

<b>Outcome Measure</b>	<b>Movie for the assessment of social cognition (MASC)</b>
<b>Sensitivity to Change</b>	No
<b>Population</b>	Adult
<b>How to obtain</b>	Available from the authors
<b>Domain</b>	Social Cognition
<b>Type of Measure</b>	Performative measure
<b>Time to administer</b>	<b>45 minutes</b>
<b>Description</b>	<p>The MASC (Dziobek et al., 2006) comprises a 15-minute movie that depicts a group of four people interacting and takes around 45 minutes to administer. The movie is stopped at 45 time points and a question is asked of the viewer as to the thoughts/feelings or intentions of the relevant character. The original version (Dziobek et al., 2006) referred to 46 open ended questions but the subsequent, freely available multiple-choice format appears to have 45 questions and six control questions (e.g. (Newbury-Helps, Feigenbaum, &amp; Fonagy, 2016). The information used to answer the questions is either verbal (19 items: literal = 10 items, non-literal = 6 items) or non-verbal (16 items: facial expression, 6 items, posture etc., 10 items).</p> <p>According to the classification provided by Vaskinn (Vaskinn, Andersson, Østefjells, Andreassen, &amp; Sundet, 2018), items canvas understanding of thoughts (9 items), intentions (17 items) and emotions (18 items) with one item (#35) being excluded as not tapping mental states.</p> <p>Scoring can be classified into a total score correct, or errors of over-mentalising, under-mentalising and no mentalising. Alternatively, the score can be for cognitive ToM (i.e. thoughts and intentions) or affective ToM (emotions).</p>
<b>Properties</b>	<p><u>Psychometric properties</u></p> <p><u>Reliability:</u> Cronbach's alpha for entire scale = .84-.86 (Dziobek et al., 2006; Lahera et al., 2014).</p> <p><u>Inter-rater reliability</u> (for free response format): ICC = .99 (Dziobek et al., 2006)</p> <p><u>Test-retest reliability:</u> (one year) <math>r = .67</math> (Vonmoos et al., 2019)</p> <p><u>Convergent validity:</u> The MASC correlates with the Strange Stories test (<math>r = .47</math>) in adolescents/young adults with ASD (Dziobek et al., 2006; Lahera et al., 2014) and with emotion recognition in healthy controls (Dziobek et al., 2006; Vaskinn et al., 2018) – although not always (Zwick &amp; Wolkenstein, 2016). It correlates with the RMET (Lahera et al., 2014) (<math>r = .77</math>) and retains a modest correlation (<math>r = .21</math>) when IQ, education and mental health are controlled (Newbury-Helps et al., 2016). It did not correlate with vocabulary, estimated IQ or abstract thinking (nb Strange stories did correlate with Vocab) (Dziobek et al., 2006).</p> <p><u>Discriminant validity:</u></p> <p>The MASC has shown to differentiate between healthy adults and young people with ASD (Lahera et al., 2014) (Dziobek et al., 2006), as well as adults with schizophrenia (Montag et al., 2011), schizoaffective disorder (Engelstad et al., 2019), antisocial personality disorder (Newbury-Helps et al., 2016). This is true for most scores including the two kinds of under-mentalising errors but not over-mentalising (Engelstad et al., 2019; Montag et al., 2011; Vaskinn et al., 2018).</p> <p><u>Normative data:</u> Normative data for the MC version of the MASC is available in some publications comparing clinical groups to healthy controls such as (Engelstad et al., 2019), <math>N = 71</math>, age: <math>M/SD = 29.3/7.7</math>; (Montag et al., 2011), <math>N = 80</math> age: <math>39.1/10.7</math>; (Newbury-</p>

	Helps et al., 2016); N = 42, age 37.5/15.9; (Vaskinn et al., 2018), N = 71, age 29.3/7.7, (Lahera et al., 2014), N =25, age 27.2/4.7.
<b>Advantages</b>	Provides an ecologically valid assessment of social cognition that combines verbal and non-verbal cues in a video format. Designed to sample a range of mental state inferences Freely available from the website
<b>Disadvantages</b>	Not all questions sample mental state terms. The over-mentalising errors seem to lack validity. Not yet consistent agreement about how scores/errors are categorized.

