analysis represent those in the experimental treatment group from a randomized controlled trial. Adolescents received the *Program for the Education and Enrichment of Relational Skills* (PEERS[®]), a 14-week social skills intervention demonstrated to be effective at improving social competence among teens with ASD (Laugeson, Frankel, Mogil, & Dillon, 2009). Adolescents completed the Social Anxiety Scale (SAS; La Greca, Dandes, Wick, Shaw, & Stone, 1988), the Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998), and the Short Mood and Feelings Questionnaire (SMFQ; Sharp, Goodyer, & Croudace, 2006) at pre-test, post-test, and six months following post-test. Results: Participants demonstrated a significant decrease in their self-report of FNE (SAS-FNE) from pre-test to six-month follow up ($F(2, 78) = 7.83$, $p = .001$, partial $\eta^2 = .167$). Furthermore, scores on the SAS-FNE were significantly correlated with lower scores on the SIAS ($r(38) = .36$, $p = .022$) and SMFQ ($r(20) = -.538$, $p = .010$) at six-months follow up.

Conclusions: Results suggest that, with the improvement of social skills, adolescents with ASD demonstrate significant declines in symptoms of FNE. These declines are demonstrated, not only from pre- to post-intervention, but also six-months after the treatment period ends. In addition, these improvements predicted lower levels of overall social anxiety and decreased depressive symptoms at six-month follow up. This is consistent with existing literature on social anxiety and ASD that describes a cycle of fear and avoidance that results in a lack of development of social skills which only perpetuates fear and avoidance of social stimuli (Bellini, 2006). This is the first study, to our knowledge, to provide empirical support for the development and maintenance of social skills as functioning to break this cycle and promote lower social anxiety and depressive symptoms among adolescents with ASD.

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227 **110.227** The Impact of Transition from Primary to Secondary School on the Psychosocial Adjustment, Sense of School Membership and Academic Progress of Children with Autism Spectrum Disorders

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Background: The experience of education has a profound influence on the lives of children, from academic progress through to social understanding, ultimately informing the way in which adult life is negotiated. Secondary school requires a high degree of self-organisation among pupils as they move from the top of the social hierarchy at primary school to the bottom of a more complex one. Despite this, research indicates that deleterious effects are transitory for most children. However, for children with autism spectrum disorders (ASD) the challenge of transition can be significant, and the residual difficulties can be profound and long-lasting. The child-centred environment of a primary school can be difficult to replicate in a secondary school where children have multiple subject staff, whose awareness and understanding of ASD may be limited. In adjusting to secondary school, children are expected to form new social relationships in unfamiliar settings and adapt to changes in routine, both of which are major challenges for pupils with ASD. Despite this apparent vulnerability, there are very few quantitative studies in this area, none of which explore the post-transition trajectory using multiple timepoints. Developing knowledge and understanding of such issues is a crucial step towards designing effective interventions.

Objectives: To explore the effects of the primary to secondary school transition for young people with ASD compared to their typically developing peers (TD), with particular reference to psychosocial adjustment, sense of school membership and academic progress.

Methods: This is a longitudinal study approaching completion. There are four points of data collection (T1-4):

- T1 = June/July 2014 (Year 6, final term of primary school*).
- T2 = November/December 2014 (Year 7 term 1, first year of secondary school)
- T3 = June/July 2015 (Year 7 term 3, first year of secondary school)
- T4 = November/December 2015 (Year 8 term 1, second year of secondary school)

*In England the school year contains three terms and starts on September 1st.

Students were aged between 10 years 9 months and 11 years 9 months at T1. At each time point, students in the ASD ($N = 38$) and TD ($N = 22$) groups, their parents and teachers complete a quality of life questionnaire, with an additional questionnaire for the students on school membership. Attainment in Mathematics/English and attendance are also recorded at each time point. Parents of pupils with ASD completed the Social Responsiveness Scale (2nd ed.) at T1 to permit exploration of within group differences according to severity of autistic symptoms. Background data were collected on each student including gender, support provided in school and educational placement. Analysis will include descriptive statistics and inferential statistics to assess change over time within and between groups and according to respondent.

Results: Longitudinal findings exploring within and between group differences from T1 to T4 will be presented for the first time at the conference, following the final wave of data collection in November/December 2015.

