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## Mature and immature defenses. A study of repressors and trait anxiety groups

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# **Process and Personality**

## **Actualization of the personal world with process-oriented methods**

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**Published in remembrance of Ulf Kragh**

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## 8. MATURE AND IMMATURE DEFENSES. A STUDY OF REPRESSORS AND TRAIT ANXIETY GROUPS

**Ingegerd Carlsson and Fredrik Neuman**

*To investigate defense mechanisms, repressors ( $n = 14$ ), highly anxious ( $n = 37$ ) and low anxious ( $n = 7$ ) groups were tested with the Meta Contrast Technique (Smith, Johnson, Almgren & Johanson, 2001). The division into repressors and anxiety groups was made on a larger group ( $N = 140$ ), which was also investigated with respect to experienced access to preconscious processes, here operationalized as memory for dreams.*

*The results were that the repressors got higher scores on immature defense mechanisms than the highly- or low anxious groups ( $p = .04$  versus  $p < .05$ ). The repressors as well as the highly anxious group were higher on a measure of overall defense than the low anxious group ( $p < .05$  in both comparisons). Regarding separate defense categories a difference was found for repression, which was more frequent in the highly anxious than in the low anxious group ( $p = .003$ ). Memory for dreams differed only in the men. The male repressors scored significantly lower than the high-anxious men ( $p < .02$ ).*

*The immature defenses in the repressors were discussed in terms of regressive reactions speculatively due to a lack of symbolic functioning concerning anxiety-arousing areas, i.e. alexithymia.*

The repressor concept has traditionally been used to signify people with heightened recognition thresholds for anxiety-provoking stimulation (Weinberger, Schwartz, & Davidson, 1979). Repressors also show an obvious inconsistency between how they describe themselves – calm, happy, with high self-esteem – and their outer appearance, as others perceive it. Inspired by psychoanalytic defense mechanisms theory, the idea has been that a repressor uses strong defensive structures in order to uphold an image of him/herself that is quite different from the more objective reality, as others see it.

To test this inconsistency a classification was made by Weinberger et al. (ibid.) by way of psychological scales, one that measured social desirability and another scale measuring anxiety level. The Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) was, according to the constructors, measuring affect inhibition and protection of self-esteem. Those high on social desirability and low on anxiety were thus termed repressors, while other groups were labelled true low-anxious, high-anxious, and defensive high-anxious. Weinberger et al. (ibid.) found that the repressors were more stressed (according to three physiological and three behavioral measures) than the true low-anxious people despite claims of lower trait anxiety. Subsequent empirical research has found that repressors show high reactivity on a number of physiological measures, but report very little negative affect, presumably because they are highly motivated to maintain a positive image of themselves (as reviewed in Weinberger & Davidson, 1994).

Research has also supported the claim that the repressor is not a so-called other-deceiver, i.e. actually aware of his or her own feelings but aiming at making a good impression on others (Derakshan & Eysenck, 1998; Weinberger & Davidson, 1994). Instead, a more or less conscious ambition to maintain strict emotional control appears to result in an inward “blind-fold” as well.

The psychodynamic theory of an active avoidance of conflicting, anxiety-arousing stimuli thus seemed an appropriate frame to the repressor concept. When it came to particular defense mechanisms it was suggested that the mechanism of projection was relevant for repressors, since it would seem a convenient strategy to attend to negative material in others when avoiding it in oneself. Empirical support for this suggestion was found by Newman, Duff and Baumeister (1997).

The repressive individual thus appears unwilling to attend to negative material emanating from the own self. This reluctance ought to manifest itself not only concerning the awareness of negative feelings, but with respect to certain other psychic material as well. Especially this should hold true for less easily controllable material, closer to the primary process, for instance his or her dream-life. Thus, one aim of the present study was to investigate the participants' degree of closeness to their own dreams.

