Reappraisal: adaptive emotion regulation or meaning reconstruction?

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Abstract

Objective The present study reexamined the function of cognitive reappraisal, which has traditionally been regarded as an adaptive emotion regulation strategy.

Method Participants were 169 Japanese male prisoners, including violent/serious offenders (n = 52) and theft offenders (n = 117). Measures included the Buss–Perry Aggression Questionnaire (BPAQ), Emotion Regulation Questionnaire (ERQ), K6 (6-item Kessler Psychological Distress Scale), and Balanced Inventory of Desirable Responding (BIDR).

Results Compared with theft offenders, violent/serious offenders showed significantly higher anger and reappraisal scores together with lower subjective stress related to work, family, and community life. No significant group difference was found in suppression. The elevated reappraisal tendency observed among violent/serious offenders was not sufficiently explained by impression management and showed only a partial association with self-deception.

Conclusions These findings suggest that reappraisal may not function solely as an adaptive strategy for reducing negative emotions. The coexistence of elevated anger, higher reappraisal, and lower subjective stress suggests that high levels of cognitive reappraisal should not automatically be interpreted as indicators of adaptive psychological functioning. One hypothesis generated by the present findings is that some responses captured by the ERQ may reflect meaning reconstruction processes that reduce subjective discomfort while maintaining self-consistent interpretations of one's own behavior.

Keywords: cognitive reappraisal; emotion regulation; adaptive functioning; violent offenders; anger.

Introduction

Anger is one of the major factors promoting aggressive behavior, and both experimental studies and meta-analyses have repeatedly demonstrated that the elicitation of anger or negative affect is associated with increased aggressive responses [1, 2]. For this reason, the recognition and management of anger have been regarded as important components of recidivism prevention programs for offenders and juvenile delinquents. In cognitive behavioral therapy (CBT)-based interventions, which currently constitute the mainstream approach in many countries, recognition of anger, identification of triggers, reappraisal, and problem-solving skills training are considered central intervention components [3, 4].

One of the emotion regulation strategies that has traditionally been emphasized in anger management is reappraisal. In emotion regulation research, reappraisal has generally been regarded as one of the most adaptive strategies [5, 6]. Reappraisal is understood as a process that modifies emotional responses by changing the meaning assigned to situations, thereby promoting psychological adaptation. In CBT-based offender rehabilitation programs as well, the acquisition of cognitive reinterpretation and emotion regulation skills constitutes an important component of interventions, particularly for individuals with violent tendencies.

However, in clinical practice within correctional settings, interventions for highly aggressive offenders do not always proceed in accordance with these theoretical assumptions. Among violent and serious offenders, some individuals are immature and impulsive but nevertheless relatively responsive to intervention and likely to benefit from treatment. In contrast, there are also offenders who appear superficially calm, yet strongly justify their own

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behavior, remain fixated on victim consciousness and externalization of blame, and even deny that they themselves have any psychological problems at all. In such individuals, although anger is often easily elicited by trivial events, they also appear to have difficulty maintaining awareness of the conflict and ambivalence associated with their anger and aggressive behavior. Negative emotions and interpersonal conflicts are rapidly resolved through interpretations that justify their own actions, with the result that such individuals often experience little subjective awareness of their own problems. Furthermore, even when they are encouraged to cognitively reinterpret aggression-related situations from alternative perspectives, such "reappraisal-like" cognitive operations do not necessarily reduce anger or internal conflict, but may instead function to preserve or reinforce cognitive consistency and self-justification.

These clinical observations suggest the need to reconsider the conventional assumption that reappraisal, defined as reducing negative emotions through reinterpretation of situations, is always an adaptive emotion regulation strategy. In other words, reappraisal may not always function to reduce anger or aggression itself; in some cases, it may instead function in ways that maintain or justify anger and aggressive tendencies. Nevertheless, the question remains whether such cognitive operations should truly be regarded as reappraisal within the framework of emotion regulation theory. Changes in meaning-making directed toward preserving cognitive consistency and self-justification have traditionally been discussed in relation to techniques of neutralization and may also be understood through the cognitive mechanisms proposed in motivated reasoning theory.

Gross, who proposed the process model of emotion regulation, defined reappraisal as "changing the way one thinks about a situation in order to decrease its emotional impact" [5]. Importantly, this definition does not explicitly limit the reduced emotion specifically to anger or aggression themselves. Given both this definition and the conventional tendency to regard reappraisal as adaptive, reinterpretation of situations has generally been assumed to function in ways that reduce anger and aggression. However, the clinical observations described above suggest that reinterpretation may also function to reduce subjective discomfort arising from threats to self-esteem or cognitive consistency, through processes involving externalization of blame and self-justification.

