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**NATURALISMES ET RATIONALITÉS EN SITUATION.
RAISON ET NATURE ENTRE XVIII^e ET XXI^e SIÈCLE**

a cura di Anselmo Aportone e Paolo Quintili

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A COGNITIVE APPROACH TO THE PATHOLOGIES OF NORMATIVITY

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1. Introduction

What is normativity? Is it socially determined or cognitively constrained? In this paper, we aim to provide some answers to these questions by considering the pathologies of both social and moral normativity.

In the first part of the paper social normativity is discussed, focusing on the effects of social stereotypes on listeners' interpretation of figurative language. Some studies have shown that adults with autism spectrum disorders are sensitive to stereotypes on genre, race and age. Is social stereotypes processing indeed intact in autism? Could it be resorted to for communicative purposes? Recent findings suggest that individuals with high functioning autism have difficulties integrating stereotypical knowledge with information about the speaker's intention.

In the second part of the paper, moral normativity is discussed in relation to the ability of identifying moral, conventional and disgust transgressions. Recent results show that individuals with high functioning autism have difficulties providing appropriate moral justifications and evaluating the seriousness of transgressions. In particular, they fail to use relevant information about the agent's intention and the affective impact of the action outcome in conscious moral reasoning.

Overall, our studies show that individuals with autism spectrum disorders have difficulties integrating different types of information in social reasoning. In particular, we argue that in both cases of social and moral normativity, individuals with high functioning autism

fail to integrate information coming from the socially determined component and from the cognitively constrained component in rule-following behaviour.

2. Social normativity and stereotypes

Social norms and conventions can be interpreted as a decisional shortcut that allows us to make sense of our social world and to predict others' behaviour in social contexts. Human beings «possess a complex knowledge structure that affords interpretations of others' behaviour in terms of mental states such as belief and desire»¹. This complex knowledge structure enables us to represent the social environment and to build some rule-following behaviour tacitly shared by the members of our social community.

Contextual information is processed into social categories in order to both reduce the quantity of information and extend our knowledge of social world by capturing similarities among their members. These taxonomies become social stereotypes which provide a basis for predicting the behaviour of others and interpreting their utterances². Stereotypes are indeed a specific type of expectancy and influence information processing by focusing attention on and facilitating the processing of information consistent with the stereotype or inhibiting the processing of inconsistent information³. These expectancies can be used as a guide to behaviour in social contexts, enabling us to anticipate how others could act in order to respond appropriately.

A social stereotype is indeed a “simplified schema” or a well-learned set of associations which works as an energy-saving strategy

¹ Hirshfeld L.A., *Who Needs a Theory of Mind?* In: Viale R., Andler D. & Hirshfeld L.A., (eds), *Biological and Cultural Bases of Human Inference*, London: Lawrence Erlbaum Associates, 2006, pp. 131-160, p. 131.

² Cf. Dovidio J.F., *Stereotyping*. In: Wilson R. & Keil F. (eds.), *The MIT Encyclopedia of Cognitive Science*, The MIT Press, Cambridge: MA, 2001, pp. 804-806.

³ Cf. Olson, J. M., Roese, N. J., & Zanna, M. P., *Expectancies*. In E. T. Higgins & A. Kruglanski (eds.), *Social psychology: Handbook of basic principles*, New York: Guilford, 1996, pp. 211–238.

to guide our interpretation of social world. One important function of social schemas and related forms of knowledge structures is to fill in missing information about others' personality and to help metarepresenting others' intentions⁴. According to Hirschfeld, social stereotypes are part of the folk theory known as "Naïve Sociology", the spontaneous human mechanism for understanding of social groups and social relations, active from an early stage of children development. In other words, "Naïve Sociology" is a natural way to make sense of⁵ our own intuitions about the social world around us. As Devine pointed out, stereotypes information processing could be automatic (mostly involuntary) or controlled (mostly voluntary)⁶. Automatic processes are unintentional responses to a certain kind of social stimuli which activate the stereotype and cannot be ignored. On the contrary, controlled processes are intentional and require the individual's active attention. Being more flexible than automatic processes, controlled processes are particularly useful to begin new behaviours.

