

정신분열병 환자들의 정서조절과정에 있어서의 특성

이 수 정

경기대학교 교양학부

The characteristics of schizophrenics in emotional regulation

Soo Jung Lee

Division of General Studies, Kyonggi University

In order to explore pathological characteristics of emotional regulation, the differences of affective primacy effects have been observed between schizophrenics and normal subjects. The transference of priming effect on rating tasks has been found for normal subjects only at suboptimal conditions, yet schizophrenics presented the transference of priming effect at optimal as well as suboptimal conditions. Finally, the effects this malfunction of emotional regulation would make on emotional pathology of schizophrenics is discussed.

Long before Cognitive Science was shaped as an independent research area, the interest in human emotional processing has been always a focus of psychological problems in the clinical field. Other than Freud, many clinicians (Bleuler, 1950; Rado, 1953) regarded emotional deficits more as diagnostic symptoms of schizophrenics than hallucinations. Generally, schizophrenics suffer from "flat" emotions and incapability to differentiate emotional cues; many researchers have observed the discrepancy between experienced emotion and emotional expression. Kring and Neal(1996) found schizophrenics didn't verbally report much emotional arousal,

but the physiological evidence obtained from them showed tremendous amount of arousal. Furthermore, some psychiatrists (Brenner, Roder, Hodel, & Kienzle, 1994; Gjerde, 1983) point out that without emotional rehabilitation, cognitive treatment effects cannot be anticipated since emotional stress makes cognitive function deteriorated.

With recent findings of schizophrenics' incapability of cognitive regulation (Kwapil, Hegley, Chapman, & Chapman, 1990; Tipper, 1985), facts of emotional discrepancy already found make the hypothesis possible that the most serious problems could occur not by instinctual emotional encoding, but by later

emotional processing and regulation. Therefore, this study applied emotional priming experiments, designed by Murphy and Zajonc(1993), to observe the immediate emotional responses of perceivers.

Experiment 1

The purpose of this experiment is to replicate the affective priming effect that Murphy and Zajonc(1993) had found. Their priming paradigm had three stages which consist of affective priming, presentation of irrelevant target characters, and attractiveness rating onto the targets. For normal subjects, anticipated hypotheses were these: First, there would be an interaction effect between presentation duration and valence of priming stimuli. At subliminal presentation condition, the valence of priming stimuli would produce an assimilation effect on later evaluation tasks of irrelevant neutral target characters. More specifically, the shape of a target character would be evaluated more positively after presenting smiling faces as affective priming compared to neutral as well as negative priming conditions, after frowning faces as negative primers, target characters would be judged less attractively. On the other hand, when priming facial pictures were present long enough to be recognized, subjects would discount the activated emotional priming effect when they were asked to evaluate the irrelevant Hindu character. The assimilation effect caused by the valence of priming emotional stimuli



Figure 1. Pictures of facial expression used as priming stimuli

would not appear in optimal conditions.

Methods

Subjects. Forty students participated in experiment 1, twenty of them were randomly allocated into suboptimal conditions and the rest of allocated to optimal conditions.

Stimuli. A set of priming stimulus presentations: a priming stimulus, two pictures of checkers for backward masking, and a target stimulus. All a subject had to do was evaluating the attractiveness of the shape of unknown characters, presented as targets. As priming stimuli, pictures of facial expression were used, which had been rated almost equally attractive. As a neutral condition, alphabet characters were shown as priming stimuli.

Procedure. This experiment was introduced to subjects under the title, 'Attractiveness Evaluation of Hindu Characters for Designing Advertisement Drafts'.

Suboptimal condition priming stimuli were presented for 10msec durations ten times each. After 1000msec, Hindu characters were presented as evaluation targets; when a subject determined if he or she liked the character, the next set of stimuli were given, and total values of responses computed from ten evaluation tasks were recorded as dependent measures. The total number of priming session was thirty (10 for positive, 10 for negative, and 10 for neutral priming) for each subject. and at optimal conditions, the whole procedure was the same except for the priming presentation duration of 1000msec.

Result

The experiment consisted of 2(suboptimal/optimal levels of priming presentation) * 3(positive/ negative/ neutral valences of priming stimuli) conditions. Among these variables, first one was a 'between variable' and second one was an 'within variable'. The final dependent measure was computed by aggregating the ratings of ten trials of each valence priming condition. Table 1 shows the average rating toward the presented Hindu characters for each valence condition.

A main effect of presentation duration was not statistically significant, but that of priming valence was statistically significant, $F(2, 76) = 23.14, p < .001. \eta^2$ for this effect was .57 and statistical power was 1.00. Post hoc tests of valence main effect presented that Hindu characters were evaluated more

Table 1. Mean attractiveness ratings on Hindu characters

valence of priming	suboptimal condition	optimal condition
positive	7.15(1.73)	4.96(2.18)
neutral	4.95(2.28)	4.20(2.23)
negative	3.55(1.96)	4.60(1.79)

() : SD

favorably in positive priming conditions, $F(1, 38) = 22.21, p < .001$, on the other hand, evaluated more unfavorably in negative conditions, compared to neutral ones, $F(1, 38) = 5.65, p < .05$, Average attractiveness of positive priming condition was 6.56(SE = .31), that of neutral priming condition was 4.57(SE = .36), and that of negative priming condition was 4.08(SE = .30).