From this perspective, it may be possible that what has traditionally been treated as adaptive reappraisal may also include forms of cognitive functioning that differ from the adaptive emotion-reduction processes conventionally assumed. Recent empirical studies have likewise failed to provide entirely consistent support for traditional understandings of reappraisal. For example, Troy et al. [7] demonstrated that the adaptiveness of reappraisal varies according to the controllability of situations, suggesting that reappraisal may be less effective or even maladaptive in situations where direct action or problem solving is possible. McRae et al. [8] suggested that reappraisal is not a unitary strategy, but rather consists of multiple tactics. Furthermore, Ford et al. [9] demonstrated that the adaptiveness of emotion regulation varies flexibly depending on situational and contextual factors, suggesting that strategies traditionally regarded as adaptive may not necessarily function adaptively in all circumstances. More recent reviews have further suggested that the effectiveness of cognitive reappraisal depends substantially on contextual demands and individual differences, and that positive cognitive reappraisal may contribute to resilience under some conditions while functioning less adaptively in others [10].

Based on these considerations, the present study aimed to reexamine the function of reappraisal by comparing a violent/serious offender group, who had engaged in actual aggressive criminal behavior, with a theft offender group, who had not engaged in direct interpersonal aggression. Of course, offense category does not directly reflect an individual's inherent aggression tendency. Nevertheless, comparing offenders with histories of interpersonal aggressive crimes and offenders without direct interpersonal aggression may provide meaningful insight into the relationship between aggression and reappraisal, because the former group has engaged in actual aggressive behavior toward others in real-life contexts rather than merely reporting aggressive tendencies on self-report measures.

The hypotheses of the present study were as follows: compared with theft offenders, violent/serious offenders would (1) demonstrate both higher reappraisal tendencies and higher anger, and (2) exhibit relatively lower subjective stress despite elevated anger.

Method

Participants

Participants were male inmates incarcerated in correctional institutions in Japan. The sample consisted of two offender groups: a violent/serious offender group and a theft offender group. The violent/serious offender group included offenders convicted of violent crimes involving direct

interpersonal aggression, whereas the theft offender group consisted of offenders convicted of theft-related offenses without direct interpersonal violence.

The final sample consisted of 169 participants. Of these, 52 were classified into the violent/serious offender group and 117 into the theft offender group. Participants with histories of both violent and theft-related offenses were classified into the violent/serious offender group because they had engaged in direct interpersonal aggression.

The mean age of the violent/serious offender group was 45.31 years (SD = 12.23), whereas the mean age of the theft offender group was 50.56 years (SD = 13.29).

Measures

Buss–Perry Aggression Questionnaire (BPAQ)

Aggression tendencies were assessed using the Japanese version of the Buss–Perry Aggression Questionnaire (BPAQ) [11]. The BPAQ consists of four subscales: Physical Aggression, Verbal Aggression, Anger, and Hostility. In the present study, the Anger subscale was treated as the primary indicator of anger-related tendencies.

The internal consistency coefficients for the Physical Aggression and Verbal Aggression subscales were relatively low in the present sample (Physical Aggression: $\alpha = 0.439$; Verbal Aggression: $\alpha = 0.142$). Given the correctional setting, responses to items directly assessing aggressive behavior may have been influenced by socially desirable responding, defensive responding, or institutional self-presentation. Therefore, these subscales were not included in the primary analyses and were treated only as supplementary indicators.

Emotion Regulation Questionnaire (ERQ)

Reappraisal and suppression tendencies were assessed using the Japanese version of the Emotion Regulation Questionnaire (ERQ) [12]. The ERQ consists of two subscales measuring cognitive reappraisal and expressive suppression.

In the present study, the Reappraisal subscale was used as the primary indicator of reappraisal tendency.

Psychological Distress

Psychological distress was assessed using the K6 scale [13].

Balanced Inventory of Desirable Responding (BIDR)

Socially desirable responding was assessed using the Balanced Inventory of Desirable Responding (BIDR) [14]. The BIDR includes subscales measuring self-deceptive enhancement and impression management.

Subjective Stress

Participants were also asked to rate subjective stress in several life domains, including work, family, and community relationships.

Procedure

Questionnaire surveys were administered collectively within correctional institutions. Participation was voluntary, and participants were informed that their responses would not influence institutional treatment or parole decisions.

The study was conducted in accordance with ethical standards for psychological research involving human participants.

Statistical analysis

Group differences between violent/serious offenders and theft offenders were examined primarily using independent samples t-tests.

In addition, analyses controlling for socially desirable responding were conducted using covariance analyses with BIDR self-deception and impression management scores as covariates.