Conclusions: Findings will be discussed in relation to the existing broader literature, along with a consideration of the implications for policy and practice.

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228 **110.228** The Level of Intelligence Modulates the Recognition of Emotional Point-Light Displays in Children with Autism Spectrum Disorder (ASD): A Comparison Between High Functioning and Low Functioning ASD

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Background:

The moving human body is a nuance-rich cue of others' attitude: patients with Autism Spectrum Disorder (ASD) often fail to figure out its meaning and show anomalous pattern of brain activation during motion perception. Besides, their ability to recognize emotion is generally impaired, especially when conveyed by biological elements – motion included. Point Light displays (PLD) are reliable tools to assess the ability to identify the emotion shown through a moving human body. Evidence in the literature mostly involves high-functioning (HF) ASD samples and there is a lack of information on low-functioning (LF) ASD population's abilities. It is still debated if the ASD's impairment in social interaction is related to the processing of biological motion (BM), besides it is unclear the relation between emotion recognition and IQ level.

Objectives:

We explored the ability to understand BM with different emotional valence in children with ASD. We enquired if their impairment was specific for the recognition of emotions or widespread to BM in general. Moreover, we explored the role played by the IQ level in this ability.

Methods:

24 typically-developing (TD) children, 23 children with HF ASD and 17 with LF ASD took part in our study. Respectively, the mean age and IQ of each group were 9.05, 111; 9.5,100; 12.2,49. After each PLD clip, we asked the children to categorize the emotion (fear, happiness, neutral) by pressing the corresponding key. Emotional categories were presented coupled in three separated blocks. The dichotomous choice allowed also LF ASD children to perform the task. Accuracy and response times (RTs) were measured.

Results:

Total accuracy was significantly different according with the functioning: TD children outperformed children with ASD, children with HF ASD showed higher levels of accuracy than children with LF ASD. A positive correlation between accuracy and IQ was found in all the groups, though the generalized linear model which takes IQ into account explained accuracy only in the two ASD groups.

Considering RTs relative to recognized stimuli, TD were significantly faster than ASD; no differences emerged between HF and LF ASD groups. IQ resulted negatively correlated with rapidity and significantly predicted it in the generalized linear model for all the three groups.

Comparing performances between the three emotional categories: TD were significantly more accurate and faster in recognizing of all the three classes of stimuli, while no differences between ASD groups emerged.

Conclusions:

Our findings suggests that the ability to recognize the emotional meaning of BM is impaired in ASD children, independently of its emotional content.

Cognitive level seems pivotal for recognizing affective biological motion in children with ASD. Although IQ doesn't seems to impact the accuracy of this mechanism when it works properly, it is important when the mechanism is impaired. A more efficient cognitive substrate might mediate the acquisition of compensatory mechanisms, which help ASD children to better understand the human gestures. Besides, for all participants IQ is important for promptly recognize the stimuli. Therefore, the IQ level seems to mediate the efficiency of the biological motion processing, boosting its rapidity.

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229 **110.229** The Preschool Imitation and Praxis Scale (PIPS): Measure Standardization and Autism Spectrum Disorder (ASD)-Specific Imitation Profiles in High-Functioning Preschoolers

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Background:

Although imitation impairments are often reported in children with ASD, previous work has not yet determined whether there is a profile of preserved and impaired imitative abilities that is specific to ASD. Insight into this profile has the potential to make a significant difference in our ability to facilitate social learning in this population.

Different ways of copying others' actions often serve different functions and reflect distinct underlying processes; for instance copying to learn about objects (i.e., procedural imitation) versus copying to be social (i.e., bodily imitation). Studies of imitation have also compared meaningful and meaningless actions. The factor of meaning is almost inevitably confounded with familiarity because such actions are likely to have been performed before. Meaningless actions are often novel. Another dimension explored in a

number of studies concerns the temporal complexity of the demonstrated actions (i.e., singular versus sequential actions) (Vivanti & Hamilton, 2014).

The general pattern emerging from the available literature is that children with ASD imitate actions on objects better than actions that do not involve objects, have more difficulties in the imitation of meaningless than meaningful gestures, and find it more difficult to imitate sequences of actions than singular actions (Vivanti & Hamilton, 2014). However, major drawbacks of former studies are that different types of actions are not investigated at once in a single study and that they have looked at the accuracy of imitation performance without controlling for age and developmental level. Given these gaps it is impossible to come to a firm conclusion about an ASD-specific imitation profile.