Duration and the valence of priming stimuli produced an interaction effect, $F(2, 76) = 4.73, p < .05. \eta^2$ for that effect was .24 and power was .84. In order to investigate how this interaction

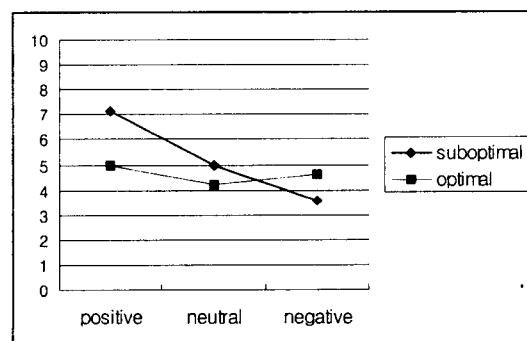


Figure 2. Mean attractiveness ratings in optimal and suboptimal priming conditions

effect was produced, simple effect was explored. Results are presented in Figure 2. In an optimal condition where the presence of priming stimuli was recognizable, the emotional value of priming stimuli couldn't make any significant effect on subsequent ratings of Hindu characters, $F(2, 38) = .91$, $p \geq .346$. but ratings after priming of respective valence were statistically different at suboptimal condition, $F(2, 38) = 32.25$, $p < .001$. Mean attractiveness ratings in optimal and suboptimal priming conditions

The analyses of simple effects showed that at suboptimal condition Hindu characters were evaluated more favorably after positive priming, $F(1, 19) = 21.59$, $p < .001$, and Hindu characters were rated less favorably at negative priming condition, $F(1, 19) = 9.00$, $p < .01$, compared to neutral priming condition. Furthermore in order to investigate if the rating was influenced by duration respectively in each valence of priming condition, t tests were performed. At positive priming condition, $t(19) = 3.91$, $p < .001$, as well as at negative priming condition, $t(19) = -1.77$, $p < .10$ suboptimal priming produced stronger assimilation effects than optimal priming.

Last, a recognition test performed for the purpose of confirming if the priming stimuli presented subliminally were recognizable. On the responses of two options - forced choice questions the average correction rate was .38(SD = .16), which was statistically lower than the chance level.

Discussion

To summarize the results of experiment 1,

without recognition for subjects to be exposed to emotional priming cues, an assimilation effect was found but this affective priming effect disappeared when subjects realized the presence of priming cues. It can be interpreted that the instruction including the task of the shape of unfamiliar characters as objectively as possible made subjects discount the contaminating effect of irrelevant emotional cues presented previously to the targets' presentation.

Experiment 2

Researchers(Tipper, 1985; Kwapil, Hegley, Chapman, & Chapman, 1990) reported one of the most conspicuous characteristics of schizophrenics is incapability to regulate the effect of priming. They showed schizophrenics had a hard time working at negative priming tasks correctly. These facts make the hypothesis that the discount effect found at optimal priming condition for normals in experiment 1 does not appear for schizophrenics plausible. At the same time, based on research facts to advocate that physiological responsivity of schizophrenics to emotional cues are still working(Kring & Neal, 1996), we expect that they once encode emotional values of external stimuli, but cannot manage emotional arousal. Therefore, in experiment 2, in order to investigate emotional management of schizophrenics, optimal affect priming tasks were only applied to schizophrenics compared to the response characteristics of normals.

Methods

Subjects. Ten schizophrenics who were hospitalized at Kwangju Severance Hospital, participated in this experiment. All of them were diagnosed as schizophrenics according to DSM-IV, and their mean age was 38.1(SD = 3.01). Their intelligence level measured by K-WAIS was over 90, so that they didn't have any problem understanding instructions in this experiment. However one of them left during the experimental session since his negative symptoms were aggravated. Finally, the data from 5 female and 4 male patients was analyzed. Their average PANSS total score was 64.4(SD = 17.8), positive symptom average was 14.3(SD = 5.7), negative symptom average was 14.7(SD = 6.7), and mean of general symptoms was 31.0(SD = 6.8).

Ten graduate students participated in the control group. Their mean age was 29.2(SD = 2.5).

Procedure. The procedure for this experiment was the same as that of experiment 1, except for the absence of suboptimal priming condition. Respectively, the schizophrenic and control groups performed the optimal priming tasks.

Results

The purpose of this study was to observe the emotional regulation process of schizophrenics, compared to that of normal control group. For normals, as in optimal

condition of experiment 1, no assimilation effect was found in rating Hindu characters. However, schizophrenics showed the assimilation effect in evaluation tasks. Figure 3 contrasts the rating results of normals and that of schizophrenics.

