Kent Academic Repository
Full text document (pdf)

Citation for published version

DOI

Link to record in KAR

http://kar.kent.ac.uk/56933/

Document Version

Pre-print

Material Voices: intermediality and autism

Melissa Trimingham University of Kent (Corresponding author)

m.f.trimingham@kent.ac.uk

Address;

Jarman Building

University of Kent

Canterbury

Kent CT27UG

TEL 07502434663

Nicola Shaughnessy University of Kent (co author)

n.shaughnessy@kent.ac

Address as above

TEL 01227 764000

WORD COUNT 6907

Abstract

The autistic community provide a cultural context that is still little understood. There is an urgent demand for new social and pedagogical engagement since autists often do not have the means to communicate in conventional ways. In the AHRC funded project Imagining Autism: Drama, Performance and Intermediality as Interventions for Autistic Spectrum Conditions (2011-14) 'intermediality' unlocked some of the many and various languages that autists use. In this article, we draw upon detailed participant observations to analyse how the interactions between the participants, media and the facilitators created new ways of engaging with and connecting to the social world. We argue for the centrality of intermediality as a bridge between the lived experience of autism and the practices of education and care. We demonstrate the value of communicating differently through the multi modalities of participatory performance and interactive technologies. The radical conclusion is that pedagogical demands for 'normalization' of such children may result in only tiny gains until educators in day to day contact with such children 're-

perceive the whole' of their often isolated worlds through new, unexpected and highly creative 'material' and intermediate languages.

Senior Educational Psychologist (SEP): I believe [Matthew's mother] has spoken to you?
[…]
Practitioner 1 (P.1): Yes she did. […] I wish I'd had a microphone! She said some amazing things; quite…moving
SEP: She's so excited about it.
Film Maker: What's she said to you?
[…]
SEP: She said, you know, what he's getting out of it. It's such a lot. He's starting to speak.
[…]
He's sharing things with her. And I think you've read that bit [in the school communication book] where she said she was travelling in to school and asking to come to the food tech room. And [Matthew] said to her, 'I will do that but it's not for you.' Something like that. I think it's great. It's amazing.
P. 1: Apparently [Mathew's mother] said yesterday he went outside and he said 'It's raining' and 'It's cold'. So- she says he's noticing the environment around him
SEP: Yes, yes
P. 1: And communicating…which is great to hear.
SEP: So my thoughts … actually, on that are, and I'll discuss that with [other staff] as well-what can *we* do in education to give kids …such a lot of enthusiasm to want to go into class, to want to go in to the pod, the same thing. I mean, you are doing something so right….

(Informal conversation in 'Imagining Autism' workshop debrief with Jaap Erasmus, Senior Educational Psychologist, Helen Allison NAS (National Autistic Society) School, November 2012.) [Refer to Preliminary Extract online]

Introduction

The 'something so right' refers to the project 'Imagining Autism, Drama, Performance and Intermediality as Interventions for Autism Spectrum Conditions', 2011-2014.[1] Matthew was a 12 year old boy, with a diagnosis of autism and very limited language, whose mother had reported significant changes in his speech during the first few weeks of his involvement in the project. She had not connected this directly to his participation but had written (and then phoned) to ask whether the school was doing anything different. The class teacher referred to the Educational Psychologist who made the connection to the project, particularly as the changes were reported as happening on the same days as the workshops. As parents and teachers were 'blind' to the project's methods, the communication book proved to be vital as a source of evidence. In this article, we consider how the 'intermediality' of the project's title, functioned as more than an 'intervention" (the terminology derives from the project's interdisciplinary foundation), offering a holistic approach that was considered by educators to have considerable pedagogical potential for future practice.

The project was originally set up to test the hypothesis that the 'triad of impairments' in autism might be addressed through the key elements of drama, also conceived as a triad in terms of communication, social interaction and imagination.[2] Implicit in our title is our acknowledgment that the project turns upon 'the basic mediality' of theatre (Boenisch 2003, 44). Even as theatre is steeped in media, whether the 'new media ' of electronic technology or older technologies, our 'pod' or portable performance space is similarly driven by 'basic mediality', the material means of theatre: lights, sound, textures; live feed, projections, microphones, cameras; objects, costumes, masks and puppetry. Our pod acts as a dynamic intermedial space that problematizes the 'inter' in 'intermediality' indicating that binary and linear models of exchange between mind and material world are mistaken. The media does not stand, we will argue, *between* the child and their experience but is integral to that experience. Such a stance by passes the old argument between Phelan and Auslander about the relative immediacy of mediated experience (Auslander 1997, 2008; Phelan 2006). Bay Cheng locates intermediality as a 're-perception of the whole which is reconstructed through performance' (Bay Cheng 2010, 12) and we concur with her holistic stress on the agency of both maker and perceiver. We argue that as educators we need to make more strenuous efforts to 're-perceive the whole' in order to position ourselves alongside autists' varied and highly individual modes of perception; we can in this way actively 'reconstruct' their perception using intermedial or directly *material* means in performance and drama work. Maurice Merleau-Ponty described in phenomenological terms the chiasmic intertwining of self and the 'other'

