

Outcome Measure	Strange Stories
Sensitivity to Change	No
Population	Adult and children
How to obtain	From the author
Domain	Social Cognition – Theory of Mind
Type of Measure	Performance task; Available from the authors
Time to administer	20-60 minutes depending on number of stories (24 stories =15-20 minutes)
Description	<p>The Strange Stores (SS) (Happe, 1994) comprise a series of 24 very short texts that involve a non-literal statement towards the end. Each represents one of 12 exchange types: lies, white lies, jokes, pretence, misunderstandings, persuasion, double bluff, contrary emotions, appearance/reality, figure of speech and sarcasm. An example (joke) is as follows:</p> <p><i>“Today James is going to Claire's house for the first time. He is going over for tea, and he is looking forward to seeing Claire's dog, which she talks about all the time. James likes dogs very much. When James arrives at Claire's house Claire runs to open the door, and her dog jumps up to greet James. Claire's dog is huge, it's almost as big as James! When James sees Claire's huge dog he says, "Claire, you haven't got a dog at all. You've got an elephant!"</i></p> <p>Typically, comprehension is assessed via two questions,</p> <p>e.g. <i>Is it true, what James says?</i> (answered correct/incorrect)</p> <p><i>Why does James say this?</i> (scored 2 for a complete answer, 1 for partial, 0 for incorrect)</p> <p>In the original paper, there were six control stories that used physical rather than mental inferences. However, these were deemed very simple and other control stories have been developed by other researchers that refer to physical causes or else represent a series of unrelated sentences (e.g. (Fletcher et al., 1995).</p> <p>The stories can be read to the examinee and accompanied by showing them the written text with inclusion of pictures.</p> <p>Different researchers have used different numbers of stories from the original sample ranging from 5 (Schuwerk, Vuori, & Sodian, 2015), eight (Dziobek et al., 2006; Lahera et al., 2013; Lough et al., 2006; Rogers, Dziobek, Hassenstab, Wolf, & Convit, 2007; Snowden et al., 2003; White, Hill, Happé, & Frith, 2009), 10 (Freed et al., 2015), 12 (McKown, Allen, Russo-Ponsaran, & Johnson, 2013), 18 (Jolliffe & Baron-Cohen, 1999) and all 24 (Kaland et al., 2005; Spek, Scholte, & Van Berckelaer-Onnes, 2010). The number of control stories included has ranged from zero to 13. Stories used in adult studies are from the same group but may be selected to represent the more difficult (Spek et al., 2010).</p> <p>The length of time to do the test depends on the number of stories. 24 stories approximately 15-20 minutes.</p>

	<p>Scoring has also varied from the original 0-2, to include binary scores (McKown et al., 2013; McKown, Gumbiner, Russo, & Lipton, 2009), or scores that differ depending on whether the answer incorporates a mental state explanation or not.</p>																								
<p>Properties</p>	<p><u>Internal consistency</u>: Alpha = .74-.75 (McKown et al., 2013)</p> <p><u>Inter-rater reliability</u> for the SS is usually good: ICCs of 0.89 - .99 (McKown et al., 2013; Rogers et al., 2007; White et al., 2009) or percent agreement of 95–98% (Jolliffe & Baron-Cohen, 1999; Spek et al., 2010).</p> <p><u>Test-retest</u> (12 months) $r = .64$.(McKown et al., 2013)</p> <p><u>Construct validity</u>:</p> <p>SS correlates significantly with other measures of ToM including the TOM measure of the NEPSY (McKown et al., 2013), the IRI PT subscale (Rogers et al., 2007), the Faux Pas test (Spek et al., 2010), the MASC (Dziobek et al., 2006; Lahera et al., 2013) and the RMET (Lahera et al., 2013). It also correlates significantly with vocabulary (Dziobek et al., 2006) as well as receptive and expressive language (Freed et al., 2015) and pragmatic language skills (McKown et al., 2013).</p> <p><u>Concurrent validity</u>: There is not a lot of research on the predictive validity of the SS although in one study it was found to be a good predictor of ASD, more so than other social cognition measures including the RMET, Ekman and Friesen faces and the MASC (Dziobek et al., 2006).</p> <p><u>Discriminant validity</u>: The SS mentalising (but not control) stories usually discriminate between children/adolescents/ adults with ASD and demographically matched controls (Baron-Cohen, Wheelwright, & Jolliffe, 1997; Happe, 1994; Jolliffe & Baron-Cohen, 1999; Kaland et al., 2005; Lahera et al., 2013; Rogers et al., 2007; Spek et al., 2010; White et al., 2009) although not always (Schuwerk et al., 2015). People with FTD and HD have been found to perform more poorly than matched controls but this is regardless of story type (Snowden et al., 2003). In other studies people with FTD were no poorer than controls (Lough et al., 2006).</p> <p><u>Normative data</u>: There is normative data in a range of studies that varies depending on both the scoring system used and the number of stories (both mentalising and control) given. Some of these are represented in the table below.</p> <table border="1" data-bbox="488 1487 1465 1910"> <thead> <tr> <th>Study</th> <th>Number of mental state stories</th> <th>Number of control stories</th> <th>Scoring</th> <th>Number of typically developed children</th> <th>Number of healthy adults</th> </tr> </thead> <tbody> <tr> <td>(Dziobek et al., 2006)</td> <td>8</td> <td>2</td> <td>0 -2</td> <td></td> <td>20</td> </tr> <tr> <td>(Freed et al., 2015)</td> <td>10</td> <td></td> <td>0-2 or 0-3</td> <td>140 5-12 y.o.</td> <td></td> </tr> <tr> <td>(Happe, 1994)</td> <td>24</td> <td>6</td> <td>0-2</td> <td>26 6-10 y.o.</td> <td></td> </tr> </tbody> </table>	Study	Number of mental state stories	Number of control stories	Scoring	Number of typically developed children	Number of healthy adults	(Dziobek et al., 2006)	8	2	0 -2		20	(Freed et al., 2015)	10		0-2 or 0-3	140 5-12 y.o.		(Happe, 1994)	24	6	0-2	26 6-10 y.o.	
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	(Jolliffe & Baron-Cohen, 1999)	18	6	percent correct		17
	(Kaland et al., 2005)	24	13	0-2	20 9-21 y.o.	
	(Lahera et al., 2013)	8	8	0-2		26
	(Lough et al., 2006)	8	8	0-1		13
	(McKown et al., 2013)	12		0-1	186 4-14 y.o.	
	(Rogers et al., 2007)	8	2	0-2		21
	(Schuwerk et al., 2015)	5	4	percent correct		19
	(Snowden et al., 2003)	8	8	0-2		18
	(Spek et al., 2010)	24		0-2		32
	(Lough et al., 2006)	8	8	0-2		13
	(White et al., 2009)	8	8	0-2	45 7-12 y.o.	
Advantages	<ul style="list-style-type: none"> • The SS are simple to administer and freely available • There is a substantial amount of research on the SS • Construct validity is sound 					
Disadvantages	<ul style="list-style-type: none"> • The SS are reliant on good language skills • Normative data varies enormously with respect to number of stories and scoring systems. 					

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