Commentary: Glass half full or half empty? Testing social communication interventions for young children with autism--reflections on Landa, Holman, O'Neill, and Stuart (2011). Charman T. J Child Psychol Psychiatry. 2011 Jan;52(1):22-3. doi: 10.1111/j.1469-7610.2010.02359.x. PMID: 21143228

Commentary: Glass half full or half empty? Testing social communication interventions for young children with autism
Commentary on Landa, Holman, O'Neill and Stuart (2011)

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Impairments in social communication are the core diagnostic features of autism spectrum disorders (ASD). In the past two decades findings from important clinical research studies (many published in this journal) have translated into improvements in understanding and practice, for example leading to a reduction in the age at which autism is commonly first recognised and diagnosed in many communities.

One area of research that has not, perhaps surprisingly, progressed as much as would have been expected is that of psychological interventions. However, it was not the case that intervention was not discussed by practitioners and researchers. To cut a long story short, there has been an ongoing (and not always civilised or fair-minded) debate over several decades about the effectiveness or otherwise of one particular approach – 'applied behavioural analysis' (ABA), sometimes now called 'early intensive behavioural intervention' (EIBI). There is not space to review this sorry saga but I do think that the green shoots of a rapprochement might be visible. What is clear is that both sides were debating a handful of small, mostly poor quality studies and almost no randomised controlled trails (RCTs) (Ospina et al., 2008). This contrasts with many other areas of child psychiatry and psychology where the trial literature of psychological interventions is considerably more secure. These are not mere esoteric considerations since parents ask clinicians to be referred to treatments that 'work' and service commissioners and insurance companies ask the same question too.

One paper (Landa et al., 2011) in the current issue of the Journal is therefore notable in that it forms part of a 'new wave' of intervention studies that are characterised both by a focus on specifically enhancing social communication outcomes and by using a RCT design. Landa and colleagues compared two kindergarten programmes for 29 month olds with an ASD. The programmes differed only in that one focused on 'interpersonal synchrony' (IS) more than the other (*N*=50, two groups). IS includes a range of social communication activities and constructs including joint attention, imitation, turn-taking, non-vernal social communicative exchanges, affect sharing and engagement. The programme was delivered by trained kindergarten staff and delivered for 2.5 hours per day, 4 days per week for 6 months (overall around 200 hours of intervention). Parents also attended education classes focusing on the same strategies implement in the kindergarten (38 hours) and a monthly home coaching visit. Landa et al. found that the IS group differed from the non-IS group on one variable only: 'socially

engaged imitation', defined as the proportion of imitations paired with eye contact to the examiner across a series of modelled actions (which more than doubled from 17% to 42%). The groups did not differ in amount of initiated joint attention or shared positive affect when interacting with an examiner; nor did their scores on a standardised language measure improve. This introduces the first note of caution after my congratulations to the authors for having run and reported a fine study. What are the limits to the effects we might expect for time-limited interventions aiming to improve social communicative outcomes for young children with autism?

In another recent trial Kasari and colleagues conducted a short-term kindergarten therapist delivered intervention. Three groups of children (*N*=58 in total; mean age 42 months) were randomised to daily 30 minute sessions for 5 to 6 weeks where activities either focused on promoting joint attention or symbolic play skills (and a control group). After 6 weeks there were improvements in both the intervention groups in aspects of child joint attention and play in interaction with experimenters and with their mothers (Kasari et al., 2006). One year later both intervention groups had significantly higher scores on structural language measures than the controls (Kasari et al., 2008).

Both the Landa and the Kasari studies focused on promoting early social communication skills but used a wide range of techniques in the delivery of the therapy ('from ABA to milieu teaching' in Kasari et al. and 'a continuum of adult-imposed structure from discrete trail teaching … to pivotal response training … to routines-based interactions' in Landa et al.) Another recent study combined both developmental and behavioural approaches with greater intensity. Dawson, Rogers and colleagues (Dawson et al., 2010) randomised *N*=48 24-month-olds to receive the Early Start Denver Model (ESDM) or local community treatments. The authors describe the ESDM approach as using teaching strategies that involve interpersonal exchange, shared engagement, adult responsivity and sensitivity. In this study therapists delivered a mean of 15 hours of ESDM over a 2-year period and parents, who were also trained in the approach, reported spending 16 hours per week using ESDM strategies (that can be incorporated into everyday activities, including mealtime, bathtime etc). Dawson et al. found that after 2 years the ESDM group had increased their Early Learning Composite score on the Mullen Scales of Early Learning by 18 points (compared to 7 points in the control group), with most of the change being the result of improved receptive and expressive language skills. They found no changes in symptom scores as measured with the Autism Diagnostic Observation Schedule (ADOS).

A group from the UK (of which I am member) recently reported on a multi-site trial of a large sample (*N*=152; mean age 45 months) randomised to receive a parent-training programme or community treatment as usual (Green et al., 2010). The parent programme was of moderate intensity involving fortnightly visits for 6 months and then 6 further monthly visits. The intervention was a video-aided programme aiming to increase parental sensitivity and responsiveness to child communication, as well as promoting action routines, the use of pauses and supportive language. Green and colleagues found no evidence of a group difference on symptom scores but did find improvements in blinded ratings of parental synchrony and child initiations in parent child play.

The emergence of a growing body of RCTs is to be applauded (not least because they explicitly focus on the core social communication impairments that define autism) but, aside from being long overdue, this 'new wave' presents problems of its own. How

are we to extract information from different studies to inform 'best practice', particularly when the content, implementation, intensity, setting and deliverer of therapy (e.g. parent vs. therapist) are different across the different trials? How does one read the different findings from these trials when there is variation in the use of (and in reporting, the emphasis given to) methodological factors such an blinding of outcome measures, pre-specification of primary outcomes and the use of intention to treat approaches to include data from all participants in the analysis? Some of these issues might one day be amenable to the powerful tools of meta-analytic methodology when sufficient randomised trials have been run; however this is made more difficult when the treatment in different studies differ from one another. Our experience of conducting such trials (and planning our next) also raises issues such as what constitutes an appropriate (and realisable) outcome for a young child with autism (and their family)? It is too early to draw firm conclusions from this new wave of studies but it seems that there is evidence that behaviours proximal to the intervention delivered may be amenable to change (socially engaged imitation in the current Landa et al. study; joint attention and symbolic play in the Kasari et al. (2006) study; parental synchrony in the Green et al. (2010) study). However, in the only studies to date that have reported on autism severity (at least as measured by the diagnostic instrument the ADOS) this has not been amenable to change (Dawson et al.; Green et al.). Understanding the mechanisms that underlie this attenuation of treatment effects and how these can be overcome is one current challenge. A final sobering point (and to close off the beer glass analogy) is that, even in studies that show significant group mean treatment differences, outcome is very variable and some children with autism, at least in the short-term, are resistant to change. There is much work to be done.

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