(Merleau-Ponty [1968]2004) that is also fundamental to Imagining Autism. Merleau-Ponty's concept of the 'visible' and 'invisible' can be mapped on to Vittorio Gallese's 'shared manifold' of intersubjectivity- self and other-between human beings. This 'shared manifold' is the necessary prerequisite of learning to communicate and to 'mind read' others (Gallese 2001, 44-6). It has been argued that people with autism lack 'theory of mind,' having difficulties in understanding the actions and perspectives of others and even in recognising that others have minds (meta-cognition).[3] In Imagining Autism the 'shared manifold' (me and you) manifests in participant joint attention and joint action between the child and the adult - and (perhaps uniquely for a sensory based intervention) between each other. In our case studies described here, the participants exhibited improvements in communication, empathy and imagination (social and creative).[4] However, in terms of intermediality, the child also shares with us a particular creative perception of the world, deriving from and evolving through, for example, the lens of a camera or the encounter with a puppet.

Providing the right keys?

Whilst we argue for a complementary approach to the task of mainstream education that dedicated teachers and educators pursue daily in the classroom, the researchers share the view that typical social environments (such as schools) do not provide the right keys or intensity for social learning or imaginative development in autism.[5] We suggest (as evident in the dialogue quoted above with a senior educational psychologist), that conventional approaches to teaching autistic children (skills based, low arousal and highly structured and regulated programmes which reduce anxiety to maximise learning) maybe usefully supplemented by more fundamentally embodied and creative approaches. How do we set up *active* learning for the autistic child whose very embodying of the world maybe vastly different to our own? How can we support and facilitate the capacity for creative and original thinking which may even be superior to our own?[6]

The physical differences in perception between neurotypical and autistic children are only just being acknowledged (Bogdashina 2003) along with the fundamental 'affect' upon the child of such differences. For example, a child maybe hyper (over) or hypo (under) sensitive in any of the five modalities of sight, hearing, smell, taste or touch. We discovered how to promote active learning through an iterative cycle of practice as research, finding out through a shared process (between practitioners and participants) of learning through doing, making sense of autism through experiencing the

child interacting with the mediality of the pod environments. Our practice based approaches afford potential venues for learning in rich multi-sensory spaces. Each week for ten weeks, the child entered a scenic environment as a place for free play- the Forest, Outer Space, Underwater, the Arctic and Under the City. These were contained within a portable tent-like performance structure ("the pod") which, with its rich immersive textures, smells, sounds and light offered a high arousal environment. Masked and costumed creatures such as "Foxy", puppets of varying sizes, both Bunraku style and hand puppets, light, colour, projections and a soundscape that continually articulated the space, offered a short, intensive programme that might be considered high risk for children with sensory challenges. The environment, materials and methods needed to be sufficiently flexible to accommodate the spectrum of difficulties and preferences presented by each child, so that they could mediate the stimuli through a process of sensory integration. Many children would run eagerly into the pod and then gradually explore it, while those who were more cautious in the initial encounter surprised us (and teachers) not only by their subsequent eager anticipation and engagement with the environment, but in the quality of their interactions. We speculate that the rich environment offered by the pod and its larger than life quality afforded our participants an opportunity to experience a world that was both familiar and strange, in tune with their perceptive style which foregrounds detail.[7]. The approach invested each child with agency. We learned not to lead or be led by our anxieties about producing demonstrable outcomes. This involved reducing language and allowing them to discover the 'mediated' space, and to initiate their own actions through the tools it affords them- a cardboard tube, a microphone, a cloth, a projection, a puppet. The iterative practices discussed below developed intersubjectivity via the material means- the media- of the pod.

Paradigm changing work on cognition (Varela, Thompson and Rosch 1991), as well as other key theorists such as Antonio Damasio ([1994] 1996 and [1999] 2000 , Vittorio Gallese 2001, Sean Gallagher 2005 and Michael Spivey 2007) brought recognition of the mind as embodied rather than 'embrained' (Gallagher 2005, 135, Gallagher 2015): in other words the body and brain are inextricably joined. [8] Neuro-scientists also increasingly recognise the importance of what lies outside the body/brain- not only the material world in all its rich potential of sight, sound, smell and touch (which is vividly realised in the IA environments) but, crucially, other people. Intersubjectivity ('the sharing of manifest affective and perceptual experience') (Brinck and Liljenfors 2103, 90) is the key to neuro-typical cognitive development from the earliest moments of childhood (Brinck 2014, 745). Evan Thompson (2001), Natalie

Depraz (2001) Jordan Zlatev and others (2008) have demonstrated how the 'other' via 'instances of participatory practice' (Zlatev et alia 2008, 5) is fundamental to developing empathy (linked to feeling emotion) and the ability to think, including 'meta-cognition' or the very awareness that one has a mind (Brinck and Liljenfors 2013, 88). People with a diagnosis of autism, depending where they are on the spectrum, may appear to ignore other people, focussing on restrictive, repetitive patterns of behaviour interests or activities. This may or may not be their retreat from or defence against the sensory challenges of the social environment and it leads to the stereotyped perception of the autist as locked in her/his own world. In our experience, intermediality offers tools to facilitate interaction and engagement based upon the individual's predilections and interests and through materials and resources that combine predictability with creativity.

