

Assessing social perception can be a reliable and valid exercise: A psychometric study of TASIT

Introduction

This study examined the reliability and validity of TASIT: a test of social perception, based upon a large sample of adults with severe traumatic brain injury.

Why TASIT was developed

Social skills deficits are common in many clinical groups, e.g. autism, traumatic brain injury, learning disabilities.

Social skills comprise

- Expression (behaviour)
- Perception

There are few tools available that measure perception

What is social perception?

Social perception is the ability to read selected social cues in order to make judgements about the behaviour, attitudes and emotions of others (McFall, 1982).

Social cues include

- Facial expression and tone of voice
- Gesture and "body language"
- Contextual information
- Knowledge of the world



Why does social perception matter?

Verbal messages alone are insufficient to convey meaning

- A single utterance e.g. "Thankyou!" may be meant
 - Sincerely to end an encounter
 - As a request for further assistance
 - As a sarcastic insult
- Nonverbal cues determine this meaning
- Failure to read these = Failure of communication



The Awareness of Social Inference Test (TASIT)

Comprises three parts with alternate forms for re-testing

PART 1: Emotion evaluation Test (EET):

- 28 videoed vignettes of actors enacting ambiguous scripts representing 7 basic emotions

■ These stimuli:

- Are dynamic
- Portray naturalistic, complex expressions
- Provide intonation and gestural cues

■ Respondents choose the perceived emotion from the following descriptors:

- | | |
|---------|----------------------|
| Happy | Surprised |
| Sad | Angry |
| Anxious | Revolted (Disgusted) |
| Neutral | |

PART 2: Social Inference –Minimal (SI-M):

- SI-M examines understanding of conversational meanings that are determined by paralinguistic cues (facial expression, tone of voice, gesture etc)

■ SI-M comprises 15 videoed vignettes of everyday conversational exchanges

■ Vignettes use neutral scripts enacted by professional actors to represent either

- Sincere exchanges
- Sarcastic exchanges

Comprehension is assessed via 4 questions for each vignette. These cover 4 facets of understanding, i.e. the speakers'

- Beliefs (what s/he knows)
- Meaning (what s/he means by what is said)
- Intentions (what s/he intends to do: to insult, to reassure etc)
- Feelings (what s/he feels)

PART 3: Social Inference –Enriched (SI-E):

■ SI-E assesses the ability to use contextual knowledge, i.e. visual and verbal information to derive meaning

■ SI-E comprises 16 videoed vignettes of everyday exchanges

■ In each of these there is a literally untrue comment enacted in one of two ways: As sarcasm meant to amplify the truth

As a lie meant to conceal or minimise the truth

■ SI-E provides two sources of non-verbal cues to determine meaning

- Paralinguistic features (like Part 2)
 1. Contextual cues (e.g. Visual edit indicating the true state of affairs or a prologue that reveals the speaker's true thoughts)

■ 4 probes are used to assess comprehension of each vignette covering the same facets of understanding as PART 2

TASIT: Normative data

A pool of 283 normal (mainly young) adults achieved a high level of performance on all aspects of the test (84% accuracy or greater) with some influence from both education and intelligence.

In two studies (McDonald et al, 2003, 2004) people with traumatic brain injuries have been found to be poorer judging emotions than matched controls, with particular difficulties recognising neutral items, fear and disgust. They were as capable as matched controls when understanding sincere exchanges and lies but had difficulty with sarcasm

Participants

116 adults (27 women and 89 men) took part. On average they were 36 years old (s.d.12) with 12 years of education (s.d. = 3) and all had severe injuries, (mean PTA 78.4 days: s.d. = 82.3). Mean time post injury = 6.7 years, s.d. = 7.4.

Reliability study:

65 adults with chronic injuries (at least 9 months post injury)

32 participants were given repeat administrations of Part A

38 participants were given A then B (or vice versa). NB some were involved in both studies

Construct validity

Validity was estimated based on subgroups from the sample of 65 (above) + a further 51 adults engaged in other research studies using TASIT. The majority of the second group were in the chronic phase of their injuries, but this group also included 12 individuals who were in the acute stages

Reliability

	Part 1: (Emotion)	Part 2: (Sarcasm vs Sincere)	Part 3: (Lies vs Sarcasm)
Test-retest	0.74	0.88	0.83
Alternate forms	0.83	0.62	0.78

Construct Validity

TASIT scores were correlated to conventional neuropsychological tests some of which were predicted to be more closely related to social processing than others. N tested on each test is detailed in the table.

Conventional tests	N	Part 1	Part 2	Part 3	
Premorbid IQ	WTAR	61	0.50	0.36	0.26
Process Speed	Digit Symbol ¹	44	0.02	0.18	0.32
	Symbol Search ¹	72	0.32	0.45	0.54
	Trails A	35	-0.39	-0.53	-0.34
	Trails B	35	-0.37	-0.56	-0.35
Working Memory	Digit Span ¹	82	0.25	0.35	0.30
	Letter Num Sequence ¹	61	0.27	0.36	0.30
Face Recognition	Benton Faces	29	0.45	0.26	0.15
	Logical Memory I ²	85	0.33	0.39	0.34
	Faces I ²	55	0.69	0.50	0.42
Learning: Non-social	Verbal Paired Associates I ²	43	0.13	0.31	0.18
	Rey Figure Recall	22	-0.08	0.33	0.05
Executive function: Social	Similarities ¹	67	0.35	0.49	0.29
	Matrix Reasoning ¹	18	0.66	0.77	0.78
Executive function: Non-social	Wisconsin CST	53	0.13	0.09	0.19
	Verbal Fluency (CFL)	58	0.12	0.21	0.26

¹ Wechsler Adult Intelligence Scale III : ² Wechsler Memory Scale III

Further tests of Construct Validity

In addition, convergent validity was examined with respect to tests of social perception taken from the experimental literature.

Tests of Social Perception	N	Part 1	Part 2	Part 3	
Ekman Faces (Ekman & Freisen, 1978)	Label	51	0.69	0.50	0.37
	Match	51	0.70	0.45	0.42
Assessment of Interpersonal Problem Solving (Donahoe et al, 1990)	Receive	19	0.21	0.42	-0.04
	Process	19	0.10	0.32	-0.07
	Send	19	0.25	0.47	0.10
Theory of Mind (e.g. Happe et al, 1999)	1 st Order	12	0.68	0.12	0.23
	2 nd Order	12	0.38	0.68	0.36
	Control	12	0.04	0.54	0.51

Conclusions

TASIT has alternate forms with good reliability and is stable over time

Construct validity studies of TASIT suggest that it is a complex measure of social perception that tap:

- information processing speed, working memory and basic perception (face recognition) as well as static emotional expression (Ekman faces)
- new learning and executive function especially as these relate to social information (except for Matrix Reasoning)

Its relationship to other measures of social perception in the literature is less certain – these tests themselves have uncertain reliability and validity

References

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¹ McDonald, Bornhofen, Long & Saunders are from UNSW ² Shum & Neulinger are from Griffith University