

# Paranoid Thoughts and Thought Control Strategies in a Nonclinical Population

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**Abstract**—Recently, it has been suggested that thought control strategies aimed at controlling unwanted thoughts may be used to cope with paranoid thoughts in both clinical and nonclinical samples. The current study aims to examine the type of thought control strategies that were associated with the frequency of paranoid thoughts in nonclinical samples. A total of 159 Japanese undergraduate students completed the two scales—the Paranoia Checklist and the Thought Control Questionnaire. A hierarchical multiple regression analysis demonstrated that worry-based control strategies were associated with paranoid thoughts, whereas distraction- and social-based control strategies were inversely associated with paranoid thoughts. Our findings suggest that in a nonclinical population, worry-based strategies may be especially maladaptive, whereas distraction- and social-based strategies may be adaptive to paranoid thoughts.

**Keywords**—Nonclinical population, paranoid thoughts, thought control strategies.

## I. INTRODUCTION

PERSECUTORY delusions are one of the most frequently observed symptoms in people diagnosed with schizophrenia. In the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, [1], pp. 765–766), the following is the current definition of persecutory delusions: “A delusion in which the central theme is that one (or someone to whom one is close) is being attacked, harassed, cheated, persecuted, or conspired against.”

Recent studies have found that delusionary thoughts of persecution (paranoid thoughts) occur quite frequently among the general population [2], including college students [3], [4]. Following the work of Fenigstein and Vanable [5], an increasing number of researchers have highlighted the existence of paranoid thoughts in the nonclinical population [6]–[9]. For instance, Ellett *et al.* [3] revealed that a clear episode of paranoid thoughts was reported by approximately 50% of their sample of 324 college students. In addition, most students reported that their paranoid thoughts were related to anger and frustration. Thus, it is considered normal for many

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people to hold the occasional belief that someone is deliberately attempting to harm or upset them.

Previously, researchers paid attention to the association between intrusive and unpleasant thoughts and thought control strategies. Wells and Davies [10] developed the Thought Control Questionnaire (TCQ), a self-report instrument to provide a measure of the various techniques that individuals use to control unpleasant and unwanted thoughts. They found that individuals use five general strategies to control intrusive thoughts, i.e., distraction (e.g., “I do something that I enjoy”), social control (e.g., “I ask my friends if they have similar thoughts”), worry (e.g., “I focus on different negative thoughts”), punishment (e.g., “I punish myself for thinking the thought”), and reappraisal (e.g., “I try to reinterpret the thought”). Furthermore, they observed that the use of worry and punishment strategies was related to higher scores on measures of trait anxiety, indicating that these particular strategies may be especially maladaptive.

Recently, it has been suggested that thought control strategies aimed at unwanted, unpleasant, and/or distressing thoughts may be used to cope with psychotic phenomena, especially with delusional thoughts, in both clinical and nonclinical samples. Morrison and Wells [11] demonstrated that delusional schizophrenic patients used different thought control strategies (more worry- and punishment-based strategies and less distraction-based strategies) compared to non-schizophrenic patients.

More recently, it has been demonstrated that there exists a relationship between delusional ideation and thought control strategies in nonclinical samples. Jones and Fernyhough [12] indicated that persecutory ideation was positively correlated with the conscious desire to suppress thoughts in university students. In addition, in a student sample, punishment- and worry-based thought control strategies measured in the TCQ were significantly associated with both the frequency of delusional ideation, including paranoid thoughts, and distress in relation to such phenomena [13]. However, only the punishment- and worry-based subscales of the TCQ are used in Campbell and Morrison’s [13] studies.

Consequently, the current study aims to examine and clarify the types of thought control strategies assessed in the TCQ that were associated with the frequency of paranoid thoughts in nonclinical samples. According to previous studies [11], [13], it was predicted that paranoid thoughts were modestly associated with the worry and punishment subscales and modestly and inversely associated with the distraction subscale of the TCQ.

## II. METHOD

### A. Participants

The study involved 179 undergraduates enrolled in a basic psychology class at a university in Tokyo, Japan. Out of these students, 17 refused to participate in the study and 3 had substantial missing data. Thus, a total of 159 Japanese undergraduate students (56 women and 103 men, mean age = 19.12 years,  $SD = 0.81$ ) completed the questionnaires (described below). In order to protect their anonymity, the participants only recorded the details of their sex and age on the cover sheet.

### B. Measures

The participants completed the questionnaires in one sitting and in the following order:

The Paranoia Checklist (PC; [4]) was originally designed to measure paranoid thoughts in nonclinical samples. In this study, in order to measure the frequency of paranoid thoughts, the nine-item Japanese version of the PC was used, which showed good validity and internal consistency [14]; these were examined using a sample of Japanese university students. Each item on the scale (e.g., Bad things are being said about me behind my back) was rated on a five-point scale from 1 = never feel it to 5 = feel it all the time. The total score for each respondent was calculated; higher scores indicated higher levels of paranoid ideation.