Effect sizes were calculated using Cohen's d. Statistical analyses were conducted using IBM SPSS Statistics (Version 20.0).

Results

Group differences between violent/serious offenders and theft offenders

Table 1 presents the descriptive statistics and group comparisons for the principal study variables.

Compared with the theft offender group, the violent/serious offender group demonstrated significantly higher scores on the Anger subscale of the BPAQ. In addition, the violent/serious offender group showed significantly higher reappraisal tendencies as measured by the ERQ.

Regarding subjective stress, the violent/serious offender group reported significantly lower levels of stress in several life domains despite exhibiting higher anger tendencies. In contrast, no significant group difference was found for psychological distress as measured by the K6.

With respect to socially desirable responding, the violent/serious offender group demonstrated significantly higher self-deception scores on the BIDR.

Although the Physical Aggression subscale of the BPAQ showed relatively low internal consistency in the present sample ($\alpha = 0.439$), supplementary analyses indicated that the violent/serious offender group also tended to score higher on physical aggression than the theft offender group. However, because of the low reliability of this subscale, these findings should be interpreted cautiously.

Variable	Violent/serious offenders M (SD)	Theft offenders M (SD)	t (df)	p
Age	45.31 (12.23)	50.56 (13.29)	2.51 (105.72)	0.014
Self-deception	51.06 (16.02)	43.12 (9.19)	−3.34 (66.41)	0.001
Impression management	43.90 (14.28)	46.50 (9.77)	1.19 (73.05)	0.237
Verbal aggression	16.98 (3.18)	16.03 (9.30)	−0.99 (159.88)	0.324
Hostility	21.44 (4.50)	21.84 (4.16)	0.54 (91.43)	0.591
Physical aggression	23.56 (6.58)	18.48 (9.69)	−3.97 (139.71)	<0.001
Anger	17.21 (4.12)	14.97 (4.10)	−3.26 (97.35)	0.002
Reappraisal	27.21 (7.57)	24.65 (5.73)	−2.18 (78.10)	0.032
Suppression	15.58 (4.95)	16.01 (4.02)	0.55 (82.24)	0.582
K6 (psychological distress)	5.92 (5.65)	7.10 (5.47)	1.27 (95.12)	0.209
Job stress	7.31 (3.78)	8.53 (3.06)	2.05 (82.02)	0.043
Family stress	6.08 (3.84)	7.62 (3.48)	2.48 (89.76)	0.015
Community stress	5.92 (3.46)	7.69 (3.57)	3.04 (100.69)	0.003

Note. Values are based on independent samples t-tests. Welch's t-test was used when the assumption of equal variances was violated. In the present correctional sample, the physical aggression and verbal aggression subscales of the BPAQ demonstrated low internal consistency (Cronbach's α = 0.439 and 0.142, respectively). Therefore, these scores are reported for descriptive purposes only and were not emphasized in the primary analyses or interpretation.

Table 1. Group differences between violent/serious offenders and theft offenders

Because the violent/serious offender group was significantly younger than the theft offender group, supplementary ANCOVAs were conducted with age entered as a covariate. Age was not significantly associated with reappraisal, anger, self-deception, or any subjective stress measures (ps = 0.159–0.865). In contrast, offender group remained significantly associated with reappraisal ($F(1,166) = 5.20$, $p = 0.024$), anger ($F(1,166) = 10.47$, $p = 0.001$), self-deception ($F(1,166) = 15.22$, $p < 0.001$), and subjective stress measures (ps = 0.001–0.027). These findings suggest that the observed group differences cannot be explained solely by age differences.

Analyses controlling for socially desirable responding

To examine whether the observed group differences could be explained by socially desirable responding, additional analyses were conducted controlling for BIDR self-deception and impression management scores.

The group difference in reappraisal tendency remained significant after controlling for socially desirable responding variables. Similarly, the tendency for the violent/serious offender group to exhibit higher anger and lower subjective stress remained generally unchanged.

These findings suggest that the elevated reappraisal tendencies observed in the violent/serious offender group cannot be fully explained by socially desirable responding or defensive self-presentation alone.

Summary of findings

Overall, the present findings demonstrated that the violent/serious offender group exhibited a paradoxical pattern characterized by:

- higher anger tendencies,
- higher reappraisal tendencies, and
- lower subjective stress.

At the same time, no significant group difference was observed in generalized psychological distress as measured by the K6.

Taken together, these findings suggest that the reappraisal tendencies observed in violent/serious offenders may not necessarily reflect adaptive reduction of anger itself, but may instead involve forms of cognitive reinterpretation functioning to reduce subjective discomfort while maintaining psychological consistency regarding anger and aggression-related tendencies.