As suggested by Weinberger and Davidson (*ibid*) repressors tend to use combinations of strategies pertaining to different degrees of (verbal) awareness. It furthermore seemed obvious that these strategies include quite reality-distorting mechanisms, such as turning a fact into its opposite (I am not nervous, on the contrary I feel calm and happy). Therefore it appeared relevant to conceive of their defenses not only as combinations of different strategies, similar to the early classification made by Anna Freud (1946). It also seemed important to include a distinction between different levels of maturity, in line with for example Vaillant (1992). A distinction between maturity levels would possibly differentiate between levels of verbal awareness as well.

Therefore, in an exploration of the defensive make-up of repressors we settled on the Meta-Contrast Technique, or MCT, first published in a standardized version by Smith and Nyman (1961). The MCT has been thoroughly validated in different clinical and non-clinical groups, consisting of adults as well as children. It was considered particularly suited for the present study since a distinction is included, within each of the main defense categories, between variants that are typically used by children and more mature variants. As stated in a recent manual; “direct denial of the threat, typical of the preschool age children, must, for instance, be interpreted as a regressive reaction when it appears during latency and thereafter” (Smith, Johnson, Almgren, & Johanson, 2001, p. 33).

The above empirical and theoretical work led to the following hypotheses.

1. Repressors will describe themselves as less close to their dream-life than the low- and high-anxious groups.
2. Repressors will have more signs of projection in the MCT than the other groups.
3. Repressors will have more immature defenses than the other groups.

## METHODS

### *Participants*

Participants were recruited from undergraduate courses at three different departments within the humanities and social sciences. They filled out questionnaires on trait anxiety, social desirability and dreams. On the form the participant could volunteer to take part in a psychological experiment. A total of 140 students answered the form and constituted the group that was classified into repressors, low-anxious and high-anxious groups, to be described in the results section. Of the total group, 58 people volunteered for further individual testing with the MCT.

### *The Spielberger State and Trait Anxiety Inventory*

In the present study the trait form in the Spielberger State and Trait Anxiety Inventory (STAI) was used. It contains 20 anxiety-related statements about one's general mood, assessed on a 4-grade scale. For reliability and validity data, see Spielberger (1983).

### *A Short Form of the Marlowe-Crowne Social Desirability Scale*

Rudmin (1999) developed a short form of the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960). Besides aiming at a shorter version, another goal was to attain a better balance between positive and negative items. The resulting Norwegian short form consisted of 10 items instead of 33, and showed better inter-item correlation means and a mean closer to the mid-point of the response scale than the original scale. A drawback was a slightly lower Cronbach's alpha (.65), since alpha tends to decrease with fewer items. The form was translated to Swedish for the present study and a response scale from 1 – 4 was used, equal to the STAI. This was a change from the original form that used yes or no, in an effort to get a broader distribution of data.

### *Dream questionnaire*

The questionnaire contained a form constructed for this study with the following six questions about dreams. 1. How often do you dream (once a month or less, once a week, almost every night)? 2. How often do you re-

member what was in your dream (very seldom, sometimes, pretty often)? 3. How often do you have unpleasant dreams or nightmares (rather often, sometimes, almost never, never)? 4. Do you dream in color (yes, no, I don't know)? 5. What are your dreams like (often realistic and ordinary, often imaginative and "unreal", both realism and "unreality")? 6. Have you ever experienced "paranormal" dreams, like for instance dreams that came true, telepathic dreams or other "weird things" (never, once, several times)?

### *The Meta Contrast Technique*

In the MCT, early influences of an anxiety-arousing subliminal picture can be registered and spotted as changes in a habituated, supraliminal, picture. The subliminal stimulus is successively prolonged and finally appearing as a structure in its own right. During the process it is supposed to give rise to defense mechanisms, revealed in verbal reports and non-verbal behavior. In the present study we used the version with a subliminal grimacing face (the threat) masked by a picture of a young person (the hero). For a thorough overview of theoretical background and empirical validation, as well as experimental specifications, see the manual (Smith, Johnson, Almgren, & Johanson, 2001). A computerized version was used in this study.

