

Measuring reasoning in paranoia: development of the Fast and Slow Thinking questionnaire

Article (Supplemental Material)

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Supplementary material

Supplementary Table 1. Items included in the 12 item FaST questionnaire and associated factor loadings (> .40) for the fast and slow scales.

Items	Non-Clinical		Clinical	
	FaST ^{FAST}	FaST ^{SLOW}	FaST ^{FAST}	FaST ^{SLOW}
1. I rely on my gut feelings and do not look for more information	0.62		0.47	
2. I like to logically think through what has happened.		0.75		0.64
3. I trust in my heart that this is definitely what is happening	0.77		0.62	
4. I think about different viewpoints to explain what is happening		0.70		0.69
5. Regardless of what happens, nothing changes my mind	0.68		0.63	
6. I like to trust my instinct or hunch about the situation	0.66		0.58	
7. I ask myself if the thought is likely, in light of all the facts.		0.70		0.55
8. There is no way I am wrong about what is happening.	0.79		0.68	
9. I look for more information about what is happening.		0.69		0.65
10. I think I may be mistaken about what is happening.		0.44		
11. I know my hunch is right, and do not think of other possibilities.	0.79		0.74	
12. I like to think about other possibilities for what is going on.		0.86		0.62

Supplementary Table 2. 10 item FaST Questionnaire

Items

1. I like to logically think through what has happened.
 2. I trust in my heart that this is definitely what is happening
 3. I think about different viewpoints to explain what is happening
 4. Regardless of what happens, nothing changes my mind
 5. I like to trust my instinct or hunch about the situation
 6. I ask myself if the thought is likely, in light of all the facts.
 7. There is no way I am wrong about what is happening.
 8. I look for more information about what is happening.
 9. I know my hunch is right, and do not think of other possibilities.
 10. I like to think about other possibilities for what is going on.
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Test-retest reliability in non-clinical sample on the 10 item FaST questionnaire

To assess test-retest reliability, a total of 94 individuals from the non-clinical group repeated the FaST two weeks after initial completion. The intra-class correlation coefficient (ICC) between total FaST scores at baseline and follow-up for the 10 item scale was significant ($p < 0.001$) for items relating to fast thinking (ICC = 0.88) and slow thinking (ICC = 0.89).

Analysis of the FaST Questionnaire using the Revised Green Paranoia Thoughts Scale (r-GPTS)

Methods

Measure

The Revised Green et al. Paranoid Thoughts Scale – 18 items (R-GPTS; Freeman et al., 2019). Comprises two scales assessing thinking relevant to paranoia: ideas of social reference (Part A) and persecution (Part B). The Part A scale contains 8 items and The Part B Scale contains 10 items rated over the preceding month, each scored on a five-point Likert scale from 0 ('Not at all') to 4 ('Totally'). Scales can be added up to form a total score. Higher scores reflect higher levels of paranoia.

Analysis

Criterion and construct validity were assessed by investigating the relationship between the fast and slow scales and the R-GPTS (Freeman et al., 2019) for the clinical (n=265) and non-clinical group (n=209). Construct validity was investigated by comparing responses on the questionnaire between the clinical and non-clinical group. To assess test-retest reliability, a total of 94 individuals of the non-clinical group repeated FaST two weeks after initial completion. Items for the 12 item and 10 item scale for both the clinical and non-clinical group were being subjected to factor analysis using varimax rotation.

Results

In both groups, the fast scale had significant, medium-large positive correlations with the R-GPTS. Scores on the slow thinking scale had small, positive and negative correlations with the R-GPTS for the clinical and non-clinical group, respectively (Supplementary Table 3 and 4). For the clinical group, scores on the fast and slow thinking scales were significantly higher and lower, respectively, compared to the non-clinical group ($p < .0001$). The scores on the GPTS and R-GPTS were significantly higher in the clinical group compared to the non-clinical group ($p < .0001$) (Supplementary Table 5). There was nevertheless considerable overlap in the range of the scores between the non-clinical and clinical group.

Supplementary Table 3. Associations between the 10 item FaST questionnaire and the Revised Green et al. Paranoid Thought Scale in the non-clinical group (n=209).

	FaST ^{FAST}	FaST ^{SLOW}	GPTS ^{TOTAL}	GPTS ^{REF}	GPTS ^{PERS}
FaST ^{FAST}	1				
FaST ^{SLOW}	-.16*	1			
R-GPTS ^{TOTAL}	.36**	-.12	1		
R-GPTS ^{REF}	.28**	-.14*	.91**	1	
R-GPTS ^{PERS}	.36**	-.06	.90**	.63**	1

* p < .05

** p < .01

Supplementary Table 4. Associations between the 10 item FaST questionnaire and the Revised Green et al. Paranoid Thought Scale in the clinical group (n=265).

	FaST ^{FAST}	FaST ^{SLOW}	GPTS ^{TOTAL}	GPTS ^{REF}	GPTS ^{PERS}
FaST ^{FAST}	1				
FaST ^{SLOW}	-.05	1			
R-GPTS ^{TOTAL}	.39**	.16*	1		
R-GPTS ^{REF}	.28**	.16**	.87**	1	
R-GPTS ^{PERS}	.40**	.12	.89**	.54**	1

* p < .05

** p < .01

Supplementary Table 5. Comparison between clinical and non-clinical groups on the FaST questionnaire, Green et al. Paranoid Thought Scale (GPTS) and Revised-GPTS.

	Mean (S.D)		t	Range	
	Non-clinical group (n = 209)	Clinical group (n = 265)		Non-clinical group (n = 209)	Clinical group (n = 265)
FaST ^{FAST}	10.6 (4.3)	16.9 (4.5)**	15.3	5-25	6-25
FaST ^{SLOW}	18.9 (4.2)	17.0 (4.4)**	-4.9	7-25	5-25
GPTS ^{TOTAL}	51.8 (21.2)	106.9 (26.0)**	26.7	32-160	54-160
GPTS ^{REF}	29.5 (12.7)	50.1 (15.3)**	16.9	16-80	16-80
GPTS ^{PERS}	22.4 (10.5)	56.7 (13.7)**	32.7	16-80	30-80
R-GPTS ^{TOTAL}	13.4 (12.9)	41.3 (14.6)**	22.0	0-72	11-72
R-GPTS ^{REF}	8.9 (7.3)	16.6 (8.0)**	10.9	0-32	0-32
R-GPTS ^{PERS}	4.5 (6.9)	24.7 (8.8)**	27.2	0-40	7-40

** $p < .01$