

## Cognitive Appraisals and Control Strategies on the Sexual Intrusive Thoughts

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The cognitive model of obsessive-compulsive disorder (OCD) proposes that obsessions are caused by misappraisals and ineffective neutralizing responses on one's intrusive thoughts. The purpose of this study is to compare the cognitive appraisals and control strategies on sexual intrusive thoughts with non-sexual intrusive thoughts. Study 1 was carried out to investigate the frequency and discomfort of the various sexual thoughts in the undergraduate student samples. Guilt feeling, sexual beliefs, and sexual experiences were found to influence the frequency and discomfort of the sexual thoughts. Study 2 was designed to examine the differences between sexual, aggressive, and other intrusive thoughts in the cognitive appraisals and control strategies. The results showed that the sexual intrusive thoughts elicit higher moral thought-action fusion, control over thought, and avoidant and self-blaming control strategies than aggressive and other thoughts do. These results will contribute to the understanding of the OCD symptom's development from the sexual intrusive thoughts.

*Keywords : sexual intrusive thoughts, cognitive appraisal, control strategy*

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Obsessions are defined as persistent thoughts, images, or impulses that occur recurrently and are experienced as intrusive, inappropriate, and distressing (American Psychiatric Association, 1994). Current cognitive perspectives are based on a view that obsessions form a continuum varying from normal to pathological conditions. Non-clinical populations are considered to be indistinguishable from OCD patients with respect to the form and content of their obsessions, although clinical obsessions are more intense, more vivid, and longer-lasting (Rachman & De Silva, 1978). Moreover, normal intrusive thoughts are presumed to escalate into clinical obsessions through individuals' dysfunctional responses to the intrusions (Salkovskis, 1985, 1989; Rachman, 1997, 1998). Based on this formulation, a number of studies have been conducted to investigate various characteristics of non-clinical obsessions (Edwards & Dickerson, 1987; Freeston, Ladouceur, Thibodeau, & Gagnon 1991, 1992; Purdon & Clark, 1993, 1994; Reynolds & Salkovskis, 1991). In particular, cognitive appraisal and control strategies have been highlighted as potential contributors of intensifying the intrusions of unwanted thoughts and negative emotional reactions (Amir & Foa, 1997; Salkovskis, Wroe, Gledhill, Morrison, Forrester, Richards, Reynolds, & Thorpe, 2000).

Clark and Purdon (1995) suggested that unwanted intrusive thoughts can be best assessed by addressing content characteristics as well as process characteristics, noting that Beck's (1976)

content-specificity hypothesis is based on the similar notion that negative automatic thoughts with different content are related to different psychopathological conditions. In this respect, obsessions need to be examined with regard to their heterogeneous thought contents. Recently, an obsession model has been proposed, which presents two different subtypes of obsessions: autogenous obsessions and reactive obsessions (Lee & Kwon, 2003). Autogenous obsessions include sexual, aggressive, blasphemous, or repulsive thoughts, images, or impulses. These obsessions tend to be perceived as unacceptable and guilt-provoking and are also likely to elicit avoidant control strategies intended to dispel or control the thoughts themselves. Reactive obsessions includes thoughts, doubts, or concerns about contamination, mistakes, accidents, dissymmetry, or disarray, whose contents tend to be perceived as relatively realistic and likely to come true and are also likely to elicit confrontational control strategies intended to change uncomfortable external conditions associated with the thoughts (Lee & Kwon, 2003).

The present study sought to examine cognitive processes on sexual intrusive thoughts which are a representative type of autogenous thoughts. We conducted two independent studies: (a) Study 1 examined various sexual fantasies and intrusive thoughts reported from non-clinical college students, and (b) Study 2 compared sexual intrusive thoughts with other

types of intrusive thoughts with respect to cognitive appraisals and control strategies.

## Study 1

Study 1 was conducted to investigate various sexual thoughts experienced by Korean college students. The following questions were examined: (a) what contents of sexual thoughts are experienced by Korean college students, (b) how frequently and uncomfortably they experience sexual thoughts, and (c) what factors influence the experience of sexual thoughts and subsequent emotional reactions.

## Methods

### Participants

Two hundred and fifty one students (154 men and 97 women) enrolled in introductory psychology classes at Seoul National University participated in Study 1 for the fulfillment of research participation requirement. Participants ranged in age from 18 to 27 ( $M=20.98$ ,  $SD=2.00$ ) and no gender difference was observed in age.