Social impairments are part of the essential diagnostic criteria used to define autism spectrum disorders (ASDs), often related to a serious deficit of the capacity for mentalization⁷. Despite the severe social impairments, recent findings have shown that adults with ASDs are sensitive to stereotypes on genre, race and age⁸, they have preserved abilities in attributing social stereotypes to

⁴ Cf. Wyer R.S., Lee Budesheim T., Lambert A.J. & Swan S., *Person Memory and Judgment: Pragmatic Influences on Impressions Formed in a Social Context*, «Journal of Personality and Social Psychology», 66:2, 1994, pp. 254-267; Srull T.K. & Wyer R.S., *Person Memory and Judgment*, «Psychological Review», 96:1, 1989, pp. 58-83; Krueger J. & Rothbart M., *Use of Categorical and Individuating Information in Making Inferences About Personality*, «Journal of Personality and Social Psychology», 55:2, 1988, pp. 187-195.

⁵ Cf. Hirschfeld L., On a Folk Theory of Society: Children, Evolution, and Mental Representations of Social Groups, «Personality and Social Psychology Review», 5:2, 2001, pp. 107-117.

⁶ Cf. Devine P.G., Stereotypes and prejudice: Their automatic and controlled components, «Journal of Personality and Social Psychology», 56, 1989, pp. 5-18.

⁷ Cf. Baron-Cohen S., Leslie A.M. & Frith U., Does the autistic child have a "theory of mind"?, «Cognition», 21:1, 1985, pp. 37-46.

⁸ Cf. Hamilton A. & Krendl A.C., Social Cognition: Overturning Stereotypes of and with Autism, «Current Biology», 17:16, 2007, R641-R642.

people's faces⁹ and that children with autism perform as well as children with typical development in using stereotypes to predict the outcomes of new contexts¹⁰. If social stereotypes are merely an extension of mindreading capacity, autistic children should not be able to use them, facing difficulties similar to those of mental states attribution. A study on attribution of trustworthiness, attractiveness, socioeconomic status and age from bodies and faces of people demonstrated that individuals with Asperger Syndrome (AS) have a preserved ability to use stereotypes and argued in favour of Hirschfeld's hypothesis of a domain of Naïve Sociology as separate from Naïve Psychology¹¹. White et al. also showed that only those autistic children able to pass theory of mind tasks were able to judge people on the basis of their desires rather than of their stereotypical belonging to a social group. Hamilton and Krendl concluded that deficits of theory of mind do not invalidate the capacity for Naïve Sociology¹². On the contrary, even though mindreading does not seem to be a means to construct social stereotypes, it could be considered as a means to soften them.

3. Figurative language and social stereotypes in autism

Studies dedicated to social stereotypical categorization and non-literal language comprehension showed that social stereotypes, like speaker's gender, ethnic group and occupation, are important cues to figurative language interpretation¹³. For instance, studies on the on-line role of gender stereotypes (operationalized by gender-specific names) showed that this kind of social cue comes into play very early in the process of sarcasm comprehension and influences

⁹ Cf. White S., Hill E., Winston J. & Frith U., An islet of social ability in Asperger Syndrome: Judging social attributes from faces, «Brain and Cognition», 61: 1, 2006, pp. 69-77.

¹⁰ Cf. Hirschfeld L., Bartmess E., White S. & Frith U., Can autistic children predict behavior by social stereotypes?, «Current Biology», 17:12, 2007, R451-R452.

¹¹ Cf. White S., Hill E., Winston J. & Frith U., An islet of social ability in Asperger Syndrome: Judging social attributes from faces, cit.

¹² Cf. Hamilton A. & Krendl A.C., Social Cognition: Overturning Stereotypes of and with Autism, cit.

¹³ Cf. Colston H.L. & Katz A. (eds.), Figurative Language Comprehension: Social and Cultural Influences, Hillsdale, NJ: Erlbaum, 2005.

its interpretation¹⁴: sarcasm seems to be more likely to be associated with men rather than women¹⁵. Similar results have been found for ethnic¹⁶ and occupation stereotypes¹⁷. Indeed, speaker's occupation has been shown to influence not only the interpretation of figurative meaning in general¹⁸, but also the interpretation of ironic intention in particular¹⁹.