Intersubjectivity depends on simple beginnings such as dyadic interplay between baby and carer, progressing to joint attention (which is triadic and 'centred on a third object'-'look!')(Brinck and Liljenfors 2013, 93): and finally joint action, which, as we might guess, involves triadic interaction (94): all three modes were seen in Imagining Autism. Although these are progressive stages of cognitive development, they are all eventually co-present in neurotypical play and behaviour. Importantly for our purposes here, objects (or media) were intimately embedded in Imagining Autism's intersubjective encounters via joint attention and joint action. Autists commonly interact with objects in repetitious, solitary and obsessive ways including stimming, eating 'inedible' substances (pica) and becoming highly distressed especially in odd or unusual physical environments. Joint attention and joint action in Imagining Autism worked against both solitary behaviours and solitary object use. The children we have chosen to focus on here are Harry and his camera; and Mary interacting with a puppet.

Case Study 1: Harry and his camera

Harry was 11 years old in the project, and today still does not speak or make eye contact, rarely smiles, and in many ways typifies the apparently utterly solitary existence that many children experience at the severe end of the spectrum. His quick intelligence in momentarily working the desk (altering the sound and lights swiftly and dramatically) and our cameras (precious footage would be wiped in an instant if he succeeded in snatching a camera) was frustrating as we worked on breaking into his world. We gave him his own camera in week 3 the Arctic, where upon he lovingly inspected it, then happily moved in and (especially) out of the pod photographing constantly. He took

close up studies of fragments of the laminates on the notice board, views from the window, specks on the glass, checking his pictures, deleting many at once. He often pointed the camera in selfie mode at himself, posed, took it and studied the result. Trimingham describes her encounter in the Arctic with Harry on this his first session with his camera, thus:

'Dressed in a hastily assembled new costume as a husky dog, in my onesie suit and sometimes in my 'open' mask (you could easily see my face beneath) I constantly sabotaged his selfie photos by popping up over his shoulder (Figure 1). I began to point out photographs for him to take. Outside the pod to begin with he often simply ignored me. Inside, inspired by seeing him photograph the white paper 'snow' pieces on his black trousers, I gathered up the paper bits and arranged them on a dark floor background. Harry began to take my proffered pictures and smiled for the first time.

Figure 1 Sabotaging Harry's 'selfies'

Figure 2 Posing for Harry

After I threw the 'snow' in the air [refer to Extract 1 online] I went behind him to see the resulting picture, and an interesting exchange took place. Harry changed the camera mode to selfie, glanced at the joint picture of us on the screen, and then changed his gaze to the far distance out of frame. Before taking this picture however he glanced back to the screen and turned his head over his left shoulder looking at me and finally took the picture then. He moved, then repeated this sequence immediately.'

Harry here finally chose to photograph a more intimate relationship (twice) and seemed to make the decision as if the camera itself extended his thinking. 'Show me!' asked the dog, and he turned the screen towards her. He then moved off and the dog followed [again, refer to Extract 1 online]. They stopped to do the 'throw snow' picture again. Joint attention now developed into clear joint action: the dog raised two large handfuls of paper and he lifted the camera to take a picture. The dog paused: Harry waited. "One, two, three" shouted the dog, and threw the pieces up in the air. He 'caught' his picture mid-air and inspected it. Outside Harry spontaneously took a close up of the dog's face and five minutes later the dog deliberately posed for Harry - and this time Harry responded taking her picture [see Figure 2]. The dog drank some water from a cup and offered it to Harry. He put it to his lips and promptly took a selfie picture: then he drank.

In the week after the project was completed, on the Tuesday it had previously been timetabled, the project team received an email from the school with a photograph of Harry. He had astounded his teachers by spontaneously building a structure out of rugs and tables in the classroom, as if to denote the absence of the tent, making it present in a highly imaginative and palpable way. Asked what he was doing, peeping through the window, he replied: 'in the Arctic'. [Figure 3]

Figure 3 Harry builds his Arctic shelter

It is hard to assess the longer term impact on Harry as he (on a recent visit two years on) still appears to behave in much the same ways now as he did when we first met him. However, we suggest that this apparent impact on his wellbeing during the project was significant, prompting this sort of spontaneous play (rather than the self -stimulatory or more distressed behaviours he frequently exhibited and which were noticeably reduced while the project was in progress). We suggest this was a result of communicating with him in ways him understood-intermedial ways- that responded to his interests and followed his cues. Whilst this example focuses on the camera, Harry also engaged creatively with the computer that controlled projections, light and sound (Refer to Extract 3 online). Perhaps this approach could be replicated in the classroom by teachers being aware of, and able to experiment with intermedial tools.