### Measures

#### Sexual Thoughts Questionnaire (STQ)

The STQ was a self-report measure developed

incorporating items from the Hurlbert Index of Sexual Fantasy (Hurlbert & Apt, 1993) and the Sexual Daydreaming Scale (Singer & Antrobus, 1963, 1972) in order to evaluate various sexual thoughts experienced by non-clinical populations. Respondents are asked to rate how frequently they have experienced each of the 36 sexual thoughts based on a 7-point Likert scale (0 = never; 1 = once or twice ever; 2 = a few times a year; 3 = once or twice a month; 4 = once or twice a week; 5 = daily; 6 = frequently during the day) and how uncomfortable it is based on a 5-point Likert scale (0 = not at all; 1 = a little; 2 = mild; 3 = moderate; 4 = severe). The STQ consists of six sub-dimensions: (a) Exhibitionism or Voyeurism (e.g., thought of exposing oneself to others or peeping others); (b) Masturbation (e.g., thought of masturbating using some adult toys or in a public place); (c) Intercourse with Various Partners (e.g., thought of having sex with a prostitute or my boyfriend/girlfriend); (d) Sadism (e.g., thought of forcing somebody to engage in sexual activities); (e) Masochism (e.g., thought of being subjugated to forcible sex); and (f) Abnormal Sexual Activities (e.g., thoughts of engaging in sexual activity in religious meetings or obscene conversation through computers). Internal consistency coefficients (Cronbach's alpha) ranged from .70 to .84 for subscale frequency scores, and from .82 to .91 for subscale discomfort scores in the current sample.

### **Guilt Inventory (GI)**

The Guilt Inventory (Kugler & Jones, 1992) is a 45-item self-report measure assessing trait guilt (i.e., enduring guilt feelings over contexts), state guilt (i.e., current guilt feelings), and moral standard (i.e., beliefs concerning one's moral principle). Respondents are asked to rate each item on a 5-point Likert scale (0 = never; 1 = mostly negative; 2 = half and half; 3 = mostly positive; 4 = always). The Korean version of the GI has been reported to have the internal consistency coefficients ranging from .65 to .83 for subscale scores (Lee, S. H., 2000).

### **Social Desirability Scale (SDS)**

The Social Desirability Scale (Crowne & Marlowe, 1964) is a 33-item self-report measure assessing defensive attitudes. Each item is presented in a Yes/No format. The internal consistency coefficient of the Korean version of the SDS has been reported to be .76 (Lee, Y. S., 2000).

### **Sexual Opinion Survey (SOS)**

This is a 21-item self-report measure assessing attitudes toward sexuality (Fisher, Byrne, White, & Kelly, 1988). Respondents are asked to rate each item on a 7-point Likert scale (0 = absolutely disagree; 1 = somewhat disagree; 2 = disagree; 3 = half and half; 4 = agree; 5 = somewhat agree; 6 = absolutely agree) with higher scores indicating more positive and open attitudes toward sexuality. The internal

consistency coefficients of the SOS have been reported to be .52 (Byers, Purdon, & Clark, 1998).

### **Sexual Experience Questionnaire (SEQ)**

This is a 12-item self-report measure developed by the authors to assess the frequency of various sexual activities. The SEQ comprises six sub-dimensions: (a) Masturbation, (b) Sexual Intercourse with a Lover, (c) Sexual Intercourse with a Prostitute, (d) Watching Adult Movies, (e) Talking about Sexual Materials, and (f) Browsing around Adult Websites. Each item is presented twice to rate the respondent's engagement in the activity in the past and the present based on a 4-point Likert scale (0 = not at all; 1 = a little; 2 = somewhat; 3 = very). The SEQ has demonstrated high internal consistency (Cronbach's  $\alpha = .82$ ) in the current sample.

### **Procedure**

The participants were administered a battery of questionnaires, which took approximately 30 min. to complete.

### **Results and Discussion**

The means and standard deviations of the major STQ items are presented in Table 1 and Table 2, respectively for frequency and

Table 1. Frequency of sexual thoughts and its gender differences

	Total M (SD)	Male M (SD)	Female M (SD)	<i>t</i>
<b>Total score</b>	34.02(24.10)	44.74(23.37)	16.69(13.57)	10.41 ***
<b>Dimension of Exhibitionism and Voyeurism</b>	5.63(4.42)	7.36(4.25)	2.73(3.10)	9.18 ***
Thought of nude of someone whom I like	2.09(1.62)	2.86(1.43)	.85(1.03)	12.03 ***
Thought of showing my genital to the opposite sex	.90(1.13)	1.29(1.22)	.30( .63)	7.41 ***
Thought of peeping at good-looking entertainer's sex	.99(1.21)	1.38(1.32)	.35( .65)	7.08 ***
<b>Dimension of Masturbation</b>	6.93(5.28)	9.46(4.80)	2.82(3.11)	11.90 ***
Thought of masturbating in private	1.86(1.49)	2.44(1.43)	.93(1.04)	8.96 ***
Thought of being stimulated by someone of the opposite sex	1.21(1.36)	1.77(1.37)	.33( .76)	9.47 ***
Thought of masturbating in fantasizing sex with my lover	1.93(1.51)	2.53(1.43)	.98(1.13)	8.96 ***
<b>Dimension of Intercourse with Various Partners</b>	5.85(4.65)	7.77(4.70)	2.73(2.53)	9.57 ***
Thought of having sex with a prostitute	.87(1.20)	1.38(1.28)	.07( .33)	9.83 ***
Thought of having sex with the unacquainted	1.35(1.33)	1.88(1.36)	.49( .74)	9.24 ***
Thought of having sex with my boyfriend or girlfriend	1.79(1.78)	2.16(1.91)	1.20(1.38)	4.27 ***
<b>Dimension of Sadism</b>	5.04(5.04)	7.10(5.28)	1.73(2.17)	9.38 ***
Thought of having sex with someone whom I forced to do	1.38(1.26)	1.72(1.36)	.84( .87)	5.62 ***
Thought of harassing someone sexually by groups	.78(1.08)	1.11(1.21)	.25( .54)	6.58 ***
Thought of raping someone in the street	.99(1.27)	1.55(1.31)	.09( .41)	10.44 ***
<b>Dimension of Masochism</b>	7.32(4.70)	8.42(4.97)	5.55(3.73)	4.86 ***
Thought of being seduced by someone who I don't know	1.89(1.27)	2.29(1.26)	1.26( .98)	6.87 ***
Thought of being driven to sex by someone whom I have dreamed of	1.87(1.34)	2.21(1.39)	1.38(1.04)	5.47 ***
Thought of being raped with horror	.65( .98)	.52(1.00)	.85( .92)	-2.65 **
<b>Dimension of Abnormal Sexual Activities</b>	3.26(3.44)	4.40(3.64)	1.44(2.18)	7.19 ***
Thought of having sex with my relative or my family member	.55( .85)	.75( .97)	.24( .47)	4.81 ***
Thought of having sexual activities in public place	1.07(1.17)	1.39(1.23)	.54( .87)	5.88 ***
Thought of having a conversation looking each other's naked body through computers	.59(1.03)	.93(1.18)	.04( .25)	7.24 ***