*Reliability of the MCT.* As stated in the manual, inter-rater and test-retest correlations between trained judges have been close to the statistical ceiling. In the present study 20 protocols were drawn at random and scored by the experimenter (junior author) and by another, trained, judge (senior author). In seven of these protocols there were one or two slight differences, mainly concerning tendencies or due to oversights. After a second scoring of all protocols there remained ten protocols on which the experimenter was unsure, and also one or two more general concerns. These instances were thoroughly discussed and if certainty was not reached a third (trained) judge was called in.

*Scoring of the MCT.* The scoring of the protocols made use of all main categories in the manual, briefly described in the following.

*Anxiety.* Signs of anxiety often imply that the hero picture is described as becoming darker, or that there are marked exaggerations of black parts in



the picture. The manual divides the signs into mild, moderate, or grave anxiety.

*Regression.* All regressive signs imply a return to a more immature defensive level, and the depth can be defined as the difference between the baseline level and the final level. The different categories vary from very concrete experiencing (for instance that the participant sees him/herself in the picture, or describes clear colors in the black and white picture), to sudden perceptions that everything is chaotic or nothing is perceived, to defensive regressions (where an advanced sign of, for instance, isolation is replaced by an immature one).

*Projection – sensitivity.* Projective signs appear early in the development. Categories 1 – 3 include clear projective answers (for example perception of plain movements or that the threat is described as a nice and friendly, living, person). Signs of sensitivity indicate that the individual reacts early in the testing to the influence of the subliminal threat by perceiving slight changes in the habituated picture of the boy. Transformations of a sensitive type belong in category 4 (for example changes in picture perspective or posture of the hero). To be classified for sensitivity at least two such changes must be scored. Uncertain, single responses (but not sensitivity) were scored as a tendency to projection.

*Repression.* Efforts to de-cathect the threat are subsumed under the heading of repression. The grouping presupposes that the adult strategy of repression originates at the behavioral level in the preschool age. According to the manual, immature signs of repression are found in subcategories 1 – 2 (for example eye-shutting behavior, when the participant closes his eyes, yawns heavily, turns his head away, looks down, etc, after a quick glance at the screen, or that he or she sees only parts of the threat, the tip of a nose instead of a whole face). In categories 3 – 5, at more mature levels, the threat becomes for example a lifeless (harmless) mummy, or is dressed up, transformed into a bike, tree, flowerpot, or other common object. A vague response was coded as a tendency to repression.

*Isolation.* The different categories in isolation all strive to separate the threatening emotion from the hero figure. Categories 1 – 3 are considered to come low in the hierarchy (for example to increase the distance to the threat, either literally walking backwards from the screen, or perceiving

that the threat is placed further away on the screen, or even to state that it is not an angry monster anyway). Categories 4 – 6 imply greater cognitive maturity (for instance reports that the threat is turned away, or is transformed into a white distinct light, or hidden by a protecting surface). A vague or unsure response was scored as a tendency.

*Depression.* Depressiveness implies a stereotyped, monotonous and often long series of reports of a misinterpreted threat figure, indicative of inhibition. Category 1 contains more immature, childlike expressions (for example that the boy is crying). Categories 2 – 3 consist of more or less massive stereotypical series (at least five reports in a row of an unchanged misinterpretation of the threat). Also included is so-called softened stereotypy, in which the series is slightly changed, indicating depressive tendencies.

*Quantification of the separate defense categories.* For regression, projection and depression a clear sign got two points and tendencies one point. Sensitivity got one point, if no projection was scored. For the categories of isolation and repression, scores in more than one subcategory earned three points, one subcategory was given two points, and a tendency earned one point.

*Overall defense sum.* In order to gain information about overall defense score for each individual, a sum was calculated containing the points for all categories. The maximum thus was twelve – which was a theoretical maximum, since depressive stereotypy excludes most other defenses.