These encounters between Harry and the dog veer between joint attention (for example the dog sabotaging his selfie photos) and joint actions. The play combines 'secondary subjectivity', typically triadic attention/action (Trevarthen 2008, x)[9] and 'primary intersubjectivity' (Hobson and Hobson 2008, 77)- which is typically a face-to- face or 'dyadic' encounter 'where the subjective states of each are closely co-ordinated one way or another, for example when they experience joy together ' (77). It is the nature of the mediating camera as object of attention and action and also as a means of *seeing* and so directly interacting with each other which makes it hard to distinguish here between the secondary subjectivity and primary state of intersubjectivity. The developing intersubjectivity and 'shared experience' between the dog and Harry 'is not merely like having one's own experience of the world and then adding something' (77) because the accumulation of intimacy evolved as an inextricable intertwining of three elements: Harry's and Trimingham's changing states of cognition, and (controversially) *the camera itself*, since it is hard to see how the developing thinking can be considered as separate from the medium shaping it. 'The incorporation of tools into one's

body schema introduces a profound blurring of the line between embodiment (where the body's sensors and effectors help perform the processes of cognition…) and embeddedness (where the objects and spaces in the surrounding environment also help perform the processes of cognition)…Sometimes manufactured objects, that are strictly speaking external to the body, can become some of our body's sensors and effectors…' (Spivey 2007, 248-9). Shared attention, action and eye contact were 'mediated' and *extended* by the camera: and to a lesser extent by the dog mask. Here the 'tool' or camera became incorporated into their space of extended cognition[10], the camera being already an integral part of Harry's perception and thinking, framing the other, and increasingly part of Trimingham's cognition as she adapted to his cognitive modes. Interestingly the mask/costume/object was more part of Trimingham's habitual mode of 'thinking', at least as a performer, and arguably Harry adapted to her cognitive mode too[11] since outside the pod, weeks later, she was rewarded by Harry responding with laughter (for the first time) directly to her puppet addressing him.

Harry continued to demonstrate how his behaviours in the pod were inextricably bound to the camera including his relationships with others. In our Underwater environment, towards the end of the project, he finally *initiated* a joint action with the Assistant Educational Psychologist and a practitioner in role as a pirate, following a sustained period of self-initiated photographs. [Refer to Extract 2 online]. As the filmmaker observed to the Assistant Educational Psychologist and practitioners after this session:

FM: So was Harry doing really fantastic things today? I saw you all jumping up and down. And I thought, man, he's got you all doing stupid things today!
Asst. EP: He was trying to take…Usually he likes to take lots of pictures of himself but actually…he was really trying to get both of us [i.e. Practitioner and Asst.EP]. And he really wanted me to be in it. I had to put my camera down and just do it. He was trying to get us to jump up and down with him.
Practitioner: At one point I thought he was trying to get a photo of all three of us…
Asst EP: "Do you want me to take the picture of you?" And he was 'No, no, no', and he was trying to take one of us all together [she raises her arm to demonstrate him holding the camera]
Practitioner: just from an odd angle…

Later he worked the computer [refer to Extract 3 online] so that he brought up footage on the screen of previous sessions. As he watched for several minutes the changing scenes, there was a noisy altercation developing in the pod space

behind him between Matthew and the bird puppet (the puppet kept stealing Matthew's covers). When Harry left the desk, he turned his attention to the camera filming him and broke into a broad smile. Although it is tempting to think he was amused by the background puppet exchange, this is probably misleading: instead of watching Matthew and 'Purdy birdie' squabbling, he approached, with his own camera, the person filming him and laughed aloud several times along with the camera person (whose filming at once went awry!), a shared moment of glee as he photographed and sabotaged the camera filming him, and then returned to the desk. He finally took a picture of the computer screen. He seemed to be finding joy in watching film, being filmed, filming the filmer (the moment of intersubjectivity) and finally the 'filming the filmed' by capturing in a photo the computer screen. Again his experience of intersubjectivity seemed entirely emergent within the frame of a camera.

In Figure 4, we see Nicola Shaughnessy filming but caught by Harry in a picture jumping high in air as Harry jumped up high too. This again is intersubjectivity: a moment of joint attention, a moment of play charged with shared joy.