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 2. Discomfort on sexual thoughts and its gender differences

	Total M (SD)	Male M (SD)	Female M (SD)	<i>t</i>
<b>Total score</b>	87.05(31.13)	77.44(27.13)	103.31(31.00)	-6.72***
<b>Dimension of Exhibitionism and Voyeurism</b>	13.56(5.45)	12.06(4.66)	16.17(5.58)	-6.16***
Thought of showing my genital to the opposite sex	2.51(1.32)	2.07(1.29)	3.24(1.00)	-7.53***
Thought of being peeped at my naked body by someone	2.58(1.25)	2.38(1.25)	2.96(1.13)	-3.62***
Thought of a naked body of an authority figure	2.85(1.30)	2.89(1.28)	2.85(1.29)	0.25
<b>Dimension of Masturbation</b>	13.08(5.96)	10.51(4.69)	17.20(5.55)	-10.04***
Thought of masturbating in front of other people	3.31(1.05)	3.13(1.10)	3.57(0.93)	-3.27**
Thought of masturbating using some adult toys	2.46(1.28)	2.06(1.17)	3.14(1.14)	-7.07***
Thought of masturbating in a public place like a rest room	2.43(1.28)	1.97(1.16)	3.16(1.11)	-7.94***
<b>Dimension of Intercourse with Various Partners</b>	14.44(5.34)	12.93(4.94)	16.98(5.08)	-6.12***
Thought of having sex with a prostitute	2.39(1.34)	1.96(1.25)	3.14(1.12)	-7.46***
Thought of having impulsive sex with someone whom I respect or love	2.49(1.40)	2.52(1.44)	2.45(1.35)	0.35
Thought of having sex with an animal	3.57(.91)	3.51(0.97)	3.66(.81)	-1.27
<b>Dimension of Sadism</b>	15.84(6.26)	14.03(5.94)	18.83(5.65)	-6.22***
Thought of having sex sadistically	3.06(1.21)	2.84(1.27)	3.43(1.02)	-3.76***
Thought of raping someone in the street	2.36(1.31)	1.95(1.17)	3.04(1.23)	-6.97***
Thought of forcing somebody to have sex with the other one in front of me	2.86(1.26)	2.54(1.26)	3.38(1.08)	-5.36***
<b>Dimension of Masochism</b>	12.18(5.59)	10.60(5.03)	14.78(5.51)	-6.01***
Thought of being forced to engage in sexual activities	2.71(1.29)	2.57(1.28)	2.99(1.26)	-2.53*
Thought of being sexually harassed by a group of people	2.67(1.28)	2.32(1.27)	3.20(1.11)	-5.56***
Thought of being raped with horror	3.04(1.22)	2.82(1.29)	3.39(1.03)	-3.62***
<b>Dimension of Abnormal Sexual Activities</b>	17.71(5.49)	17.03(5.23)	19.01(5.65)	-2.77**
Thought of having sex with someone of same sex	3.30(1.21)	3.53(.99)	2.94(1.40)	3.85***
Thought of having sex with my relative or my family member	3.40(1.04)	3.30(1.11)	3.59(.86)	-2.12*
Thought of having sex in a church or in a religious meeting	3.27(1.19)	3.23(1.19)	3.43(1.12)	-1.29

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

discomfort. Significant gender differences emerged in the total scores of the frequency and discomfort. The total frequency score was higher in males relative to females,  $t = 10.41$ ,  $p < .001$ , whereas the total discomfort score was higher in females relative to males,  $t = -6.72$ ,  $p < .001$ .

