support. Adults can also be responsive by imitating the child, pausing in anticipation of a response from them and offering breaks when needed. To promote initiations, adults are advised to offer choices, wait for initiations and intervene only when it becomes clear that the child is not going to initiate. Allowing children to initiate and terminate activities may further promote initiations. When activities cannot be terminated immediately, SCERTS advises adults to indicate steps for completion.

Setting the stage for engagement and providing appropriate developmental support are also very significant. To engage children, adults are advised to get close and down to their level and secure their attention before communicating. This can happen either verbally by calling the child’s name or non-verbally by touching them. Adults can provide developmental support by repairing communication breakdowns and expanding on the child’s non-verbal communication. It is the adult’s responsibility to clarify the meaning of an unclear signal coming either from themselves or the child. They should also model some verbal communication. If for example, a child gives the adult a box of crisps to request open, the adult can say ‘more crisps’ or ‘open box’.

Adults are advised to adjust language input and to model appropriate behaviours. If, for example, a child does not understand words, adults should mostly use single words. If a child does understand some words, adults can use two- and three- word phrases. The use of non-verbal cues (eg, gestures, facial expressions, intonation) to support understanding is highly recommended. Adults should also model appropriate non-verbal communication (eg, gestures, pointing), a range of communicative functions (eg, holding out an open palm to request an object, pointing to interesting events in the environment and waving to greet) and ‘child-perspective’ language considering the child’s intentions and developmental level (eg, if a child reaches for a toy car, adults might say ‘car’). SCERTS draws adults’ attention to the sensory issues many children with autism experience. In particular, adults should avoid being overly enthusiastic or speaking too loudly when communicating with children who are hypersensitive to sounds and they should avoid touching or hugging children with tactile hypersensitivity.

**Discussion**

Most of the approaches to develop social communication in autism explored in this paper have paid some attention to adult interactive style but some give it far greater prominence than others. Overall, in behavioural/naturalistic approaches advice on adult
interactive style is of secondary importance, the main focus being on the child. In contrast, developmental/relationship-based approaches generally give a lot more advice on adult style and behaviour. While acknowledging that behavioural/naturalistic and developmental/relationship-based approaches may greatly differ in their philosophical underpinnings, it is evident that they share a number of common strategies at the implementation level (Ingersoll and Dvortcsak, 2006). Based on the recommendations, both broad categories provide with regard to the adult interactive style, the author compiled a set of principles, known as the Adult Interactive Style Intervention (AISI). AISI was enriched by the input of teaching staff from a specialist school in the UK and then its impact on children’s spontaneous communication was measured in an AB (pre/post intervention) school-based study (Kossyvaki et al, 2012). Tables 1 and 2 on the following page, present the AISI principles (divided into two groups: general principles and communicative opportunities) and show their links to the different approaches explored in this paper.

**Concluding comments**

As many of the approaches discussed above have common elements with regard to their implementation, it is useful to consider combining these when working with children with autism. There is often mention made of schools using an eclectic approach, yet it may not be clear exactly what this is. In some cases, this is used to mean that key aspects of a number of different approaches are being used. Creating an intervention such as AISI, which is based on a selection of principles derived from several current interventions, is a way of defining the term eclectic in such a way that this can be evaluated. Although a small-scale study on AISI has been conducted in an autism specialist school (Kossyvaki et al, 2012) to collect evidence-based data and bridge the gap between academic knowledge and school practice, more systematic research of ways of transferring the elements of different interventions to classroom settings is required. Just as children with autism are not a homogenous group in terms of their personality, abilities and needs (Parsons et al, 2009), neither are parents and teaching staff in schools. One size or approach does not suit all. Having a set of principles to guide both staff and parents can allow for flexibility and different perspectives on how these might be implemented to the benefit of both the children and the adults concerned.

**References**


### Table 1: AISI general principles and their links to well-known approaches in the field of autism

<table>
<thead>
<tr>
<th>Approaches</th>
<th>General principles</th>
<th>Get child's attention</th>
<th>Establish proximity</th>
<th>Show availability</th>
<th>Wait for initiations</th>
<th>Respond to other communicative attempts</th>
<th>Assign meaning to random actions and sounds</th>
<th>Imitate child</th>
<th>Follow child's lead</th>
<th>Exaggerated pitch, facial expressions and body language</th>
<th>Minimal speech</th>
<th>Give child time to process info</th>
<th>Expand on child's communicative attempts</th>
<th>Non-verbal cues</th>
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### Table 2: AISI communicative opportunities and their links to well-known approaches in the field of autism

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<th>Approaches</th>
<th>Communicative opportunities</th>
<th>Offer choices</th>
<th>Stop part way</th>
<th>Give small portions</th>
<th>Make items inaccessible</th>
<th>Give materials they will need help</th>
<th>Contradict expectations</th>
<th>Give non preferred items</th>
<th>‘Forget’ something vital</th>
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Manolson, A (1992) It takes two to talk: a parent’s guide to helping children communicate Toronto, Canada: The Hanen Centre.