*Immature defense sum.* To quantify immature defense, as regards regression and projection, those categories were considered immature and every sign got two points, with one point for a tendency or for sensitivity. In the categories of repression, isolation and depression, two points were given if the protocol got a score in an immature sub-category and one point for a tendency. The maximum thus was ten points.

## RESULTS

### *Trait Anxiety*

Mean for trait anxiety was 41.6 ( $SD = 9.47$ ) in the whole group. No sex difference was found (men:  $M = 39.8$ ,  $SD = 8.8$ , versus women:  $M = 42.4$ ,  $SD = 8.76$ , n.s.).

### *Social Desirability*

The social desirability mean was 27.3 ( $SD = 4.08$ ) in the whole group. A negative correlation was found with trait anxiety (Pearson's  $r = -.20$ ,  $p = .02$ , two-tailed).

No sex difference was found (men:  $M = 27.1$ ,  $SD = 4.35$  and women:  $M = 27.4$ ,  $SD = 3.98$ , n.s.).

### *Classification into Repressor, Low-Anxious and High-Anxious Groups*

For social desirability the median ( $= 27$ ) was used to split the participants into high and low groups. The median on trait anxiety ( $= 41$ ) was considered somewhat high, and finally the 40<sup>th</sup> percentile ( $= 38$ ) was used. Thus, the repressors had scores below the cut point on trait anxiety and above the median on social desirability, the low-anxious group had scores below the cut point on both tests, while the high-anxious group had a high score on trait anxiety and could be either high or low on social desirability. Table 8.1 shows number of males and females and means and standard deviations for age, trait anxiety and social desirability, for the three categories in the whole cohort and in the MCT subgroup.

*Trait Anxiety in the Three Groups.* The groups differed significantly on an ANOVA ( $F(2, 137) = 101.05$ ,  $p = .000$ ). On post hoc tests (Dunnett) the high-anxious group was significantly higher on trait anxiety than the low-anxious and the repressor groups (mean differences = 14.21 versus 15.18,  $p = .000$ ). The latter groups did not differ.

*Social Desirability in the Three Groups.* An ANOVA for the three groups yielded  $F(2, 137) = 23.55$ ,  $p < .000$ . The repressor group got higher scores than both the low- and high-anxious groups (Dunnett's mean difference = 6.41 versus 3.68,  $p < .000$ ). The high-anxious group was higher than the low-anxious (mean difference = 2.73,  $p < .000$ ).

### *Dreams*

The intention was to form an index with the six questions concerning perceived closeness to one's dreams. The answer categories were assigned numbers and were reversed for questions 3 and 4. However, significant correlations were found only between the first three questions ( $p < .01$ ,

Spearman's  $r_s$ , 2-tailed), which were put together to an index with a minimum of 2 and maximum of 9. The median in the group became 7. On the index the women had significantly higher points than the men (Mann-Whitney  $U = 1344.0$ ,  $p < .001$ , 2-tailed). A difference between groups was found only in the men, where the repressors had lower points than the male high-anxious group (Mann-Whitney  $U = 64.00$ ,  $p < .02$ , 2-tailed). The repressors and the low-anxious group did not differ.

**Table 8.1.** The distribution of participants in the three groups, as well as the number of men and women and the means and standard deviations for age, trait anxiety and for social desirability in the whole cohort and in the MCT subgroup

	<b>Repressor</b> n = 37	<b>Low-anxious</b> n = 19	<b>High-anxious</b> n = 84
Number of women (men)	25 (12)	11 (8)	63 (21)
Age, $M$ ( $SD$ )	24.16 (4.87)	23.42 (6.88)	23.49 (4.83)
Trait anxiety, $M$ ( $SD$ )	32.41 (3.44)	33.37 (4.36)	47.58 (7.17)
Social desirability, $M$ ( $SD$ )	30.41 (2.95)	24.00 (2.11)	26.73 (3.99)
MCT subgroup ( $n$ )	n = 14	n = 7	n = 37
Women (men)	7 (7)	5 (2)	31 (6)
Age, $M$ ( $SD$ )	22.67 (2.77)	22.00 (2.83)	23.14 (4.08)
Trait anxiety, $M$ ( $SD$ )	32.27 (3.71)	34.00 (2.83)	47.49 (7.35)
Social desirability, $M$ ( $SD$ )	29.67 (2.82)	23.57 (2.07)	26.57 (3.62)