Katz, Blasko and Kazmerski forcefully showed that the emergence of sarcasm is produced by a character in the context expected to make a statement incongruent with events in the story²⁰. Multiple sources of information are conjointly exploited when a listener attempts to understand an ironic utterance and also social stereotype contributes to the facilitation effect, as the response times testify:

We have now demonstrated that the information that this statement is made by a comedian (rather than a priest, for instance) further predisposes people to a sarcastic interpretation while they read it. The evidence is based on a convergence of reading-time data with ratings of the subjective sense produced by reading the text. With respect to reading time, we find that when the discourse context is congruent with a sarcastic interpreta-

¹⁴ Cf. Garnham A., Oakhill J. & Reynolds D., Are inferences from stereotyped role names to characters' gender made elaboratively?, «Memory & Cognition», 30, 2002, pp. 439-446; Colston H.L. & Katz A.N. (eds.), *Figurative language comprehension: Social and cultural influences*. Lawrence Erlbaum Associates, Mahwah: NJ, 2005.

¹⁵ Cf. Colston H.L. & Lee S.Y., *Gender Differences in Verbal Irony Use*, «Metaphor and Symbol», 19:4, 2004, pp. 289-306.

¹⁶ Cf. Heredia R.R. & Blumentritt T.L., On-line Processing of Social Stereotypes During Spoken Language Comprehension, «Experimental Psychology», 49:3, 2002, pp. 208-221.

¹⁷ Cf. Pexman P.M. & Olineck K.M., Understanding irony: How Do Stereotypes Cue Speaker Intent?, «Journal of language and social psychology», 21:3, 2002, pp. 245-274.

¹⁸ Cf. Holtgraves T.M., *Communication in context: The effects of speaker status on the comprehension of indirect requests*, «Journal of Experimental Psychology: Learning, Memory and Cognition», 20, 1994, pp. 1205-1218.

¹⁹ Cf. Katz A.N. Lee C.J., *The role of authorial intent in determining verbal irony and metaphor*, «Metaphor and Symbolic Activity», 8, 1993, pp. 257-279.

²⁰ Cf. Katz A.N., Blasko D.G. & Kazmerski V.A., *Saying What You Don't Mean: Social Influences on Sarcastic Language Processing*, «Current Directions in Psychological Science», 13, 2004, pp. 186-189.

tion, the target sentence is read more rapidly if it is made by a person from a high-irony occupation rather than a person from a low-irony occupation²¹.

These results have been correlated with speakers' tendencies to be more humorous, to mock or criticize, and to be less sincere. Irony could also seem a more polite and indirect way to express the speaker's own thought and to comment on the failure of an expectation²².

Unfortunately, not much research has been done on the interaction between social stereotypes and understanding of non-literal speech in autism spectrum disorders. To fill this gap in research, we investigated the effect of occupation stereotypes in irony understanding in a group of adults with high functioning autism (HFA) or Asperger Syndrome (AS) and a comparison group of adults with typical development. High-functioning autism and Asperger Syndrome are widely acknowledged to be variants of autism spectrum disorders²³, which share social and communicative impairments but are characterized by the absence of mental retardation. Moreover, differently from individuals with low-functioning autism, adults with HFA and AS do pass a first- and second-order false belief test²⁴ and could possess a second-order theory of mind²⁵. Anyway, according to other studies whenever they provide correct mental

²¹ Katz A.N., Blasko D.G. & Kazmerski V.A., *Saying What You Don't Mean: Social Influences on Sarcastic Language Processing*, cit., p. 187.

²² Cf. Sperber D. & Wilson D., *Irony and the use-mention distinction*. In P. Cole (ed.) *Radical Pragmatics*, New York: Academic Press, 1981, pp. 295-318.

²³ Cf. American Psychiatry Association, *Diagnostic and statistical manual of mental disorders* (4th ed.). DSM-IV-TR (Text Revision), Washington, DC: American Psychiatry Association, 2000; World Health Organisation, *International statistical classification and related health problems: Tenth revision*, Geneva, 2004.

²⁴ Cf. Abell F., Happé F. & Frith U. (2000). *Do triangles play tricks? Attribution of mental states to animated shapes in normal and abnormal development*, «Journal of Cognitive Development», 15, 2000, pp. 1-20.

²⁵ Cf. Bowler D.M., "Theory of mind" in *Asperger's syndrome*, «Journal of Child Psychology and Psychiatry», 33, 1992, pp. 877-893; Ozonoff S., Rogers, S. J. & Pennington, B.F., *Asperger's syndrome evidence of an empirical distinction from high-functioning autism*, «Journal of Child Psychology and Psychiatry», 32, 1991, pp. 1107-1122.

state answers, they failed in giving a contextually-appropriate mental state answers²⁶. According to other studies which focus on more fine-grained second order tasks²⁷, individuals with HFA and AS show mindreading deficits in social and emotional tasks far subtler than previously expected.