Figure 4 Secondary subjectivity and primary intersubjectivity: jumping together

In this way intermediality is integrated into the whole experience and not an added extra: 'inter-corporeality extends beyond the body to encompass objects' and 'intersubjectivity is *materially grounded*, and this embodiment extends "beyond the skin" to encompass its mediation by objects, or what we shall call…interobjectivity' (our emphasis) (Sinha and Rodríguez 2008, 364).

Case Study Two: Mary and the puppet

Intermediality encompasses puppetry– an ontologically challenging object in terms of 'interobjectivity'. According to Meike Wagner the puppet makes us uncomfortably aware, at least in performance, of the chiasmic intertwining of perception between subject and object, self and other (Wagner 2006, 128-9). She points out that because the watcher is a 'corporeally involved perceiver' and not a 'decoding and signifying mind' (128) there is a complex dramaturgical tension around the intermedial body of a puppet and the live presence of the puppeteer that moves it.[12] In Imagining Autism this unease or uncertainty is translated into an advantage in that the puppet attached to a human presents opportunities for a less complex interaction than face to face

contact.   The child appears not to be troubled by a puppet, and (particularly towards the more severely affected end of the spectrum) interacts with it more readily than with a human, and in many cases progresses to three way communication that includes the puppeteer splitting off from the puppet, joining in and speaking to or doing actions with the child too as themselves (a technique known as 'manipulacting').[13] The attraction to detail in autism maybe a disadvantage in encountering and negotiating the complexities of a human face speaking, which communicates changes minutely, milli-second by milli-second: a puppet's face does not. To state the obvious, puppets are *usefully inanimate*. Some autists complain that they experience a disturbing synaesthesia of colour auras around living persons or pick up inexplicable sensations from others (Bogdashina 2003, 94). It maybe that for some children puppets allow them satisfying intersubjective experiences without complicating and confusing factors. Moreover the puppet we discuss here is a bird hand puppet; and bird faces, with their two defined eyes and single feature (the beak) seem to work particularly well with autistic children as an intermedial device.

The complexity of the puppet 'object' is its movement- apparently animated, with slight redundancy (unevenness) of motion, derived from its attachment to the body of the puppeteer, who will normally keep the puppet moving (even if only breathing) all the time. Mandler claims this unevenness of movement (coupled with independence of movement) is partly what enables an infant to recognise something as animate (Mandler 1992, 593). The notion of contingency is particularly relevant to puppets since the concept[14] of animacy is dependent upon 'contingency of motion between objects, especially contingency that acts at a distance rather than through direct physical contact'. In other words infants recognise animacy in 'objects' that respond to their 'actions' and 'vocalizations' at a distance in a way that inanimate objects do not (594). Contingent response through haptic contact however is more complex. It might mean the object is animate (the infant's mother responding for example to the infant's touch) or it might mean it is inanimate (a toy car moving because the child moves it) and according to Mandler the infant comes to understand these differences. The puppet usefully confounds these boundaries, allowing a child in Imagining Autism rich intersubjective encounters, with an object that is more 'animate', and a puppeteer that is less 'animate'.

One such encounter is that of Mary and the Forest Woodpecker puppet Dennis (puppeteer Trimingham) (Figure 5). [Refer to Extract 4 online]:

Figure 5 Dennis the Woodpecker and puppeteer Melissa Trimingham

Moving through the pod with a practitioner (Gemma Williams), Mary fiddles with a 'gummy worm' sweet she has found (planted in the leaf strewn floor for children to find and feed the bird) and Mary's her eye is caught by Dennis perched in his tree opening, attached to the arm of the hidden puppeteer (Trimingham). Mary moves towards him taking a wide circle. She watches intently as Williams feeds Dennis, is startled by the sudden movement of his beak, recovers and attempts to feed him herself, but loses her nerve. Her attention on Dennis is rapt and the words 'Bird eat meat' can clearly be heard. In a subsequent sequence Mary lies back in the hammock feeding Dennis with her water bottle, relaxed and happy, with the puppeteer kneeling next to her on one side, Williams on the other. [Refer to Extract 5 online]

The corollary to this story is that Mary arrived home one day from school and asked her mother: 'Where's Milo?' Milo was the cat whom Mary had never shown any interest in. Astonished by this and also by Mary speaking at all (she rarely did so) her mother asked why she wanted to see Milo. 'Mary stroke Milo' she replied. Milo was duly produced and Mary stroked him. Not only did Mary begin to build up a relationship longer term with Milo (as her mother testified) but she also began to stroke the other (less friendly!) cat in the family. The family were also able to visit the zoo for the first time together where Mary stroked and showed an interest in the animals.

An astonishing outcome like this focuses attention upon Mary's encounter with the puppet as an affective experience that we assume helped to develop her empathy for animals. [15] Working in the non-threatening space between animacy and non-animacy, Mary is able to overcome her fear of the unpredictability of the 'other's' (in this case an animal's) movement and develop her empathetic responses. It is noticeable that she is far more relaxed in the hammock following this episode [refer to Extract 5 online], when the puppeteer is fully visible, perhaps allowing her to be more certain of the puppet's status as inanimate, given its ambiguous contingent responses when earlier being fed. However what is perhaps more significant about the first feeding episode is the relationship between Williams (and later Trimingham refer to Extract 5 online) and Mary, rather than Mary and Dennis, a relationship made possible by the (inter) mediating object of joint attention, the puppet.