Table 1 and 2 show the frequency and discomfort on the major sexual thoughts measured by the STQ. In general, males appear to experience various sexual thoughts more frequently than females do. Females tend to experience frequently the sexual thoughts concerning masochistic or passive sexual activities. Males and females show a tendency to experience high discomfort on the sexual thoughts concerning incest, homosexuality, and zoophilia.

Table 3 presents zero-order correlations among the measures. Results indicated (a) the SDS (i.e., social desirability) was positively associated with STQ discomfort ratings ( $r = .18$ ;  $p < .01$ ); (b) the SOS (i.e., positive sexual attitudes) and the SEQ (i.e., past sexual experiences) were positively associated with STQ frequency ratings ( $r = .67$ ,  $p < .01$ ;  $r = .71$ ,  $p < .01$ ), but negatively associated with STQ discomfort ratings ( $r = -.66$ ,  $p < .01$ ;  $r = -.47$ ,  $p < .01$ ); and (c) the Moral Standard subscale of the GI was positively associated with STQ discomfort ratings ( $r = .22$ ;  $p < .01$ ), but negatively associated with STQ frequency ratings ( $r = -.17$ ;  $p < .01$ ).

To our knowledge, this is the first study to investigate various sexual thoughts experienced by Korean college students. A wide range of endorsement throughout the entire STQ items

Table 3. Zero-correlations between the STQ, the GI, the SDS, and the SOS

	STQ-F	STQ-D	GI-total	GI-S	GI-M	GI-T	SDS	SOS
STQ-D	-.55**							
GI-total	.09	.02						
GI-S	.1	-.06	.82**					
GI-M	-.17**	.22**	.48**	.14*				
GI-T	.20**	-.05	.89**	.68**	.11			
SDS	-.13	.18**	-.28**	-.24**	.04	-.36**		
SOS	.67**	-.66**	-.06	.01	-.38**	.12	-.17**	
SEQ	.71**	-.47**	.05	.09	-.21**	.18	-.07	.70**

\*  $p < .05$ , \*\*  $p < .01$

STQ-F = Sexual thought questionnaire-frequency; STQ-D = Sexual thought questionnaire-discomfort; GI = Guilt inventory; GI-S = State guilt; GI-M = Moral standards; GI-T: Trait guilt; SDS = Social desirability scale; SOS = Sexual opinion survey; SEQ = Sexual experience questionnaire

suggests that sexual thoughts are quite common experiences for both male and female students. Males, relative to females, experienced sexual thoughts more frequently but less uncomfortably. Females reported more sexual thoughts involving passive activities than the other types of sexual thoughts in the STQ. Women's tendency to experience more sexual thoughts involving passivity than other types of sexual thoughts may reflect a way of avoiding or reducing guilt feelings fostered by conventional social context that has suppressed open expressions of female sexuality (Strassberg & Lockerd, 1998). Furthermore, our investigation revealed that people possessing higher social desirability, more negative sexual attitudes, less sexual experiences in the past, and higher moral standards are likely to experience greater discomfort about their sexual thoughts. In contrast, positive sexual attitudes and past sexual experiences demonstrated negative association with discomfort but positive association with frequency of sexual thoughts. Taken together, sexual thoughts are common experiences in non-clinical college students and appear to be influenced by several psychological factors.

## Study 2

Study 2 was designed to examine sexual intrusive thoughts with respect to cognitive appraisals and control strategies in comparison

with other types of intrusive thoughts. In particular, sexual thoughts were compared with aggressive thoughts and reactive thoughts (see Lee & Kwon, 2003). We hypothesized that (a) the sexual thoughts would elicit higher moral thought-action fusion, greater control over thought, and more frequent avoidant and self-blaming control strategies compared to aggressive or reactive thoughts; (b) guilt feelings, negative attitudes to sexual stimuli, and/or lack of past sexual experiences would render cognitive appraisal and neutralization extreme.

## Methods

### Participants

Two hundred and thirty two undergraduate students (85 men and 147 women) enrolled in introductory psychology classes at Seoul National University participated in Study 2 in fulfillment of research participation requirement. They ranged in age from 19 to 32 ( $M = 22.08$ ,  $SD = 2.42$ ) and no gender difference was observed in age.

### Measures

#### Appraisal and Control Strategies Questionnaire (ACSQ)

The ACSQ is a self-report measure developed by Lee and Kwon (2003) to evaluate individuals'