The study on the effect of occupation stereotypes in irony understanding in individuals with HFA and AS used a series of verbally presented stories containing ironic or literal utterances produced by either a person having an occupation that is perceived as more prone to use sarcasm, a “sarcastic” occupation, or a person having a “non sarcastic” occupation. The results show that both groups exhibit a similar performance in recognizing ironic utterances and an overall similar image of irony: ironic statements are generally perceived as more mocking, but also more polite and positive than literal statements. However, when a character in the story has an occupation stereotypically considered as sarcastic, comprehension of ironic utterances improved in terms of both accuracy and latency, only in the comparison group. These results suggest that individuals with high functioning autism have difficulties integrating stereotypical knowledge with information about the ironic intention.

Subjects with HFA and AS fail to integrate social stereotypical knowledge when it is implicit in the context, whereas comparison subjects seem to use it in a natural, unconscious and automatic way. So, at first sight, the present findings point to difficulties in spontaneous acquisition and use of stereotype knowledge. However, several studies have underlined that the ability to acquire different types of social stereotypes is preserved in individuals with ASDs. Using a

²⁶ Cf. Baron-Cohen S., Jolliffe T., Mortimore C. & Robertson M., *Another advanced test of theory of mind: evidence from very high functioning adults with autism or Asperger Syndrome*, «Journal of Child Psychology and Psychiatry», 38, 1997, pp. 813-822.

²⁷ Cf. Baron-Cohen S., Wheelwright S., Hill J., Raste Y. and Plumb I., *The “Reading the mind in the eyes” test revised version: A study with normal adults, and adults with Asperger Syndrome or High-Functioning autism*, «Journal of Child Psychology and Psychiatry», 42:2, 2001, pp. 241-251; Zalla T., Stopin A., Ahade S., Sav A-M. & Leboyer M., *Faux pas detection and intentional action in Asperger Syndrome. A replication on a French sample*, «Journal of Autism and Developmental Disorders», 39, 2009, pp. 373-382.

task of attribution of trustworthiness, attractiveness, socioeconomic status and age, White and collaborators reported a preserved ability to explicitly attribute social stereotypes in participants with HFA and AS²⁸. Similarly, Hirschfeld et al. showed intact reasoning about social groups in children with autism, since they performed like children with typical development in using race and gender stereotypes to predict behaviour in new contexts²⁹. Hence, it could be proposed two distinct special-purpose mechanisms for processing social knowledge: one for information about social groups (“Naïve Sociology”), which is preserved in ASDs, and the other for mind-reading (“Naïve Psychology”), which is impaired in ASDs.

Noting that linguistic communication is the more differentiated kind of action in the set of intentional behaviour and that there are various levels of metarepresentations involved in inferential comprehension, Sperber & Wilson have proposed the hypothesis of a specialised sub-mechanism of the overall “Naïve Psychology” module, specifically dedicated to pragmatic-inferential processes³⁰. Therefore, based on previous evidence, the present findings could be taken to mean that difficulties in individuals with ASDs predominantly rely on failure to integrate information from this distinct domain-specific social sub-system. One might then speculate that such impairment might selectively affect pragmatic-inferential reasoning. In accordance with this view, failure to integrate information from “Naïve Sociology” and “Naïve Psychology” modules might be restricted to pragmatic-inferential processes in people with ASDs.

In conclusion, these recent findings confirm that stereotype information is automatically activated during psycholinguistic process involved in irony detection in typically developed people. It also reveals that this information is combined with pragmatic and social processes. In particular, stereotype knowledge exerts its influence on subjects’ expectancies by increasing irony detection and by af-

²⁸ Cf. White S., Hill E., Winston J. & Frith U., *An islet of social ability in Asperger Syndrome: Judging social attributes from faces*, cit.

²⁹ Cf. Hirschfeld L., Bartmess E., White S. & Frith U., *Can autistic children predict behavior by social stereotypes?*, cit.

³⁰ Cf. Sperber D. & Wilson D., *Pragmatics, Modularity and Mind-reading*, «Mind and Language», 17, 2002, pp. 3-23.

fecting its social traits in an implicit and automatic way. Interestingly, people with HFA/AS appear to possess a preserved ability to understand irony and its main social functions, but they failed to integrate information coming from these two distinct domains of social knowledge. While this information automatically activates stereotype knowledge, these representations are not strong enough to enhance understanding of the speaker's attitudinal and communicative features in individuals with ASDs; it would be then available for pragmatic reasoning only when activated through explicit and voluntary processes.