### References

- Bivona, U., Riccio, A., Ciurli, P., Carlesimo, G. A., Donne, V., Pizzonia, E., . . . Costa, A. (2013). Low Self-Awareness of Individuals With Severe Traumatic Brain Injury Can Lead to Reduced Ability to Take Another Person's Perspective. *The Journal of Head Trauma Rehabilitation*.
- Carey, J. C., Fox, E. A., & Spraggins, E. F. (1988). Replication of structure findings regarding the Interpersonal Reactivity Index. *Measurement and Evaluation in Counseling and Development*.
- Christopher, F. S., Owens, L. A., & Stecker, H. L. (1993). Exploring the darkside of courtship: A test of a model of male premarital sexual aggressiveness. *Journal of Marriage & the Family; Journal of Marriage & the Family*, 55(2), 469-479.
- Davis, M. H. (1980). A multidimensional approach to individual differences in empathy.
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of personality and social psychology*, 44(1), 113.
- de Sousa, A., McDonald, S., Rushby, J., Li, S., Dimoska, A., & James, C. (2010). Why don't you feel how I feel? Insight into the absence of empathy after severe traumatic brain injury. *Neuropsychologia*, 48(12), 3585-3595.
- Dziobek, I., Fleck, S., Kalbe, E., Rogers, K., Hassenstab, J., Brand, M., . . . Convit, A. (2006). Introducing MASC: a movie for the assessment of social cognition. *Journal of Autism & Developmental Disorders*, 36(5), 623-636. doi:10.1007/s10803-006-0107-0
- Engelstad, K. N., Rund, B. R., Torgalsboen, A. K., Lau, B., Ueland, T., & Vaskinn, A. (2019). Large social cognitive impairments characterize homicide offenders with schizophrenia. *Psychiatry Res*, 272, 209-215. doi:10.1016/j.psychres.2018.12.087
- Lahera, G., Boada, L., Pousa, E., Mirapeix, I., Moron-Nozaleda, G., Marinas, L., . . . Parellada, M. (2014). Movie for the Assessment of Social Cognition (MASC): Spanish validation. *Journal of Autism & Developmental Disorders*, 44(8), 1886-1896. doi:10.1007/s10803-014-2061-6
- Montag, C., Dziobek, I., Richter, I. S., Neuhaus, K., Lehmann, A., Sylla, R., . . . Gallinat, J. (2011). Different aspects of theory of mind in paranoid schizophrenia: evidence from a video-based assessment. *Psychiatry Res*, 186(2-3), 203-209. doi:10.1016/j.psychres.2010.09.006
- Muller, F., Simion, A., Reviriego, E., Galera, C., Mazaux, J.-M., Barat, M., & Joseph, P.-A. (2010). Exploring theory of mind after severe traumatic brain injury. *Cortex*, 46(9), 1088-1099.
- Newbury-Helps, J., Feigenbaum, J., & Fonagy, P. (2016). Offenders With Antisocial Personality Disorder Display More Impairments in Mentalizing. *Journal of Personality Disorders*, 31(2), 232-255. doi:10.1521/pedi\_2016\_30\_246
- Vaskinn, A., Andersson, S., Østefjells, T., Andreassen, O. A., & Sundet, K. (2018). Emotion perception, non-social cognition and symptoms as predictors of theory of mind in schizophrenia. *Comprehensive Psychiatry*, 85, 1-7. doi:https://doi.org/10.1016/j.comppsy.2018.05.002
- Vonmoos, M., Eisenegger, C., Bosch, O. G., Preller, K. H., Hulka, L. M., Baumgartner, M., . . . Quednow, B. B. (2019). Improvement of Emotional Empathy and Cluster B Personality Disorder Symptoms Associated With Decreased Cocaine Use Severity. *Frontiers in Psychiatry*, 10, 213-213. doi:10.3389/fpsy.2019.00213

- Yarnold, P., Bryant, F., Nightingale, S., & Martin, G. (1996). Assessing physician empathy using the Interpersonal Reactivity Index: A measurement model and cross-sectional analysis. *Psychology, Health & Medicine, 1*(2), 207-221.
- Zwick, J., & Wolkenstein, L. (2016). Facial emotion recognition, Theory of Mind and the role of facial mimicry in depression. *Journal of Affective Disorders, 210*. doi:10.1016/j.jad.2016.12.022