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Quantifying peer interactions for research and clinical use: The Manchester Inventory for Playground Observation

Jenny Gibson [a], Jamilla Hussain [b], Samina Holsgrove [c], Catherine Adams [a], Jonathan Green [d,*]

[a] Dept Human Communication and Deafness, Ellen Wilkinson Building, University of Manchester, Oxford Road, Manchester M13 9PL, UK
[b] Leeds Teaching Hospitals NHS Trust, Leeds General Infirmary, Great George Street, Leeds LS1 3EX, UK
[c] Central Manchester University Hospitals Foundation Trust, Trust Headquarters, Cobbett House, Manchester Royal Infirmary, Oxford Road, Manchester M13 9WL, UK
[d] Community Based Medicine, Jean McFarlane Building, University of Manchester, Oxford Road, Manchester M13 9PL, UK

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ABSTRACT

Direct observation of peer relating is potentially a sensitive and ecologically valid measure of child social functioning, but there has been a lack of standardised methods. The Manchester Inventory for Playground Observation (MIPO) was developed as a practical yet rigorous assessment of this kind for 5–11 year olds. We report on the initial reliability and validity of the MIPO and its ability to distinguish social impairments within different psychopathologies.

We observed 144 clinically referred children aged 5;00–11;11 (mean 8.8) years with Externalising ($n = 44$), Internalising ($n = 19$), Autism Spectrum Disorders ($n = 39$) or Specific Language Impairment ($n = 42$), and 44 class-controls, in naturalistic playground interaction. Observers, blind to clinical diagnosis, completed the MIPO and the teacher checklist from the Social Skills Rating System (SSRS).

MIPO items showed high internal consistency (alpha = .924; all 'alpha if item deleted' values > .91), inter-observer reliability (mean $\kappa_w = .77$) and test–retest stability (over 2 weeks; mean $\kappa_w = .58$). MIPO totals showed convergence with SSRS ($n = 68$, $r_s = .78$, $p < .01$) and excellent discrimination between case and control (sensitivity = 0.75 and specificity = 0.88, AUC = .897). Externalising, Autistic Spectrum and Language Impaired groups showed distinct profiles of MIPO impairment consistent with theory:Internalising disorders less so. 65.3% of clinical cases were classified accurately for primary diagnosis.

The MIPO shows reliability and validity as a measure of children's social functioning relevant in developmental research and as a clinical tool to aid differential diagnosis and intervention planning.

1. Introduction

1.1. Social difficulties in developmental disorder and psychopathology

Most forms of developmental disorder or child psychopathology are associated with some form of difficulty in social functioning (Guralnick, Hammond, Connor, & Neville, 2006; Hartup, 2005). The pattern of these difficulties will vary with

* Corresponding author. Tel.: +44 0161 306 7941; fax: +44 0161 306 7960.
E-mail addresses: jenny.l.gibson@postrgad.manchester.ac.uk (J. Gibson), jamillahussain@doctors.org.uk (J. Hussain), samina@holsgrove.net (S. Holsgrove), catherine.adams@manchester.ac.uk (C. Adams), jonathan.green@manchester.ac.uk (J. Green).

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disorder-type, but are arguably often core to pathogenesis rather than just a functional outcome. Such recognition is hardly new (Sullivan, 1953) but contemporary theory has made the more concrete conceptualisation of 'social endophenotypes', intermediate in the pathway to illness expression and a potentially useful marker for illness or proxy target for intervention (Gottesman & Gould, 2003; Skuse et al., 2009). Endophenotypes were originally defined as having an intrinsic or heritable origin (Gottesman & Gould, 2003) but in the context of this paper we propose a broader conceptualisation, which encompasses the variety of social impairment phenotypes seen across childhood development and psychopathology, themselves reflecting different aetiological mechanisms and theories of socialisation. Recent commentary (Banaschewski, 2010) has discussed the implications of this complex variety of social behaviour problems across disorders for multi-level approaches to psychopathology. As examples, we outline below how some different theoretical models of socialisation might predict observed peer social behaviour in children with different disorders and developmental disabilities.