appraisals and control strategies in response to various unwanted intrusive thoughts. For this study, the ACSQ was modified by authors in terms of thought contents and items of appraisals and control strategies. In the modified ACSQ, 24 intrusive thoughts that include 3 different types of contents were presented for rating cognitive appraisals and control strategies on them. The 24 intrusive thoughts are (a) four categories of sexual thoughts, i.e., masochistic sexual behaviors (thought of being raped with horror; thought of being forced to engage in sexual activities; thought of being driven to sex by someone who I don't know), sadistic sexual behaviors (thought of having sex with someone whom I forced to do; thought of having sex sadistically; thought of forcing somebody to have sex with the other one in front of me), sexual behaviors with an inappropriate partner (thought of having sex with my relative or my family member; thought of having sex in a church or in a religious meeting; thought of having sex with someone of same sex or under age), and perverted sexual behavior (thought of having sexual activities in public place; thought of having group sex with several homosexuals and heterosexual; thought of masturbating using some adult toys), (b) two categories of aggressive thoughts, i.e., violent behaviors toward nonhuman objects (thought of throwing something to the window; thought of hurting a deluxe car with a sharpener; thought of tearing a borrowed book to pieces) and violent behaviors toward other

people (thought of swearing at others; thought of insulting others; thought of hitting and hurting others), (c) two categories of reactive thoughts, i.e., contamination or contagion (thought of catching a sexually transmitted disease by touching a toilet seat or tap; thought of being contaminated by touching publically handled items; thought of catching a infectious disease through unsanitary surroundings) and mistakes or accidents (thought of leaving the stove or curling iron on; thought of leaving the house unlocked; thought of letting out my private information through Internet).

Respondents are asked to rate 12 cognitive appraisal items and 12 control strategy items based on 7-point Likert scale in response to each of the 24 intrusive thoughts. The 12 appraisal items consist of four dimensions: (a) Moral Thought-Action Fusion (Moral TAF: Having this thought means that I have a flaw in morality.; Having this thought is as bad as doing that really.; If others come to know my thought, they will criticize me.), (b) Likelihood Thought-Action Fusion (Likelihood TAF: Having this thought can make it come true in real life.; Having this thought means that I want to realize that in real life.; Having this thought means that this thought cannot be ignored.), (c) Control over Thoughts (To get rid of discomfort, I must control over this thought.; Having this thought means that I cannot control over my mind.; Because I cannot get rid of this thought, I am feeble-minded.), and (d) Inflated

Responsibility (If I don't do anything, I will be responsible for something negative.; Because I don't want this thought to happen, I must do something.; If I don't do anything, something negative will happen.) (See Obsessive Compulsive Cognition Working Group, 1997). These appraisal items are preceded by the following instructions, "If these thoughts come into your mind recurrently, how would you perceive them?". The 12 control strategy items form four dimensions: (a) Avoidant Strategies (Saying "stop" to myself, or repressing that thought; Thinking of another thought or opposite image; Distracting myself by doing something), (b) Confrontational Strategies (Seeking information from or talking about the thought with others; Taking an action to put things back to safe or desired state; Trying to reassure myself from others), (c) Neglecting Strategies (Going on my routine without anything else; Self-reassuring that the thought is meaningless; Having no needs to do anything), and (d) Self-Blaming Strategies (Self-blaming that I have this thought; Reflecting on my belief or morality; Examining myself from a viewpoint of my personality). These control strategy items are given with the following instruction, "If these thoughts come into your mind recurrently, how frequent will you use each of the following coping methods?". Internal consistency coefficients (Cronbach's alpha) of the ACSQ ranged from .75 to .83 for the four dimensions of appraisals, and from .76 to .87 for the four dimensions of control strategies

in the current sample.

In addition, participants were also administered the Guilt Inventory (GI), the Sexual Opinion Survey (SOS), and Sexual Experience Questionnaire (SEQ), which are the same instruments included in Study 1.

## Results and Discussion

Comparison between sexual, aggressive, and reactive thoughts in appraisal and control strategy

We conducted orthogonal group comparisons to examine whether participants' responses differ according to the three thought domains. Contrast 1 compared autogenous (i.e., sexual and aggressive) thoughts with reactive thoughts, and Contrast 2 compared sexual thoughts with aggressive thoughts, with respect to cognitive appraisals and control strategies (See Table 4).

Significant differences between thought contents emerged from Contrast 1. Participants scored significantly higher on Moral TAF,  $F(1, 224) = 490.59, p < .001$ , Likelihood TAF,  $F(1, 224) = 278.35, p < .001$ , Control over Thoughts,  $F(1, 224) = 20.85, p < .001$ , Avoidant Strategies,  $F(1, 224) = 35.01, p < .001$ , Self-blaming Strategies,  $F(1, 224) = 113.92, p < .001$ , and Neglecting Strategies,  $F(1, 224) = 14.50, p < .001$ , in response to autogenous thoughts than to reactive thoughts. Contrast 2 revealed several significant differences