4. Intentional action and moral judgement

The concept of intentional action plays a central role in social cognition. The ability to understand another person's action from that person's intentions and desires plays an important role in moral judgments. People normally distinguish between actions that are performed intentionally and those that are performed unintentionally and this distinction plays a crucial role in social understanding and moral judgment. For example, wrong intentional actions are judged to be worse than similar unintentional ones³¹ and, similarly, attempted but failed harmful acts are judged to be more morally blameworthy than accidentally ones³².

Developmental studies have shown that children's moral reasoning was positively correlated with their false-belief understanding, suggesting a connection between children's theory of mind (ToM, i.e. the ability to attribute mental states to oneself and to others) and moral judgment³³. Indeed, moral judgments require them to value the actual outcomes against considerations of the

³¹ Cf. Lagnado D.A. & Shannon S., Judgments of cause and blame: The effects of intentionality and foreseeability, «Cognition», 108, 2008, pp. 754-770.

³² Cf. Young L. & Saxe R, Innocent intentions: A correlation between forgiveness for accidental harm and neural activity, «Neuropsychologia», 47, 2009, pp. 2065-2072.

³³ Cf. Baird J.A. & Astington J.W., The role of mental state understanding in the development of moral cognition and moral action, «New Directions for Child and Adolescent Development», 103, 2004, pp. 37-49.

agent's desires, beliefs and intention, which rely upon ToM reasoning. It has been recently argued that folk psychology and folk morality both have an impact on people's intuitions about how to apply the concept of intentional action³⁴. While people usually believed that whether an action is performed intentionally or unintentionally influences our moral judgment of that action, there are circumstances in which an action is more likely to be thought of as intentional when that action is morally bad than when it is morally good. In other words, the application of the folk concept of "intentional action" does not simply reflect beliefs about the agent's psychological states, but is vice versa affected by the moral valence of the agent's behaviour.

In individuals with typical development, moral cognition has been primarily studied by assessing the ability to distinguish moral from conventional transgressions. Cross cultural studies have shown that children with typical development distinguish between these two types of transgression along a number of dimensions³⁵. Moral transgressions are usually considered to be more serious, less permissible and less authority-dependent than conventional ones. Furthermore, the explanation of why moral transgressions are wrong tend to refer to fairness and harm to victims, while in the case of conventional transgressions tend to refer to the violation of social rules. The distinction between moral and conventional rules also reflects differences in the participants' affective responses: transgressions of conventional rules rarely cause distress to persons, while moral transgressions are likely to produce a negative emotional impact³⁶.

³⁴ Cf. Knobe J., Intentional action and side effects in ordinary language, «Analysis», 63, 2003, pp. 190-193; Knobe J., Intentional action in folk psychology: An experimental investigation, «Philosophical Psychology», 16, 2003, pp. 309-324; Knobe J., Intention, intentional action and moral considerations, «Analysis», 64, 2004, pp. 181-187.

³⁵ For reviews, see Nucci L., *Education in the moral domain*, Cambridge: Cambridge University Press, 2001; Smetana J. (1993). *Understanding of social rules*. In M. Bennett (ed.), *The development of social cognition: The child as psychologist*, New York: Guilford Press, pp. 111-141.

³⁶ Cf. Turiel, E. (1983). *The development of social knowledge: Morality and convention*. Cambridge: Cambridge University Press.

Research on moral cognition in subjects with typical development has focused on two perspectives: the first perspective claims that moral judgment is the product of conscious reasoning on the basis of explicit abstract principles³⁷; the second one relies on the assumption that moral judgment is the product of intuitive, automatic, and unconscious affective responses³⁸. This second perspective particularly focused attention on the role of empathy, which can be considered as a complex process, made up of two relatively independent components: an affective, phylogenetically early, emotional contagion system and a more advanced, cognitive perspective-taking system³⁹. While affective empathy refers to the capacity to experience emotional reactions to the observed experiences of others by automatically activating one's own representations for the related emotional states, the cognitive notion of empathy refers to the ability to engage in the effortful conscious cognitive process of adopting another's psychological point of view and infer their mental states⁴⁰. In other terms, cognitive empathy involves processes such as perspective-taking and ToM⁴¹.