Why is joint attention so important? Simple to say, the object is *noticed*: 'Related studies …. investigating the neural correlates of joint attention in 9-month-old infants, show that they allocate significantly more attentional resources to objects that are targets of joint attention as compared with

objects that are not' (Brinck and Liljenfors 2013, 93). If objects are habitually ignored, or used as simple physical affordances in the environment (Trimingham 2013, 232-3) or used for stimming, learning cannot take place. Mary, by focussing via joint attention, is developing social knowledge and skills: 'seeking emotional and vocal information from the adult to evaluate the situation, and determine how to proceed to achieve the goal' (Brinck and Liljenfors 2013, 93). Brinck stresses the importance of 'the sharing of experiences' (Brinck 2008) for developing 'intentionally communicative behaviours' (Zlatev et alia 2008, 8). Above all however, joint attention develops metacognition, crucially lacking in many autists: 'We maintain that these behaviours involve metacognition, serving to manage the infants' cognition, and constitute epistemic actions, reducing the need for internal computation' (Brinck and Liljenfors 2013, 93). Joint attention is 'the first indicator that the infant understands in a non-symbolic way that the other and itself have minds' (Anthony Marcel in Gallagher 2008, 188). Mary here is moving towards understanding that others (Williams) have minds, and in turn developing a surer sense of her own self as having a mind, through joint attention in a mediated environment, of which this is just a single example.[16] Quite simply, Mary is learning, and learning actively.

Conclusion

In Imagining Autism, as these examples indicate, the intermediality of the project's title created insights into both how children with autism create meaning (differently), and the role of the body interacting with the physical and social environment in developing cognition. Our approaches helped us to understand more about imagination in autism and how those affected recreate in their minds the world around them. As Ami Klin and Warren Jones have observed in their 'enactive minds' hypothesis 'their [autistic children] mental recreation of the world around them appears to go beyond a psyche devoid of concerns with other people's mental states, their internal world appears to be skewed in the direction of things and physical or factual entities.' (Klin and Jones 2007, 24) Could this explain why working with physical entities through interactive media we are able to engage imaginatively with autism? According to Klin and Jones 'meaning [in autism] arises out of the origin of cognition within the body, with its various sensorimotor capacities…mind emerges out of gesture, but the *meaning* of mind is rooted in the reaction of the other to the child' (42) As our examples indicate, the role of practitioners in conjunction with the media (e.g. puppetry, costumes, cameras) facilitate encounters with and between an objectified "other", understood as not real by the participants,

within the safe space of a fictional framework. The project's intermediality is in tune with autism. As Peter Fonagy explains in his commentary on Klin and Jones: 'While for most children human interaction is inherently rewarding, for children with autism physical aspects of the world are of greater interest' (42). The approach in Imagining Autism links cognition to affect (in keeping with the enactive mind hypothesis) and in so doing, emphasises the importance of embodied engagement to learning in autism. This endorses Shaun Gallagher's view of the centrality of the body in the action of cognition, challenging the "body snatchers" that see the essential action occurring in the brain (Gallagher 2015). The inclusion of 'intermediality' in the title of the project became increasingly pertinent as the project progressed. We came to understand the importance of our imaginative engagement with the autistic experience and perception of physical and social environments, the need to facilitate social (and creative) imagination and empathy on the part of the participants through intermedial elements. These material voices and rich affordances provided us with tools for learning as our cognition was also facilitated through action-and-object orientated perspectives. These, we suggest are lessons *from* autism for working *with* autism.

Indication of figures

Figure 1 Sabotaging Harry's 'selfies'

Figure 2 Posing for Harry

Figure 3 Harry builds his Arctic shelter

Figure 4 Primary and Secondary Intersubjectivity: jumping together

Figure 5 Dennis the Woodpecker and puppeteer Melissa Trimingham

(Photograph by Matt Wilson, University of Kent)

Reference List

Auslander, Philip. 1997. Against Ontology: Making Distinctions between the Live and the Mediatized. *Performance Research* 2:3: 50-55
                2008 *Liveness : performance in a mediatized culture*. 2nd ed., Routledge, London

Bay Cheng, Sarah. 2010. *Mapping Intermediality in Performance*. Amsterdam. Amsterdam University Press.

Bennet, Jill. 2005. *Empathic Vision: Affect, Trauma and Contemporary Art*. Stanford, California: Stanford University Press.

Bogdashina, Olga. 2003. *Sensory perceptual issues in autism and Asperger syndrome: different sensory experiences - different perceptual worlds*. London: Jessica Kingsley.