Discussion

Theoretical implications

The present findings may suggest the need to reconsider the concept of reappraisal from the perspective of the process model of emotion

regulation [5]. Gross conceptualized reappraisal as an "antecedent-focused" strategy that modifies the meaning of a situation before an emotional response is fully generated, whereas suppression was conceptualized as a "response-focused" strategy that regulates the expression of an already generated emotional response [5]. However, in the present study, the violent/serious offender group showed significantly higher reappraisal tendencies than the theft offender group, while also demonstrating higher anger tendencies and belonging to crime categories involving actual aggressive behavior. These findings are difficult to explain solely from the conventional understanding of reappraisal as an antecedent-focused strategy for reducing negative emotions.

In Gross's extended process model, reappraisal may occur within a recursive cycle of World → Perception → Valuation → Action → World... [6]. Theoretically, this framework allows anger that has once emerged and been suppressed to be subsequently processed through reappraisal within a later cycle. However, in such cases, reappraisal may function in a manner different from the emotion-reduction function that has traditionally been assumed.

Furthermore, in the present study, the violent/serious offender group demonstrated a coexistence of high anger and low subjective stress, whereas no significant group difference was found in psychological distress as measured by the K6. This finding suggests that the lower subjective stress observed in the violent/serious offender group may be related not to reductions in generalized anxiety or depressive distress itself, but rather to differences in subjective appraisal and meaning-making regarding concrete life situations such as work, family, and community relationships.

In general, the persistence of anger is associated with increased stress responses and psychological burden. However, in the present study, high anger coexisted with low subjective stress in the violent/serious offender group. Given that the catharsis hypothesis — that the enactment of aggressive behavior relieves stress and negative affect — has not received consistent empirical support [15], the coexistence of reappraisal and anger in the present findings is difficult to understand merely as a "failure" of reappraisal.

Conventionally, reappraisal has been understood as a strategy that modifies cognitive meaning-making to adapt to situations and reduce negative emotions [6, 7]. However, the present findings suggest the necessity of considering additional functions of reappraisal beyond those traditionally assumed. Recent theoretical developments have also suggested that cognitive reappraisal may require conceptual refinement beyond its traditional characterization as a uniformly adaptive strategy [16].

The ERQ assesses the tendency to engage in cognitive reappraisal, but provides no information regarding the content, target, or motivational direction of such reinterpretation. Thus, adaptive reinterpretation, self-justifying reinterpretation, rationalization, and other forms of meaning reconstruction cannot be differentiated within the present design.

One possible hypothesis that may coherently explain these apparently contradictory findings is that what was measured as reappraisal may function less to reduce anger itself than to reduce subjective conflict and discomfort by construing anger and aggression-related tendencies as psychologically self-consistent. The present study does not equate self-justifying reinterpretation itself with reappraisal. Rather, it suggests the possibility that cognitive meaning-making processes measured as "reappraisal" may include such directions of functioning.

Gross defined reappraisal as "changing the way one thinks about a situation in order to decrease its emotional impact" [5]. This definition does not limit the reduced emotion specifically to anger itself, and may theoretically include forms of reappraisal that function to reduce conflict or inconsistency arising from threats to self-worth or self-justification. Furthermore, the ERQ used in the present study measures the tendency to use reappraisal, but does not distinguish the direction in which such cognitive reconstruction functions. Therefore, the reappraisal tendencies observed in the present study may also include self-justifying forms of reinterpretation.

This interpretation is also broadly consistent with several previously proposed theoretical perspectives. First, techniques of neutralization, proposed in offender research, describe cognitive justification processes that reduce guilt and conflict associated with deviant behavior, and may partially overlap with the self-justifying meaning reconstruction tentatively suggested in the present study [17]. In addition, the present findings may also be viewed considering the perspective of motivated reasoning [18], according to which individuals do not necessarily construct meanings based on objective facts, but rather reconstruct meanings in accordance with motivations to maintain self-concept and emotional consistency.

From the perspective of psychodynamic theory, the reappraisal tendencies observed in the present offender sample may also be tentatively interpreted as processes that share certain features with rationalization, functioning not merely as adaptive emotional regulation strategies but also

as means of avoiding direct confrontation with one's own aggression and internal conflict [19, 20]. Rationalization has been conceptualized as a process that may temporarily reduce subjective distress while simultaneously weakening self-reflection regarding responsibility and internal conflict [19, 20]. However, because the present study did not directly assess rationalization, neutralization, motivated reasoning, or self-justifying cognitive processes, these interpretations should be regarded as theoretical hypotheses intended to account for the observed coexistence of high anger, elevated reappraisal, and low subjective stress, rather than as direct empirical conclusions derived from the present data.