Table 4. Planned comparison tests between the intrusive thoughts

		Sexual <i>intrusive</i> <i>thoughts</i> M(SD)	Aggressive <i>intrusive</i> <i>thoughts</i> M(SD)	Reactive <i>intrusive</i> <i>thoughts</i> M(SD)	Mean Differences	F
Moral	Contrast 1				9.92	490.59 ***
TAF	Contrast 2	14.73(9.02)	12.71(7.98)	3.80(4.23)	2.02	20.16 ***
Likelihood	Contrast 1				7.2	278.35 ***
TAF	Contrast 2	12.82(7.93)	16.42(7.74)	7.42(5.46)	-3.6	78.10 ***
Control	Contrast 1				2.39	20.85 ***
over Thoughts	Contrast 2	12.67(8.76)	11.21(8.09)	9.55(7.22)	1.46	10.65 **
Inflated	Contrast 1				-.92	3.87 *
Responsibility	Contrast 2	9.31(8.31)	11.78(8.91)	11.47(8.45)	-2.47	34.42 ***
Avoidant	Contrast 1				3.08	35.01 ***
Strategies	Contrast 2	19.36(8.31)	16.84(8.45)	15.02(8.53)	2.52	32.79 ***
Self-blaming	Contrast 1				5.41	113.92 ***
Strategies	Contrast 2	14.91(9.10)	13.85(8.34)	8.97(6.97)	1.06	4.83 ***
Confrontational	Contrast 1				-6.6	195.12 **
Strategies	Contrast 2	7.75(6.97)	10.48(7.82)	15.72(7.99)	-2.73	42.64 ***
Neglecting	Contrast 1				1.67	14.50 ***
Strategies	Contrast 2	16.74(7.87)	16.61(7.70)	15.01(7.85)	.13	.26

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Contrast 1 : Difference between sexual / aggressive intrusive thoughts and reactive intrusive thoughts

Contrast 2 : Difference between sexual intrusive thoughts and aggressive intrusive thoughts

between sexual thoughts and aggressive thoughts. With respect to cognitive appraisals, participants scored significantly higher on Moral TAF,  $F(1, 224) = 20.16$ ,  $p < .001$ , and Control over Thoughts,  $F(1, 224) = 10.65$ ,  $p < .001$ , in response to sexual thoughts than to aggressive thoughts. In contrast, participants scored significantly higher on Likelihood TAF,  $F(1, 224) = 78.10$ ,  $p < .001$ , and Inflated Responsibility,  $F(1, 224) = 34.42$ ,  $p < .001$ ,

in response to aggressive thoughts relative to sexual thoughts. Moreover, with respect to control strategies, participants selected more Avoidant Strategies,  $F(1, 223) = 32.79$ ,  $p < .001$ , and Self-blaming Strategies,  $F(1, 223) = 4.83$ ,  $p < .05$ , in response to sexual thoughts, whereas they selected more Confrontational Strategies,  $F(1, 223) = 42.64$ ,  $p < .001$ , in response to aggressive thoughts.

These findings were consistent with those

reported by Lee and Kwon (2003) suggesting significant differences between autogenous and reactive thoughts in terms of emotional reactions, cognitive appraisals, and control strategies. Furthermore, our findings revealed that the two representative autogenous types of thoughts (i.e., sexual thoughts and aggressive thoughts) differed significantly on several dimensions of cognitive appraisals and control strategies.

Comparison between upper and lower groups in guilt feeling, sexual belief, and sexual experience

We conducted group comparisons to examine whether guilt feeling, sexual belief, and sexual experience influence cognitive appraisals and control strategies on sexual thoughts. Participants were divided into two groups, i.e., upper 30% group and lower 30% group based on their

Table 5. Differences between groups in cognitive appraisals and control strategies on sexual thoughts

Differential Scores <sup>a</sup>		Guilt feeling		Sexual Belief		Sexual Experience	
		Upper Group	Lower Group	Upper Group	Lower Group	Upper Group	Lower Group
Moral	M(SD)	17.51(8.78)	10.13(7.40)	10.08(7.12)	18.16(8.65)	13.13(8.68)	15.76(7.40)
TAF	<i>t</i>	4.88 ***		-6.02 ***		-1.69	
Likelihood	M(SD)	13.83(8.52)	10.88(6.31)	13.20(8.29)	12.36(7.98)	13.35(8.19)	12.04(6.31)
TAF	<i>t</i>	2.29 *		0.61		0.98	
Control	M(SD)	15.59(9.02)	8.19(7.21)	8.85(7.49)	15.84(8.84)	11.13(8.85)	14.01(9.18)
Over Thoughts	<i>t</i>	5.28 ***		-5.04 **		-1.93	
Inflated	M(SD)	11.05(8.51)	6.10(6.19)	7.96(8.36)	10.26(8.79)	8.70(8.20)	9.00(8.44)
Responsibility	<i>t</i>	3.87 ***		-1.58		-0.22	
Avoidant	M(SD)	20.46(8.36)	16.75(8.41)	16.70(8.76)	21.85(8.36)	18.07(9.21)	20.58(8.09)
Strategies	<i>t</i>	2.58 *		-3.54 **		-1.74	
Self-blaming	M(SD)	17.55(8.53)	10.69(8.17)	10.73(8.67)	17.70(8.55)	12.52(9.08)	16.55(8.81)
Strategies	<i>t</i>	4.79 ***		-4.77 **		-2.71 **	
Confrontational	M(SD)	6.78(6.30)	7.15(6.14)	6.85(7.07)	7.86(6.99)	6.53(6.80)	7.84(6.82)
Strategies	<i>t</i>	-0.35		-0.85		-1.16	
Neglecting	M(SD)	17.04(8.50)	17.01(7.84)	17.68(7.32)	16.74(7.65)	17.75(8.07)	16.33(8.37)
Strategies	<i>t</i>	-0.02		0.74		1.04	

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

scores of the GI, the SOS, or the SEQ. Table 5 presents several significant differences between upper and lower groups. With respect to cognitive appraisals, participants who have high guilt feeling and negative sexual beliefs scored significantly higher on most of the dimensions of cognitive appraisals in response to sexual thoughts relative to reverse group participants.