Brinck, Ingar. 2008. The role of intersubjectivity in the development of intentional communication. In *The Shared Mind: Perspectives on Intersubjectivity*, ed. Jordan Zlatev, Timothy P. Racine, Chris Sinha and Esa Itkonen, 115-140, Amsterdam and Philadelphia: John Betjamins Publishing Company.

                2014. Developing an understanding of social norms and games: Emotional engagement, nonverbal agreement, and conversation. *Theory and Psychology* 24.6: 737-754.

Brinck, Ingar, and Rikard Liljenfors. 2013. The Developmental Origin of Metacognition. *Infant Child Development* 22: 85–101

Damasio, Antonio. [1994] 1996. *Descartes Error: Emotion, Reason and the Human Brain*. London: Vintage.
                [1999] 2000 *The Feeling of What Happens; body, emotion and the making of consciousness.* London: Vintage.

Frith U., F. Happé and J. Briskman. 2001. Exploring the Cognitive Phenotype of Autism: Weak Central Coherence in Parents and Siblings of Children with Autism: I. Experimental Tests. *Journal of Child Psychology and Psychiatry.* 42. 3: 299–307.

Gallagher, Shaun. 2001. The Practice of Mind: Theory, Simulation or Interaction? In Evan Thompson, ed. *Between Ourselves: Second-person issues in the study of consciousness*, 83-108. Thoverton, UK: Imprint Academic.
2005. *How the Body Shapes the Mind*. Oxford, 2005.
2008. Emotion and Empathy. In *Brainstorming: Views and interviews on the Mind*, 171-95. Thoverton UK: Imprint Academic.
2015. The Invasion of the body snatchers: How embodied cognition is being disembodied. *The Philosophy Magazine* April: 96-102

Gallese, Vittorio. 2001. "The Shared Manifold Hypothesis: From Mirror Neurons to Empathy". In Evan Thompson, *Between Ourselves Second-person issues in the study of consciousness*, 33-50. Imprint Academic Thoverton, UK.

Happé, F. 2010. *Autism and Talent*. Oxford: Oxford University Press.

Haraway, Donna. 2008. *When Species Meet*. Minneapolis: University of Minnesota Press.

Klin, Ami, and Warren Jones. 2007. 'Embodied psychoanalysis? Or, on the confluence of psychodynamic theory and developmental science'. In *Developmental Science and Psychoanalysis – Integration and Innovation,* ed. Linda Mayes, Peter Fonagy and Mary Target, 5-38. London: Karnac Books.

Mandler, Jean. 1992. How to Build a baby: Conceptual Primitives. *Psychological Review* 99.4, 587-604

Merleau-Ponty, Maurice. [1968] 2004. The Visible and the Invisible: The Intertwining—The Chiasm. In *Basic Writings*. ed. Thomas Baldwin, 130-55. London: Routledge.

Phelan, Peggy. 1993. *Unmarked: The Politics of Performance*. London and New York: Routledge.

Sinha, Chris and Cintia Rodríguez. 2008. Language and the Signifying Object: From convention to imagination. In *The Shared Mind: Perspectives on Intersubjectivity*, ed. Jordan Zlatev, Timothy P. Racine, Chris Sinha and Esa Itkonen, 357-378. Amsterdam and Philadelphia: John Betjamins Publishing Company.

Smuts, Barbara. 2001. Encounters with Animal Minds. Journal of Consciousness Studies 8.5-7, 293-309.

Spivey, Michael. 2007. *Continuity of Mind*. Oxford: Oxford University Press.

Trevathen, Colwyn. 2008. Foreward. Shared Minds and the Science of Fiction: Why theories will differ. In *The Shared Mind: Perspectives on Intersubjectivity*, ed. Jordan Zlatev, Timothy P. Racine, Chris Sinha and Esa Itkonen, vii-xiii. Amsterdam and Philadelphia: John Betjamins Publishing Company.

Tomasello, Michael. 1999. *The Cultural Origins of Human Cognition*. Cambridge Mass., London, England: Harvard University Press.

Trimingham Melissa. 2011. How to think a Puppet. *Forum Modernes Theater* Vol 261, 121-136
                        2013. Touched by meaning: Haptic Effect in Autism. In *Performance and Cognitive Science: Body, Brain and Being*, ed. Nicola Shaughnessy, 229-40. London: Methuen.

Varela, F., E. Thompson and E. Rosch. 1993. *The Embodied mind: cognitive science and human experience*. Cambridge, Mass., London: MIT Press.

Wilson, Robert, and Andy Clark. 2009. How to Situate Cognition, Letting Nature Take Its Course. In *The Cambridge Handbook of Situated Cognition*, ed. Philip Robbins and Murat Aydede, 55-77., Cambridge, Cambridge University Press.