With respect to empathy dysfunction, the inability to share emotional states with others has been described as one of the most strik-

³⁷ Cf. Piaget J., *The moral judgment of the child*, New York: Free Press, 1965/1932; Kohlberg L., *Essays on moral development: The philosophy of moral development* (Vol. 1). New York: Harper Row, 1981.

³⁸ Cf. Haidt J., *The emotional dog and its rational tail: A social intuitionist approach to moral judgment*, «Psychological Review», 108, 2001, pp. 814-834.

³⁹ Cf. De Waal, F. B. (2008). *Putting the altruism back into altruism: The evolution of empathy*, «Annual Review of Psychology», 59, pp. 279-300.

⁴⁰ Cf. Davis, M. H., *Empathy: A social psychological approach*. Madison, WI: Brown & Benchmark, 1994; Davis, M. H. (1983). *Measuring individual differences in empathy: Evidence for a multidimensional approach*. «Journal of Personality and Social Psychology», 44, 113-126.

⁴¹ Cf. Blair, R. J. R. *Responding to the emotions of others: Dissociating forms of empathy through the study of typical and psychiatric populations*, «Consciousness and Cognition», 14, 2005, pp. 698-718; Shamay-Tsoory, S. G., Aharon-Peretz, J., & Perry, D., *Two systems for empathy: A double dissociation between emotional and cognitive empathy in inferior frontal gyrus versus ventromedial prefrontal lesions*. «Brain», 132, 2009, pp. 617-627; Singer, T. *The neuronal basis and ontogeny of empathy and mind reading, review of literature and implications for future research*. «Neuroscience and Biobehavioral Reviews», 30, 2006, pp. 855-863.

ing clinical features of individuals with ASDs⁴². Baron-Cohen and collaborators have shown that difficulties in understanding others' affective states arise in people with ASDs when the appreciation of the emotion requires the representation of others' beliefs, such as surprise or embarrassment, but not for emotions generated by factual events⁴³. As reported in the previous sections, impairments in mentalization are indeed thought to be the core features of autism. However, while an extensive literature has assessed ToM abilities in individuals with ASDs, relatively few studies have explored their competence in moral reasoning and the interconnection between affective and cognitive empathy. A study reported that young participants with ASDs showed difficulties distinguishing the unintended from the intended outcomes of their own actions as compared to a comparison group, when the unintended actions were positively valued. Compared with children with similar intellectual abilities, young children with ASDs tended to find it difficult to understand that desirable outcomes might be unintended⁴⁴.

Conversely, some moral competencies in individuals with ASDs are relatively preserved. Grant and collaborators showed that children with high functioning autism can distinguish between damage to property and to persons, between social-conventional and moral rules, and judged damage to persons as more severe than damage to property although their justifications had fewer references to the

⁴² Cf. Kanner L., *Autistic disturbances of affective contact*, «Nervous Child», 2, 1943, pp. 217-250.

⁴³ Cf. Baron-Cohen, S. *Do people with autism understand what causes emotion?* «Child Development», 62, 1991, pp. 385–395; Baron-Cohen, S., Spitz, A., & Cross, P. *Can children with autism recognize surprise?* «Cognition and Emotion», 7, 1993, pp. 507–551. However, Castelli showed that children with autism were as able as controls to recognize the six basic emotions from facial expressions (anger, fear, disgust, happiness, sadness, surprise). The author suggested that individuals with autism might use compensatory strategies to bypass their deficit in emotion recognition. (Cf. Castelli, F. (2005). *Understanding emotions from standardized facial expressions in autism and normal development*. «Autism», 9:4, 2005, pp. 428–449).

⁴⁴ Cf. Phillips, W., Baron-Cohen, S., & Rutter, M. *Understanding intention in normal development and in autism*. «British Journal of Developmental Psychology», 16, 1998, pp. 337–348.

agent's intention⁴⁵. Similarly, Blair showed that in spite of their impairments in ToM, children with ASDs are able to draw the distinction between moral and conventional transgressions⁴⁶. Recently, Leslie and collaborators concluded that basic moral judgment is preserved in autism and that it may function somewhat independently of ToM⁴⁷.