### *MCT*

*Thresholds.* A calculation was made to find out if the groups differed at which exposure level they first described a (mis-) representation of the threat stimulus. The means lay between 22.0 - 23,2 ms. which was not significant when tested with ANOVA.

*Anxiety.* No significant difference was found for anxiety.

*The separate defense categories.* As regards the single categories the only significant difference was found in the category of repression. More high-anxious people had signs of clear repression (2 or 3 points) than those in the low-anxious group (the contrast was 19 – 18 versus 7 – 0,  $p = .03$ , Fisher's exact test, two-sided). The repressors got an intermediate place.

*Overall defense sum.* As can be seen in table 2 both the repressors and the high-anxious group scored higher on overall defense than the low-anxious group ( $p < .05$ , versus  $p = .03$ , Fisher's exact test, two-sided). It could be

noted that a sum as high as eight points was reached by two participants, both in the repressor group.

*Immature defense sum.* Table 2 also shows that the repressors got higher scores on immature defense than both the high- and the low-anxious groups ( $p = .04$ , versus  $p < .05$ , Fisher's exact test, two-sided). It was moreover noted that nobody in the low-anxious group got any points for immature defense.

**Table 8.2.** Number of Participants in the Repressor and Anxiety Groups with Low (0 – 2) or High (3 – 8) Points for Overall Defense and for Immature Defense

	<b>Overall</b>	<b>defense</b>	<b>Immature</b>	<b>defense</b>
	0 – 2	3 – 8	0 – 2	3 – 8
Repressor group	7	7	7	7
Low-anxious group	7	0	7	0
High-anxious group	19	18	30	7

## DISCUSSION

As hypothesized, the category of immature defense in the MCT was able to distinguish the group of repressors from both the low-anxious and the high-anxious groups while the dream index separated the repressors and the high-anxious group; the latter however only in the men. Thus the repressors had a larger share of immature responses and the male repressors described a more distant relationship to their dreams. The dream index did not discriminate in the women, who scored generally high.

The hypothesis about projection was not supported – the repressors did not have more projective signs. Since the number of participants was small in the repressor group, and, especially, in the low-anxious group, this may have contributed to the lack of difference as regards projection.

If we consider the low-anxious group, they had less of overall defense than both the high-anxious group and the repressors. They moreover had fewer signs of repression than the high-anxious group. This appears reasonable, given that a low-anxious individual per definition is less easily aroused and thus should become little influenced by the anxiety-arousing stimulus in the MCT. It is unfortunate that the low-anxious group comprised only seven individuals, but the small share in this group with respect

to defense mechanisms seems to indicate that the separation between the groups had some success. Future investigations with larger cohorts are needed in order to attain both larger and more extreme sub-groups than in the present study as well as to cross-validate the results. Also more research is warranted on the short form of social desirability that was used. However, research has not supported the notion that different social desirability measures would have a differential impact on the identification of repressors (Furnham, Petrides, & Spencer-Bowdage, 2002).