Wagner, Meike. 2006. Of other bodies: the intermedial gaze in theatre. In *Intermediality in Theatre and Performance,* ed. Freda Chapple and Chiel Kattenbelt, 125-36. Amsterdam, New York: IFTR, Rodopi.

Zlatev, Jordan, Timothy P. Racine, Chris Sinha and Esa Itkonen. 2008. Intersubjectivity: What makes us human? In *The Shared Mind: Perspectives on Intersubjectivity* ed. Jordan Zlatev, Timothy P. Racine, Chris Sinha and Esa Itkonen, 1-16. Amsterdam and Philadelphia: John Betjamins Publishing Company.

---

[1] Imagining Autism: Drama, Performance and Intermediality and Interventions for Autistic Spectrum Conditions' was an AHRC funded project based at the University of Kent (October 2011-March 2014). Investigators were Professor Nicola Shaughnessy (Drama), Dr Melissa Trimingham (Drama), Dr Julie Beadle-Brown (Tizard) and Dr David Wilkinson (Psychology). Participating Schools were St Nicholas School Canterbury (Spring term 2012), Laleham Gap, Broadstairs (Summer Term 2012) and Helen Allison School, Meopham (Autumn Term 2012). The schools covered a wide spectrum of ability. The project worked with 6-8 participants in each school, aged 7-11, with a diagnosis of autism. The intervention involved participants in weekly sessions (45 minutes) in a portable installation (the 'pod'). These pioneering interdisciplinary methods of intervention and evaluation have generated evidence that drama can impact positively upon the symptoms of autism. The research has also challenged many of the myths surrounding the condition, offering new insights into the imagination in autism.

[2] New diagnostic criteria for autism have now replaced DSM-IV from which this triad originally was drawn. See DSM-5 http://www.dsm5.org/Pages/Default.aspx

[3] Baron-Cohen first identified autistic children as lacking what he termed 'theory of mind' which he saw as neurotypically appearing around 4 years old. Although theory of mind is widely accepted (though differently interpreted), there is debate as to whether it appears at around 4 years old and is considered an intellectual capacity or develops much earlier through embodied interactions and intersubjectivity. See Gallese 2001 p.42 for a summary and Gallagher 2001 for a different somatically based interpretation of TOM.

[4] Psychological testing demonstrated statistically significant changes in several areas of deficit and across the spectrum, the biggest changes being in reciprocal social interaction, emotion recognition and the severity of autistic symptoms as rated by parents and teaching staff. Significant improvements were also found for at least some of the children in socialization, communication, imagination and play with at least some of the children in all three schools showing improvements in at least one area.

[5] We are indebted to the Psychologist and autism expert, Dr Matthew Lerner who contributed these observations whilst visiting the Imagining Autism project in June 2015.

[6] This view is put forward by Francesca Happé' in *Autism and Talent*, 2010.

[7] There is of course no one autistic perception and every child is an individual with their own strengths and difficulties. However, there is a consensus that autists often, no matter where they are on the spectrum, generally are able to pick out details of the whole with particular ease. This has led to the weak central coherence theory (Frith, Happé and Briskman 2001 and Happé 2010, 32-3) in autism.

[8] Here Gallagher offers an interesting critique of Damasio, pointing out how Damasio continually slips back into the 'embrained position' that concentrates on how neural networks are affected by the body, an attitude which he maintains is persistently Cartesian in its basic tenets. See also Gallagher 2008, p.173, on Damasio.

[9] See also Tomasello 1999, 62.

[10] The term 'extended' cognition is used deliberately here rather than 'shared' cognition. 'Extended' indicates that the camera has become part of thought itself, an example of 'spectacularly transformative mixes of organismic and extra organismic resources' (Wilson and Clark, 2009, 73).

[11] Compare Smuts 2001, 295 where she describes her research as a process of 'habituation': but not habituation by the baboons whom she studied adapting to *her* modes of being, but her habituation adapting to theirs. Also Haraway 23-7.

[12] Jill Bennet points out how puppetry worked on a visceral rather than rational level in *Ubu and the Truth Commission*, commenting on South Africa's TRC (Truth and Reconciliation Commission). Bennett 2005, 112-123.

[13] A typical example of this is the bird puppet pulling off Matthew's covers, mentioned above as a background to Harry filming. Matthew enjoyed wrapping himself up in covers and the birdie enjoyed pulling them off; the puppeteer became Matthew's ally telling the bird off severely. Matthew went along with the joke for a while, and then seized the puppet, working it to attack (playfully) the puppeteer. This can be heard in the background in Extract 3 online.

[14] Mandler here takes an intellectualised view of an infant's developing cognitive understanding which is curious since she demonstrates it developing in a thoroughly embodied way.

[15] Her mother at least was convinced of this when she subsequently saw the footage of Dennis and Mary, but of course we cannot know for sure.

[16] Mary's encounter with Foxy is described in Trimingham 2013, 233-5