Moreover, with respect to control strategies, participants who have high guilt feeling and negative sexual beliefs selected more Avoidant Strategies ( $t = 2.58, p < .05$ ;  $t = -3.54, p < .01$ ) and Self-blaming Strategies ( $t = 4.79, p < .001$ ;  $t = -4.77, p < .01$ ) in response to sexual thoughts relative to reverse group participants. However, between upper and lower

Table 6. Group Differences between sexual and aggressive thoughts in cognitive appraisals and control

Differential Scores <sup>a</sup>		Guilt feeling		Sexual Belief		Sexual Experience	
		Upper Group	Lower Group	Upper Group	Lower Group	Upper Group	Lower Group
Moral	M(SD)	3.32(7.13)	-.97(5.35)	-.85(5.87)	3.74(6.44)	.40(7.03)	2.92(7.11)
TAF	<i>t</i>	3.98 ***		-4.44 ***		-2.14 *	
Likelihood	M(SD)	-4.49(6.45)	-4.16(6.17)	-3.88(6.69)	-3.70(5.43)	-3.86(7.44)	-3.77(5.54)
TAF	<i>t</i>	-0.3		-0.18		0.08	
Control	M(SD)	2.51(7.15)	-.39(6.14)	-1.53(5.83)	4.01(5.38)	-.71(7.95)	3.15(6.36)
Over Thoughts	<i>t</i>	2.55 *		-5.84 ***		-3.22 **	
Inflated	M(SD)	-2.34(6.89)	-3.38(6.03)	-4.32(6.50)	-.77(5.27)	-4.98(6.64)	-1.28(6.22)
Responsibility	<i>t</i>	0.93		-3.51 **		-3.45 **	
Avoidant	M(SD)	3.49(7.27)	.81(6.48)	-.27(6.81)	3.70(4.92)	1.57(7.89)	3.45(5.65)
Strategies	<i>t</i>	2.27 *		-3.92 ***		-1.65	
Self-blaming	M(SD)	2.36(8.14)	-1.15(6.84)	-1.80(6.95)	2.45(7.12)	-.92(6.73)	2.25(7.58)
Strategies	<i>t</i>	2.73 **		-3.56 **		-2.66 **	
Confrontational	M(SD)	-3.24(6.44)	-3.39(6.61)	-3.39(6.26)	-2.35(6.67)	-3.71(6.31)	-3.22(6.55)
Strategies	<i>t</i>	0.13		-0.96		-0.46	
Neglecting	M(SD)	.32(4.38)	.16(4.80)	.59(5.20)	-.74(4.21)	.35(5.21)	.36(4.25)
Strategies	<i>t</i>	0.21		1.66		-0.01	

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

<sup>a</sup>It means scores which were made by subtracting scores in response to aggressive thoughts from scores in response to sexual thoughts.

groups of sexual experience, no significant differences were observed.

We further examined whether these group differences were specific only to sexual intrusive thoughts. The amount of differences between sexual and aggressive thoughts in scores of each cognitive appraisal and control strategy are compared between upper and lower groups on guilt feelings, sexual beliefs, or sexual experience. The results are shown in Table 6, which revealed several significant differences between upper and lower group participants. With respect to cognitive appraisals, participants who have higher guilt feelings, more negative sexual belief, or less sexual experience showed bigger differences between responses of sexual and aggressive thoughts on Moral TAF ( $t = 3.98, p < .001$ ;  $t = -4.44, p < .001$ ;  $t = -2.14, p < .05$ ) and Control over Thoughts ( $t = 2.55, p < .05$ ;  $t = -5.84, p < .001$ ;  $t = -3.22, p < .01$ ) relative to the reverse group. Moreover, with respect to control strategies, participants who have high guilt feeling and negative sexual belief demonstrated bigger differences between responses of sexual and aggressive thoughts on Avoidant Strategies ( $t = 2.27, p < .05$ ;  $t = -3.92, p < .001$ ) and Self-blaming Strategies ( $t = 2.73, p < .01$ ;  $t = -3.56, p < .01$ ) relative to reverse group participants.

These findings suggest that guilt feeling, sexual belief, and sexual experience influence the cognitive appraisals and control strategies on

sexual intrusive thoughts. The influences of these individual characteristics seem to be stronger on sexual thoughts than on aggressive thoughts.

