The role of linguistic abilities in irony comprehension.

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Irony comprehension requires the speaker to understand that a false statement is uttered not to deceive the listener, but to joke, i.e. to be ironic.

Irony comprehension emerges around 6 years (Ackerman 1981): comprehension of positive remarks in negative situations (ironic criticism) occurs earlier than comprehension of negative remarks in positive situations (ironic compliments) (Harris & Pexman 2003). According to some scholars, irony comprehension is linked to 2nd order ToM abilities, in atypical populations (ASD children, Happé 1993) and in typical populations (Sullivan et al. 1995).

The long-term project we are working on is to further explore the relation between ToM abilities and irony comprehension in several atypical developing populations and to create ad-hoc supporting materials for those who need them. In order to set up effective instruments for assessing and improving irony comprehension is first necessary to i) delineate the developmental trajectory in TD children and ii) highlight which factors are better predictors of this complex skill.

Considering that performance on ToM tasks is highly dependent on language abilities (Happé 1995 and Astington & Jenkins 1999), it is our particular interest to test which (if any) linguistic ability is a good predictor of irony comprehension.

Until now we have tested 56 TD children (25 F, 31 M; Age: M=7y,10m; range= 6y,5m – 9y,4m.). All had normal IQ and passed the 1st Level ToM Smarties task. To assess 2nd order ToM we used the "*birthday puppy task*" (Sullivan et al. 1994). As linguistic assessment we use lexical and grammatical comprehension tasks of the battery BVL 4-12 (Marini et al. 2015).

The irony task included 10 stories introducing a situation and concluding with a remark, literal (4, controls) or ironic (6). Comments could be compliments (5) or criticisms (5). Children were asked three questions about i) context (control), ii) understanding of speaker's meaning; iii) recognition of speaker's attitude.

Accuracy on question ii) and iii) was analyzed using mixed logit models (Jaeger 2008). Participants responded correctly to 97.54% (SD= 15.49) of questions on literal comments and to 83.63% (SD = 37.03) of ironic comments (p<.001). Ironic stories were further analyzed testing the difference between ironic compliments and ironic criticism, the effects of having or not a 2nd order ToM and the influence of linguistic knowledge. Performance on ironic criticism is better than on ironic compliments (91.40% (SD=28.11) accuracy vs. 80.64% (SD= 39.61) accuracy, respectively: p<.01). Overall, accuracy increased as grammatical competence increased (p<.01). No effect of ToM was found. Contrary to previous finding (Sullivan et al. 1995), we did not find a direct relationship between 2nd order ToM and irony comprehension, although this might emerge when younger children will be included in the study. Importantly, irony comprehension is linked to linguistic comprehension, specifically to grammatical skills. As previous research suggested (Norbury 2005; Szücs 2013) factors other than ToM could predict figurative language understanding, irony included.