Objectives:

The present study aims to report the standardization of the Preschool Imitation and Praxis Scale (PIPS) and to apply this measure to examine the imitation profile of high-functioning preschoolers with an ASD.

Methods:

To construct the PIPS action types with different effects (salient environmental in procedural, internal in bodily imitation), representational levels (meaningful, meaningless), temporal complexities (singular, sequential) and visual monitoring possibilities (transparent, opaque) were chosen to tap the full range of possible imitation mechanisms. Performances on the 30 imitation tasks are scored on a 3 to 5 point scale, which evaluates the spatiotemporal resemblance between the modelled and copied actions. 654 typically developing children (TDC) and 33 children with ASD between 23 and 53 months of age (performance IQ 85-113) participated in the standardization study.

Results:

PIPS scale has produced high internal consistency and demonstrates acceptable intra- and interrater and test-retest reliability. Bodily and procedural imitation age-equivalents were derived from PIPS scores of 654 TDC between 12 and 59 months of age (Vanvuchelen, et al., 2011a,b,c). Further details on the results will be presented at the meeting.

Conclusions:

The PIPS is a much-needed and comprehensive measure of imitation skills and abilities, which has been standardized on a population of TDC. The application of this measure to young, high-functioning children with ASD in the current study is a critical first step towards a detailed understanding the unique profile of imitation skills in this population, which has been elusive to date.

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230 **110.230** The Recognition of Self-Conscious Emotions from Situational Contexts in Children with and without Autism Spectrum Disorders

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Background: The ability to understand and reflect upon one's own emotions and the emotions of others is central to emotional competence. Self-conscious emotions, in particular, are thought to facilitate our social interactions and relationships by motivating us to adhere to social norms (guilt) as well as personal standards (pride).

Objectives: Despite the importance of self-conscious emotions, almost all studies have explored basic emotion processing in children with ASD (see Uljarevic & Hamiliton, 2013). Moreover, recognition of emotions is often assessed through facial recognition tasks, with emotions presented at full intensity. The purpose of this research was to assess the recognition of basic and self-conscious emotions from situational contexts that varied in intensity. Relations between emotion recognition, ASD symptomatology, and Theory of Mind (ToM) were also explored.

Methods: Twenty-three children with ASD and 25 neurotypical (NT) children were tested. No significant differences between groups were found for age, male:female ratio, or non-verbal reasoning (Table 1). Children were given a situational emotional test that provided 12 emotional situations for basic (happy, fear, sad) and self-conscious (pride, embarrassment, guilt) emotions. An intense and a less intense version of each emotion were presented. Children were asked to label the emotions (free, cued) and rate the intensity and duration of the emotions (1-5 scale).

Results: Mixed-model ANOVAs and follow-up tests with Bonferroni correction were conducted. In the *cued response* condition, NT children were significantly better than children with ASD at recognizing intense examples of pride, embarrassment and guilt, and non-intense examples of pride and embarrassment (Table 2). NT children were better at recognizing fear from intense and non-intense situations. In the *free response* condition, NT children were better at recognizing intense examples of embarrassment and guilt, and non-intense examples of embarrassment. All children were good at labeling fear in the intense condition (Table 2). No significant group differences were seen in the recognition of happy and sad emotions. All children rated the intensity and duration of "intense" emotions as greater than that for "less intense" emotions. Children with ASD rated situations eliciting pride and embarrassment as being more intense and longer lasting than NT children (Table 2). Significant relations were found between ToM scores and the recognition of emotions in children with ASD, but not in NT children. No other significant relations were found.

Conclusions: The present study shows that children with ASD are generally less accurate than NT children in their recognition of self-conscious emotions from situational contexts. This is important given the significance of self-conscious emotions in terms of emotional competence. These results conflict with a study (Tracy et al., 2011) showing that children with ASD are as accurate as NT children at recognizing pride from facial expressions—suggesting that the measurement of emotions (facial vs. situational) is important. Consistent with facial recognition studies (Tell et al., 2014), some evidence was found that children with ASD were generally less accurate than NT children at recognizing fear. ToM abilities appear to underlie emotion recognition in children with ASD, but not in NT children.