5. Moral normativity in autism

Using an advanced ToM test, the Faux Pas recognition task⁴⁸, Zalla and collaborators showed that individuals with HFA and AS have difficulty distinguishing intentional from non-intentional behaviours⁴⁹. A faux pas is a particular case of a non-intentional action, since it occurs when a speaker says something that might hurt or be unpleasant to the listener, although the speaker never intended it to do so. Interestingly, they over-attributed intentions to the agents unintentionally committing a blunder (e.g. the faux pas) and frequently provided explanations in terms of malevolence. For example, they judged that the speaker committing the faux pas intended to humiliate and to offend the listener. In some cases, negative judgments about the character were presented in terms of personality traits. These findings revealed that while individuals with HFA and AS were able to detect social rule violations and to pro-

⁴⁵ Cf. Grant, C. M., Boucher, J., Riggs, K. J., & Grayson, A. *Moral understanding in children with autism*. «Autism», 9, 2005, pp. 317–331.

⁴⁶ Cf. Blair, R. J. R.. *Brief report: Morality in the autistic child*. *Journal of Autism and Developmental Disorders*, 26, 1996, pp. 571–579.

⁴⁷ Cf. Leslie, A. M., Mallon, R., & Dicorcia, J. A. *Transgressors, victims, and cry babies: Is basic moral judgment spared in autism?* «Social Neuroscience», 1, 2006, pp. 270–283.

⁴⁸ Cf. Baron-Cohen, S., O'Riordan, M., Stone V., Jones R., & Plaisted K., *Recognition of faux pas by normally developing children and children with Asperger syndrome or high-functioning autism*. «Journal of Autism and Developmental Disorders», 29:5, 1999, pp. 407–418.

⁴⁹ Cf. Zalla, T., Stopin, A., Ahade, S., Sav, A.-M., & Leboyer, M. *Faux Pas detection and intentional action in Asperger syndrome. A replication on a French sample*. «Journal of Autism and Developmental Disorders», 39, 2009, 373–382.

vide moral judgments about the story events by blaming the speaker for committing an offensive intentional act, both their abilities to interpret an action outcome as intentional or accidental and to provide an empathic appreciation of the listener's emotional state were diminished.

Their ability to understand whether an action is intentional or unintentional might be compromised because of their difficulties with ToM reasoning. In the absence of full-fledged ToM competence, HFA and AS subjects' judgments of intentionality can differ from those expressed by participants with typical development. Interestingly, in accordance with Zalla & Leboyer results, individuals with AS did appeal to psychological states in reasoning about social situations, even if they made inappropriate judgments of intention in judging that the character in the story intended to hurt the addressee⁵⁰. By using two pairs of vignettes, the Knobe's Harm/Help cases and Murder/Bull's-eye cases⁵¹, Zalla & Leboyer showed that, as already observed in typical population, in individuals with HFA and AS judgment of intentional action is informed by the moral appreciation of the action outcome. However, the two groups differed on praise judgments and moral justifications, suggesting that these processes were poorly influenced by the agent's psychological states. They concluded that, although under certain circumstances, individuals with HFA and AS and people with typical development have similar intuitive judgments of intentionality. Over-assignment of praise judgments and the reduced use of folk-psychological concepts in moral judgment would reflect difficulties using intentionality information for moral reasoning.

Previous studies have suggested that individuals of higher verbal ability, and in particular those with Asperger Syndrome, who can pass False Belief tasks, employ linguistic strategies to circumvent ToM impairments⁵². In the same vein, one can speculate that the

⁵⁰ Cf. Zalla, T., & Leboyer, M. *Judgment of intentionality and moral evaluation in individuals with high functioning autism*. «Review of Philosophy and Psychology», 121, 2011, pp. 115-126.

⁵¹ Cf. Knobe, J. *Intentional action and side effects in ordinary language*, cit.; Knobe, J. *Intentional action in folk psychology: An experimental investigation*, cit.

⁵² Cf. Happé, F. *An advanced test of theory of mind: Understanding of story characters' thoughts and feelings by able autistic, mentally handicapped and normal children and*

attribution of intentional agency in people with HFA and AS might come from compensation mechanisms involving their spared moral intuition to normative reasoning, often associated with a strong sensitivity to normative violations. Although it has been proposed that ToM and moral reasoning develop independently and rely on distinct neurocognitive systems⁵³, other studies have shown that the two domains actually interact at both the cognitive and neural levels. It would then be interesting to assess whether impairments in ToM, as measured by more advanced ToM test (as for instance the Faux Pas recognition test), would affect the ability of individuals with HFA and AS to draw the distinction among different types of normative transgressions.