The Thought Control Questionnaire (TCQ; [10]) is an instrument designed to measure the strategies that are used to control unpleasant or unwanted thoughts. It consists of 30 items and comprises five subscales (6 items per subscale). In the present study, the Japanese version of the TCQ [15] was used, which showed acceptable to good internal consistency in the case of a sample of 408 Japanese university students. Each item is endorsed on a four-point rating scale (1 = never, 2 = sometimes, 3 = often, 4 = almost always).

### C. Statistical Analysis

All the analyses were conducted using SPSS 15.0 J for Windows. First, Pearson's correlation coefficients between the PC and the TCQ scores were calculated. Second, a hierarchical multiple regression analysis, with sex (step 1) and the five subscale scores of the TCQ (step 2) as the independent variables and the PC score as the dependent variable, was performed.

## III. RESULTS

TABLE I provides the means, standard deviations, and alpha coefficients for all the variables. All the variables were approximately normally distributed. The alpha coefficients for the variables indicated acceptable to excellent internal consistency.

The intercorrelations between the variables are summarized in TABLE II. The PC showed significant but weak correlations with the worry, punishment, and reappraisal subscales of the

TCQ. Besides, most of the correlations between the subscales of the TCQ were weak.

Furthermore, in order to examine the types of thought control strategies that were associated with paranoid thoughts, a hierarchical multiple regression analysis was performed with the PC score as the dependent variable. The independent variables included in the analysis were sex in step 1 and five subscales of the TCQ in step 2. In step 1, when the details of the

TABLE I  
 MEANS (SD) AND ALPHA COEFFICIENTS FOR THE PC AND THE TCQ

Variables	Mean	SD	Alpha
PC	23.23	8.22	0.94
TCQ			
Distraction	14.48	3.46	0.76
Social	12.09	3.88	0.81
Worry	10.35	2.92	0.68
Punishment	9.89	3.08	0.79
Reappraisal	13.38	3.65	0.78

TABLE II  
 CORRELATIONS BETWEEN THE PC AND THE TCQ SCORES

Variables	PC	Distraction	Social	Worry	Punishment
PC	-				
Distraction	-0.10	-			
Social	-0.14	-0.03	-		
Worry	0.27**	0.30**	0.17*	-	
Punishment	0.26**	0.11	-0.07	0.47**	-
Reappraisal	0.19*	0.10	0.13	0.27**	0.32**

\*\*  $p < 0.01$ ; \*  $p < 0.05$ .

sex of the participants were entered, the multiple  $R$  was 0.03 and significant,  $F(1,157) = 4.70$ ,  $p < 0.05$ . In step 2, when the five subscales of the TCQ were entered, the increment in  $R^2$  was 0.15 and significant,  $F(5,152) = 5.75$ ,  $p < 0.001$ . The overall model was also significant, i.e.,  $F(6,152) = 5.69$ ,  $p < 0.001$ . The results for this overall model are presented in TABLE III. This demonstrated that worry-based control strategies ( $B = 0.28$ ,  $t = 3.01$ ,  $p < 0.01$ ) were modestly associated with paranoid thoughts, whereas distraction- ( $B = -0.19$ ,  $t = 2.39$ ,  $p < 0.05$ ) and social-based control strategies ( $B = -0.19$ ,  $t = 2.47$ ,  $p < 0.05$ ) were weakly and inversely associated with paranoid thoughts. Furthermore, punishment- and reappraisal-based control strategies were not found to significantly predict paranoid thoughts.

## IV. DISCUSSION

This study aimed to examine the types of thought control strategies that were associated with the frequency of paranoid ideation in nonclinical samples. Worry-based control strategies were associated with paranoid thoughts, whereas distraction-

and social-based control strategies were inversely associated

TABLE III

RESULTS OF HIERARCHICAL REGRESSION ANALYSIS OF THE PC SCORES

Variables	<i>B</i>	<i>t</i>	
Sex	-0.08	1.05	
TCQ			
Distraction	-0.19	2.39	*
Social	-0.19	2.47	*
Worry	0.28	3.01	**
Punishment	0.10	1.09	
Reappraisal	0.13	1.59	

\*\*  $p < 0.01$ ; \*  $p < 0.05$ .

with paranoid thoughts. Our findings suggest that in a nonclinical population, worry-based strategies may be especially maladaptive, whereas distraction- and social-based strategies may be adaptive to paranoid thoughts. Our hypotheses were partially supported, except in the case of punishment.

Consistent with the work of Campbell and Morrison [13] using the sample of college students in Britain, worry-based thought control strategies were significantly associated with the frequency of paranoid ideation. On the contrary, although it was not hypothesized, regression analysis revealed that punishment-based control strategies were not significantly associated with paranoid ideation. It has been argued that paranoid thoughts are closely associated with negative evaluations about other people (e.g., [6]). Therefore, for some people, punishment-based strategies (i.e., blaming themselves for thinking, for example, that other people are deliberately attempting to harm or upset them) may have a suppressive effect on paranoid thoughts. Otherwise, this phenomenon may be because Campbell and Morrison [13] focused on a wide range of themes of delusional ideation (e.g., persecutory, referential, or grandiose), whereas our study focused only on paranoid ideation, that is, a subset of delusional themes. Furthermore, this may stem from the Japanese samples employed in the present study and reflect the unique characteristics of college students in Japan. Therefore, the applicability of our findings to a population with different cultural backgrounds should be determined with caution.