Recent longitudinal evidence has suggested that the effectiveness of reappraisal may depend on individual characteristics and situational contexts, raising the question of for whom and under what conditions reappraisal contributes to psychological adaptation [21].

Taken together, the present findings suggest that elevated reappraisal scores should not automatically be regarded as evidence of adaptive emotion regulation. Rather, one possible hypothesis is that some forms of cognitive reconstruction measured as reappraisal may function to reduce subjective discomfort while maintaining psychologically self-consistent interpretations of anger and aggression-related tendencies.

Although recent meta-analytic evidence has generally supported associations between reappraisal and resilience [22], the present findings suggest that elevated reappraisal scores may not uniformly indicate adaptive functioning, particularly among offender populations.

Clinical implications

From a clinical perspective, the present findings suggest that elevated reappraisal scores should be interpreted with caution in correctional settings. More broadly, they also indicate that emotion regulation theory, neutralization theory, and motivated reasoning may be understood within a broader integrative framework of meaning reconstruction. For some offenders, increased cognitive reappraisal may reduce subjective discomfort while simultaneously reinforcing self-justifying interpretations and defensive patterns of thinking, rather than promoting genuine psychological change.

These findings further suggest that cognitive reappraisal should not be regarded as a sufficient treatment goal, but rather as one cognitive skill that may contribute to offender rehabilitation. Accordingly, interventions designed to enhance reappraisal should be positioned within a comprehensive treatment program rather than implemented as an isolated target of intervention.

Contemporary offender rehabilitation generally emphasizes treatment targets such as acknowledgment of responsibility for one's offense, empathy toward victims, and motivation to change. Improvements in cognitive reappraisal should therefore be evaluated not as an endpoint in themselves, but in terms of whether they facilitate progress toward these broader rehabilitative goals. Otherwise, increased reappraisal may simply strengthen self-justifying meaning reconstruction while creating the appearance of psychological improvement without promoting meaningful rehabilitation.

Quantitative assessment remains indispensable in evidence-based practice. At the same time, psychometric indicators should always be interpreted within the broader context of comprehensive clinical assessment and ongoing therapeutic observation. From this perspective, elevated reappraisal scores should not automatically be interpreted as indicators of adaptive functioning or therapeutic progress, but rather should be understood in relation to the offender's overall psychological functioning and their progress toward the broader goals of rehabilitation.

Limitations and future directions

The present study was cross-sectional in design and therefore cannot directly establish causal relationships within emotion regulation processes. In addition, the ERQ used in the present study measures the tendency to engage in cognitive reinterpretation, but does not directly distinguish whether such meaning reconstruction functions in adaptive directions or in self-justifying directions. Furthermore, the present study did not directly assess neutralization processes or motivated reasoning themselves. Accordingly, the interpretations proposed in the present study should be regarded as theoretical inferences derived from the observed patterns of association.

In addition, the present study relied exclusively on self-report measures administered within correctional institutions. Although socially desirable responding was partially addressed using the BIDR, including its impression management component, self-report data obtained in correctional settings may still be influenced by additional factors not fully captured by the BIDR, such as institutional norms, concerns regarding possible consequences of disclosure, distrust of research procedures, and response styles shaped by prolonged incarceration.

Relatedly, although the present study used offense category as an indicator of histories of interpersonal aggression among Japanese male prisoners, offense classification does not necessarily directly reflect an individual's underlying aggressive traits, and other unmeasured factors — such as criminal history (e.g., number of prior convictions or recidivism) and institutional environment (e.g., security level, length of incarceration, or participation in treatment programs) — may also have contributed to the observed group differences. Although supplementary analyses indicated that these differences remained significant after controlling for age, the present design cannot rule out the influence of such unmeasured variables.

Moreover, because the present sample was limited to Japanese male prisoners, the generalizability of the findings remains limited. Emotion regulation processes may also be shaped, at least in part, by cultural norms concerning the experience, expression, and management of emotions. Japanese culture has often been characterized as placing relatively strong emphasis on interpersonal harmony, emotional restraint, and sensitivity to social evaluation. Such cultural factors may influence the relationships among anger, subjective stress, and cognitive reappraisal observed in the present study. Therefore, caution is warranted in generalizing the present findings to offenders from different cultural backgrounds.

Future studies should examine the relationships among emotion, meaning-making, and behavior in greater detail through experimental and longitudinal designs. It will also be necessary to develop research designs capable of directly assessing the direction in which reappraisal modifies meaning-making processes.

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