There was one 'between variable'(normals vs. schizophrenics) and one 'within variable'(positive, neutral, and negative valence of priming stimuli). A main effect of the priming valence was also statistically significant, $F(2, 34) = 6.49, p < .05$, and interaction effect between subject characteristics and valence of primes was statistically significant, $F(2, 34) = 6.12, p < .05$.

Simple effect tests showed that the assimilation effect was found only for schizophrenics(Figure 3). A simple effect of priming valence was not significant for the control group, $F(2, 18) = 0.03, p \geq .99$, but a simple effect owing to prime valence for schizophrenics was statistically significant, $F(2, 16) = 11.90, p < .001$. Negative priming stimuli produced unfavorable

Table 2. Mean attractiveness ratings of schizophrenics and normals

valence of priming	schizophrenics	normals
positive	6.56(2.40)	4.30(1.89)
neutral	6.33(2.96)	4.40(2.12)
negative	3.44(1.74)	4.30(1.64)

() : SD

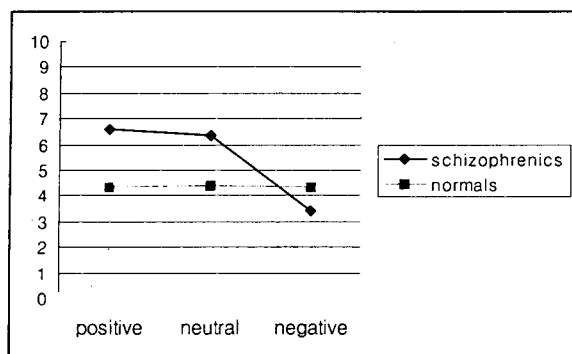


Figure 3. Mean priming effects of schizophrenics and normals

tendencies in task evaluation, compared not only to positive priming, $F(1, 8) = 31.61$, $p < .001$, but also to neutral condition, $F(1, 8) = 26.98$, $p < .001$.

Discussion

Figure 3 presents, unlike normals schizophrenics cannot regulate affective priming effect. This result is congruent to previous research findings Kwapil et al(1990) reported. Besides this result, experiment 2 found another significant effect implying that instinct analysis of the valence of stimulus can be performed even for schizophrenics. The simple effect of prime valence implicates schizophrenics can grasp the favorableness if emotional stimuli. Because of this facet, an assimilation effect was produced for schizophrenics. This result produces important argumentation against the dominant viewpoint of schizophrenics' incapability to process emotional cues(Bellak, Mueser, & Wade, 1992). Experiment 2 implies that the impairment of their emotional process may be

caused not by encoding disorder but by ineffectiveness of further processing.

Reference

- Bellak, A. S., Mueser, K. T., & Wade, J. (1992). The ability of schizophrenics to perceive and cope with negative affect. *British Journal of Psychiatry*, 160, 473-480.
- Bleuler, E. (1950). *Dementia praecox or the group of schizophrenia* (J. Zinkin Trans.), New York: International University Press (Original work published 1911).
- Brenner, H. D., Roder, V., Hodel, B., & Kienzle, N. (1994). *Integrated Psychological Therapy for Schizophrenic Patients*. Toronto, Hogrefe & Huber.
- Frith, C. D. (1979). Consciousness, information processing, and schizophrenia. *British Journal of Psychiatry*, 134, 225-235.
- Gjerde, P. F. (1983). Attention capacity dysfunction and arousal in schizophrenia. *Psychological Bulletin*, 93, 57-72.
- Kring, A. M., & Neal, J. M. (1996). Do schizophrenic patients show a disjunctive relationship among expressive, experimental, and psychophysiological component of emotions? *Journal of Abnormal Psychology*, 105, 249-257.
- Kwapil, T. R., Hegley, D. C., Chapman, L. J. & Chapman, J. P. (1990). Facilitation of word recognition by semantic priming in schizophrenia. *Journal of Abnormal*

- Psychology*, 99, 215-221.
- Mcghie, A., & Chapman, J. (1961). Disorders of attention and perception in early schizophrenia. *British Journal of Medical Psychology*, 34, 103-115.
- Murphy, S. T., & Zajonc, R. B. (1993). Affect, cognition, and awareness: Affective priming with suboptimal and optimal stimulus. *Journal of Personality and Social Psychology*, 64, 723-739.
- Murphy, S. T., & Zajonc, R. B. (1995). Additivity of nonconscious affect: combined effects of priming and exposure. *Journal of Personality and Social Psychology*, 69, 589-602.
- Rado, S. (1953). Dynamics and classification of disordered behavior. *American Journal of Psychiatry*, 110, 406-416.
- Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgements of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, 45, 513-523.
- Shakow, D. (1962). Segmental set: A theory of the formal psychological deficit in schizophrenia. *Archives of General Psychiatry*, 6, 1-17.
- Tipper, S. P. (1985). The negative priming effect: Inhibitory priming by ignored objects. *Quarterly Journal of Experimental Psychology*, 37A, 571-590.
- Wegener, D. T., & Petty, R. E. (1995). Flexible correction processes in social judgement: The role of naive theories in corrections for perceived bias. *Journal of Personality and Social Psychology*, 68, 36-51.