In addition, although it was not hypothesized for social-based strategies, the distraction- and social-based control subscales of the TCQ were significantly and inversely associated with paranoid thoughts. With regard to the distraction-based strategies, this may be partially consistent with Morrison and Wells' [11] findings that indicate that delusional schizophrenic patients typically tend to use fewer distraction-based strategies as compared to non-schizophrenic patients. As Wells and Davies [10] suggest, distraction- and social-based control strategies may be more closely associated with positive mental health, and under certain circumstances, such strategies may act as a buffer against paranoid thoughts as well as anxious and unwanted thoughts.

There are some limitations and concerns in the interpretation of our results. First, since the present study is cross-sectional, the data does not allow for the determination of the precise causal relationship between thought control strategies and paranoid thoughts. Therefore, longitudinal/prospective studies are required to clearly test the causal direction between thought control strategies and paranoid thoughts. Second, as Campbell and Morrison [13] suggested, it is not clear whether or not thought control strategies are specifically related to paranoid thoughts. Future studies need to test, for instance, whether, after controlling for other variables such as anxiety, thought control strategies are associated with paranoid thoughts. Furthermore, future studies need to explicitly measure the application of thought control strategies to paranoid thoughts.

#### REFERENCES

- [1] American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders (4th ed.). Washington, DC: Author.
- [2] Johns, L., Cannon, M., Singleton, N., Murray, R., Farrell, M., Brugha, T., Bebbington, P., Jenkins, R., & Meltzer, H. (2004). Prevalence and correlates of self-reported psychotic symptoms in the British population. *British Journal of Psychiatry*, 185, 298-305.
- [3] Ellett, L., Lopes, B., & Chadwick, P. (2003). Paranoia in a nonclinical population of college students. *Journal of Nervous and Mental Disease*, 191, 425-430.
- [4] Freeman, D., Garety, P., Bebbington, P., Smith, B., Rollinson, R., Fowler, D., Kuipers, E., Ray, K., & Dunn, G. (2005). Psychological investigation of the structure of paranoia in a non-clinical population. *British Journal of Psychiatry*, 186, 427-435.
- [5] Fenigstein, A., & Vanable, P. (1992). Paranoia and self-consciousness. *Journal of Personality and Social Psychology*, 62, 129-138.
- [6] Fowler, D., Freeman, D., Smith, B., Kuipers, E., Bebbington, P., Bashforth, H., Coker, S., Hodgekins, J., Gracie, A., Dunn, G., & Garety, P. (2006). The Brief Core Schema Scales (BCSS): Psychometric properties and associations with paranoia and grandiosity in non-clinical and psychosis samples. *Psychological Medicine*, 36, 749-759.
- [7] Freeman, D., Dunn, G., Garety, P., Bebbington, P., Slater, M., Kuipers, E., Fowler, D., Green, C., Jordan, J., & Ray, K. (2005). The psychology of persecutory ideation I: A questionnaire survey. *Journal of Nervous and Mental Disease*, 193, 302-308.
- [8] McKay, R., Langdon, R., & Coltheart, M. (2006). The persecutory ideation questionnaire. *Journal of Nervous and Mental Disease*, 194, 628-631.
- [9] Yamauchi, T., Sudo, A., & Tanno, Y. (to be published). Perceptions of paranoid thoughts in a nonclinical group of college students. *Psychological Reports*.
- [10] Wells, A., & Davies, M. (1994). The thought control questionnaire: a measure of individual differences in the control of unwanted thoughts. *Behaviour Research and Therapy*, 32, 871-878.
- [11] Morrison, A. P., & Wells, A. (2000). Thought control strategies in schizophrenia: a comparison with non-patients. *Behaviour Research and Therapy*, 38, 1205-1209.
- [12] Jones, S. R., & Fernyhough, C. (2008). Thought suppression and persecutory delusion-like beliefs in a nonclinical sample. *Cognitive Neuropsychiatry*, 13, 281-295.
- [13] Campbell, M. L. C., & Morrison, A. P. (2007). The role of unhelpful appraisals and behaviours in vulnerability to psychotic-like phenomena. *Behavioural and Cognitive Psychotherapy*, 35, 555-567.
- [14] Yamauchi, T., Sudo, A., & Tanno, Y. (2009). Nihongo-ban Paranoia Checklist no inshi-kouzou oyobi datousei no kentou. [Factor structure and validity of Japanese-version Paranoia Checklist]. *Japanese Journal of Personality*, 17, 182-193. [in Japanese]
- [15] Yamada, N., & Tsuji, H. (2007). Negatexibu-na shikou-eno meta-ninchi oyobi sono kontorou-houryaku II: Metacognitions Questionnaire oyobi Thought Control Questionnaire nihongo-ban-no sakusei. *Nihon Shinri-Gakkai Taikai-Happyo Ronbunshu*, 71, 960 (abstract) [in Japanese, No English title]