In 2011, Zalla and collaborators⁵⁴ tested the ability of adults with HFA and AS to distinguish moral, conventional, and disgust transgressions using the task developed by Nichols⁵⁵. Participants were given a set of transgressions scenarios followed by questions about permissibility, seriousness, authority contingency, and justification. Their aim was to assess whether ToM impairments of individuals with HFA and AS affect their abilities to provide distinctive judgments for these kinds of transgressions and appropriate normative justifications. According to Nichols, in subjects with typical development, moral, conventional and disgust transgressions are judged wrong because they are prohibited by a set of internally represented norms. He also argued that moral and disgust norms differ from conventional ones in that the former are backed by affective and emotional reactions.

adults. «Journal of Autism and Developmental Disorders», 24, 1995, pp. 129–154; Tager-Flusberg, H., & R.M. Joseph. *Identifying neurocognitive phenotypes in autism*. «Philosophical Transactions of the Royal Society», 358, 2003, pp. 303–314.

⁵³ Cf. Blair, R. J. R. Responding to the emotions of others: Dissociating forms of empathy through the study of typical and psychiatric populations, cit.

⁵⁴ Cf. Zalla, T., Barlassina, L., Buon, M., & Leboyer M., Moral judgment in adults with autism spectrum disorders. «Cognition», 121, 2011, pp. 115–126.

⁵⁵ Cf. Nichols, S. Norms with feeling: Toward a psychological account of moral judgment. «Cognition», 84, 2002, pp. 223–236; Nichols, S. *Sentimental rules: On the natural foundations of moral judgment*. Oxford: Oxford University Press, 2004.

Zalla and collaborators confirmed previous evidence showing that participants with typical development are able to distinguish affect-backed norm transgressions from conventional affect-neutral norm transgressions and to provide different justifications for the three types of normative violations. Their findings also showed that adults with HFA/AS judged conventional and disgust transgressions to be significantly more serious than did the comparison group, and failed to distinguish disgust transgressions from moral transgressions along the seriousness dimension. Moreover, for both moral and conventional transgressions, they favoured explanations in terms of “Rules” rather than in terms of “Others’ Welfare” and failed in drawing the moral/conventional distinction along the dimension of justification. However, like the comparison group, they were able to detect transgressions and to judge that moral and disgust transgressions were less permissible and less authority-dependent than conventional transgressions.

The authors pointed out three main considerations that emerged from these findings⁵⁶: 1) adults with HFA and AS have learnt a normative theory that enables them to reason according to normative rules when asked to apply this knowledge to real-life situations; 2) they were able to distinguish affect-backed from conventional affect-neutral norms along the dimensions of permissibility, seriousness and authority-dependence (which could suggest that they are able to use affective responsiveness to make distinctive judgments) and, within the category of affect-backed norms, moral transgressions were judged as less authority contingent than disgust ones; 3) they provided justifications in terms of “Rules” rather than in terms of “Others’ Welfare” revealing that emotion information is not used for conscious processes of moral reasoning. They concluded that the fact that individuals with HFA/AS are able to distinguish non conventional from conventional prohibitions might suggest that emotional appraisal is relatively preserved, while difficulties to distinguish moral and conventional violations patently arise when they are asked to provide explicit and conscious justifications for their judgments.

⁵⁶ Cf. Zalla, T., Barlassina, L., Buon, M., & Leboyer M., *Moral judgment in adults with autism spectrum disorders*, cit.

6. Conclusion

Zalla and collaborators study reveals that difficulties providing appropriate moral justifications and evaluating the seriousness of transgressions at a fine-grained level in individuals with ASDs may be explained by an impaired cognitive appraisal system that, while responsive to rule violations, fails to integrate and use relevant information about the agent's intentions and affective states in conscious moral reasoning. At the same times, recent findings, discussed in the first and the second sections, showed that people with HFA and AS appear to possess a preserved ability to understand irony and its main social functions, but they failed to integrate information coming from these two distinct domains of social knowledge. In both cases, it is likely that, although people with ASDs possess spared social and moral intuition to normative reasoning, as reported by previous studies, the use of this information would occur only when overtly available through controlled and effortful mechanisms. Thus, a compensatory cognitive strategy based on this spared social and moral ability to make reliable predictions about others' behaviour would likely rely on effortful and controlled mechanisms acting on explicit social and moral norms in individuals with ASDs.