## General Discussion

We conducted two studies to investigate psychological experiences on sexual thoughts. Study 1 demonstrated significant gender differences in experiencing various sexual thoughts. Males reported higher frequencies of sexual thoughts relative to females, whereas females reported greater discomfort of having the sexual thoughts relative to males. These results are consistent with the findings reported by several authors (Dubois, 1997; Hsu, Kling, Kessler, Knapke, Diefenbach, & Elias, 1994; Iwawaki & Wilson, 1983; Wilson & Lang, 1981). In particular, females tend to more frequently experience sexual thoughts concerning passive sexual activities. Moreover, previous engagements in sexual activities and openness toward sexuality were shown to be positively associated with the frequency of sexual thoughts, but negatively associated with the discomfort of sexual thoughts.

The Study 2 findings suggest that sexual intrusive thoughts tend to elicit more maladaptive appraisals and controls than other types of intrusive thoughts do. Lee and Kwon (2003) reported significant differences between autogenous thoughts and reactive thoughts in

terms of emotional reactions, cognitive appraisals, and control strategies.

Autogenous thoughts including sexual, aggressive, blasphemous, or repulsive thoughts, images, or impulses tend to be perceived as unacceptable and guilt-provoking and are also likely to elicit avoidant control strategies intended to dispel or control the thoughts themselves. The present study support the results of Lee and Kwon (2003) by demonstrating that autogenous thoughts including sexual thoughts and aggressive thoughts elicited higher moral thought-action fusion, likelihood thought-action fusion, control over thoughts, avoidant strategies, self-blaming strategies, and neglecting strategies than reactive thoughts do. Furthermore, the present study suggests that sexual thoughts differ from aggressive thoughts with respect to cognitive appraisal and control strategies. Study 2 showed that, in cognitive appraisals, sexual thoughts elicited higher moral thought-action fusion and control over thoughts and lower likelihood thoughts-action fusion and responsibility, compared to aggressive thoughts. In control strategies, sexual thoughts elicited more avoidant strategies and self-blaming strategies and less confrontational strategies than aggressive thoughts. These findings revealed that the two representative autogenous types of thoughts (i.e., sexual thoughts and aggressive thoughts) differed significantly on several dimensions of cognitive appraisals and control strategies.

Study 2 also suggests that individual characteristics such as guilt feeling, sexual belief, and sexual experience influence cognitive appraisals and control strategies on sexual intrusive thoughts. People with high guilt feeling, negative sexual belief, and less sexual experience showed higher moral thought-action fusion, control over thoughts, avoidant strategies and self-blaming strategies on sexual thoughts. These individual characteristics appeared to have stronger influences on sexual thoughts than aggressive thoughts in subsequent cognitive appraisals and control strategies.

In summary, the present study suggests that intrusion of sexual thoughts in people with high guilt feeling, negative sexual belief, and less sexual experience is likely to develop OCD by eliciting higher moral thought-action fusion, control over thoughts, avoidant strategies, and self-blaming strategies. It means that an individual tends to select a different way of cognitive appraisals and control strategies according to the content characteristics of intrusive thoughts as well as their individual characteristics. These results appear to not only support the distinction of the various intrusive thoughts by their contents but also contribute to the understanding of the OCD symptom's development from the various sexual intrusive thoughts.

However, several limitations of the present study should be noted. First, the results of the present study are based on the data obtained

from non-clinical college students. Therefore we should be cautious to generalize the findings to clinical populations, and should be replicated with OCD patients. Second, the findings of study 2 should be interpreted with caution because the data was not based on actual experiences of obsessions. We need to reexamine the findings with clinical obsessions. Lastly, we used the newly developed questionnaires (i.e., the STQ, the SEQ, and the ACSQ) in the present studies. Future studies are needed to examine in greater detail the psychometric properties of these measures.

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## 성적인 침투적 사고에 대한 인지적 평가와 통제방략

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강박장애에 대한 인지행동적 모델은 강박사고가 침투적 사고에 대한 잘못된 평가와 비효과적인 중성화 노력에 의해서 유발된다고 가정한다. 본 연구의 목적은 성적인 침투적 사고에 대한 인지적 평가와 통제방략을 비(非)성적인 침투적 사고에 대한 평가 및 통제방략과 비교하는 것이다. 연구 1에서는 대학생 집단이 경험하는 다양한 성적인 사고의 빈도와 불편감 정도를 조사하였다. 죄책감, 성적 신념, 성 경험이 성적 사고의 빈도와 불편감 정도에 영향을 미치는 것으로 나타났다. 연구 2는 성적 사고, 공격적 사고, 그 밖의 다른 침투적 사고가 인지적 평가와 통제방략에 있어서 어떤 차이를 나타내는지 알아보기 위한 것이다. 연구 결과, 성적인 침투적 사고는 공격적 사고나 다른 침투적 사고에 비해서 도덕적 사고 행동 융합과 사고에 대한 통제를 더 많이 초래할 뿐만 아니라 회피적이고 자기질책적인 통제방략을 더 많이 유발하는 것으로 나타났다. 이러한 결과는 성적인 침투적 사고로부터 강박증상이 발달하는 과정을 이해하는 데에 기여할 것으로 기대된다.

주요어 : 성적인 침투적 사고, 인지적 평가, 통제 방략