Behaviour genetic studies show that the distributed prosocial and reciprocal social behaviours in the population show significant heritability as well as environmental influence (Plomin, DeFries, & McClearn, 1997). In the highly heritable condition of autism, social impairments are a core characteristic of the disorder (Agam, Baulminger, & Shulman, 2003; Baron-Cohen, 2004; Constantino et al., 2004; Holmes & Willoughby, 2005; Hoekstra, Ronald, Happe, Baron-Cohen, & Plomin, 2008), with a wide range of problems in reciprocity. Observed peer behaviours in autism will in theory include aloofness and lack of engagement with others, restricted patterns of play, atypical behaviours and self-stimulation. Social impairments are also seen as functional or co-occurring difficulties within a wide range of complex neuro-development disabilities such as Tourette syndrome, ADHD, specific language impairment (SLI) and developmental coordination disorder. In this wider group the social impairment may be intrinsic or a secondary consequence of primary pathology (for instance in SLI, children's interpersonal interactive functioning may be compromised by their difficulties in using higher level language to resolve conflict and assert their interests, Horowitz, Jansson, Ljungberg, & Hedenbro, 2005).

Attachment theory emphasises the motivational and goal orientated aspects of prosocial behaviour and plots how certain patterns of early interaction with caregivers impact the child's social development and response to future social situations (Green, 2009). Primary insecure or disorganised early attachments are associated with cognitive and behavioural social impairments associated with psychopathology (Green & Goldwyn, 2002; Futh, O'Connor, Matias, Green, & Scott, 2008) as well as peer rejection (Futh et al., 2008). Here, theory would imply a set of observed peer behaviours around the presence or absence of general pro-social behaviours, and specific difficulties in care-seeking and care-giving, friendship and intimacy. Children with disorganised insecure attachments often develop conduct disorders and their peer interactions may be rather similar to others in that group. In contrast the more severe patterns of Attachment Disorder are characterised by pervasive social impairments and disinhibition—with core difficulties in social awareness, social appropriateness and reciprocal social functioning that can present at the extreme like autism spectrum disorder (O'Connor & Rutter, 2000). Observed peer social behaviour here will be rather different to conduct problems; with interpersonal awkwardness (for instance indiscriminate friendliness) rather than instrumental aggression.

Social learning theory has been key in plotting the pathways into antisocial behaviour via patterns of escalating coercive and hostile interactive behaviours between parents and children. Children who develop conduct disorders commonly have a bias towards reactivity and hostile attributions to others' actions, which leads them into conflicted and aggressive social behaviour. Their tendency to lack of inhibitory control and their lack of alternative non-aggressive strategies compound the difficulties. Observed peer interactions would in theory reflect these difficulties by being marked by high frequency of conflict or aggression, difficulty with conflict resolution or bullying, although these children may be relatively skilled in joining or sustaining group activity (Lansford, Malone, Dodge, Pettit, & Bates, 2010). By contrast, the group of children with 'unsocialised' conduct disorder would show a different pattern of peer interaction since they are usually more socially isolated with fewer opportunities for reciprocal play (Goodman & Scott, 2005). Children with severe conduct problems in the context of callous and unemotional traits may have a different socialisation pathway again (Frick, Cornell, Barry, Boden, & Dane, 2003; Jones, Happe, Gilbert, Burnett, & Viding, 2010); under-reactive and lacking in social inhibition. Little work has been done on observed peer interaction in this latter group, but theory would suggest observed episodes of cruelty or manipulation of others. Children with internalising disorders may also show social difficulties as a consequence of social withdrawal or social inhibition (Mesman, Bongers, & Koot, 2001). When this becomes pathological the child's lack of self-esteem and confidence may cause behavioural inhibition and avoidance of new challenges or fear engendering situations; affecting social interaction. Shyness is likely to be seen in observed difficulties in joining, sustaining and involvement in reciprocal play. These children are often seen as being aloof and vulnerable to bullying. They may spend more time alongside teachers and assistants (Goodman & Scott, 2005).

1.2. Naturalistic observation

The presence of such a range of discrete social difficulties across psychopathology and disability implies an equivalent importance for the assessment of social functioning in clinical diagnosis and research (Banaschewski, 2010). Accurate assessments of social impairments may help to characterise disorders and differentiate their phenotypes; they may help understand routes into psychopathology and targets for treatment. Within such assessment, the naturalistic observation of social functioning, and in particular the structured observation of peer interaction, has a number of strengths (Pellegrini, 2001). Specific peer relationship difficulties have been identified across the range of socio-emotional, behavioural and