The present results on overall defense are interesting to compare with the results in a study of creativity where participants either very high or very low in creativity were tested on both trait anxiety and with the MCT (Carlsson, 2002). Here, the creative group got significantly higher points on overall defenses than the low-creative group. The score for overall defense furthermore showed a positive correlation with the score on creative fluency. Also, high creativity was associated with higher anxiety-levels when measured with the MCT as well as the STAI. These results indicate that a high score on overall defense in the MCT is not a measure of strong defensiveness. Rather, as was reasoned by Carlsson (*ibid.*), an aptness to make shifts between different defenses during the testing may indicate a flexible cognitive style and tolerance of anxiety. This idea was supported by findings in a group comprising 171 youngsters who were tested both on creativity and on the MCT (Carlsson & Smith, 1997). Those with high creativity showed more varied defenses, while the low creative youngsters were significantly gender typed, i.e. low creative males had more isolation whereas their female counterparts had more projection and sensitivity. Furthermore, the category of repression was the sole category to have a positive relation to creativity, but at the same time youngsters with scores in three different categories were significantly more creative than those with only repression or accompanied by either isolation or projection.

Of particular relevance for the present results was another finding in Carlsson and Smith (*ibid.*), namely that unlike repression taken as a whole, the specific subcategory of immature repression showed an opposite pattern, since it was significantly negatively related to creativity. The conclusion was drawn that more symbolic repression indicated better neutralization and hence a cognitively more mature defensive function.

The authors compared their results on repression with Fenichel (1945), who used the term successful repression as an equivalent of sublimation. The same total scoring of immature defense as in the present study was not made by Carlsson (*ibid.*) or by Carlsson and Smith (*ibid.*), which limits the comparison with the present results.

The way that the measures in the present study were constituted meant that there was an overlap between overall defense and immature defense, since projection and regression were part of both. This implies that the overweight for immature defense in the repressors was due specifically to scores in the sub-categories of immature isolation and repression. The tentative conclusion can be drawn that the repressor is less well equipped with tools of symbolization when handling negative and conflict-loaded material. Thus, the high-anxious individual is more prone to shift between defenses belonging to both early and late developmental levels, whereas the repressor's efforts have a stronger regressive flavour. The formulation made with reference to creative functioning by Kris (1952) of "regression in the service of the Ego" thus seems more fitting to the high-anxious group, while the repressors have more affinity to the type of regression which was described by Fenichel (1946) as something that happens to the Ego, due to "a peculiar weakness of the ego organization" (p. 160).

Since repressors apparently have limited conscious access to their bodily reactions (e.g. Derakshan & Eysenck, 1997; Weinberger, Schwartz, & Davidson, 1979), the concept of alexithymia, or the impaired capacity to construct mental representations of emotions and instead to focus on somatic sensations (Taylor, Bagby, & Parker, 1997) could be part of the specification of this peculiar weakness. Another formulation suggests alexithymia to be a cognitive state of externally oriented thinking with an emotional instability associated to the inability to cope with stressful situations (Zimmermann, Rossier, Meyer de Stadelhofen, & Gaillard, 2005).

In research on psychosomatic disease the repressor concept has been pertinent. In a long-term study of patients with heart disease, repressors had a significantly worse prognosis while the high-anxious group had a long-term benefit of treatment (Frasure-Smith, Lesperance, Gravel, Masson, Juneau, & Bourassa, 2002). Fibromyalgia patients compared with healthy controls were more defensive and alexithymic (Brosschot & Aarsse, 2001).

When the MCT was tested on psychosomatic groups, immature defense was found to be more prevalent in alcoholics than in controls (Öjehagen & Smith, 1993) and in patients with psychosomatic diseases versus controls (Smith & van der Meer, 1993). The immature signs in the MCT were moreover found to increase with the duration of the psychosomatic illness (Smith & Amnér, 1995). As stated by Lundh (2002), research on alexithymia would probably benefit from measures not solely dependent on self-assessment. The MCT seems to be such an implicit measure.

To summarize, the present research supported the hypothesis that repressors, in contrast to high- and low-anxious people, would show an overweight of immature defenses and thus respond with meagre symbolic functioning on the MCT. Immature defense has earlier been coupled with psychosomatic symptoms and alexithymia and it was even suggested by Sifneos (1988) that alexithymia is the opposite of creativity. It is a likely prediction that repressors will be particularly low on tests of creativity – the combination of both was not found when searched for, and seems not yet to have been tried in empirical research.

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