

4. RESPONSES OF THE AGGRESSIVE AND NONAGGRESSIVE EXTREME TYPES TO SYMBOLIC AGGRESSION STIMULI

4. 1. Methods

Symbolic aggression stimuli consisted of verbal descriptions of thwarting situations which the subjects were asked to solve according to their own judgments of how they would behave in such situations. In the present study the descriptions were administered as three series of questions¹ designed by the writer. Both the type of thwart and external or situational control were varied (p. 108).

The type of thwart was varied as follows. The aggression stimuli in the *first question series* (QS 1) consisted of active attacks involving direct physical, direct verbal, direct mimic, indirect physical, and indirect verbal offensive aggression. External control was varied so that for each form of aggression the attacker was a boy of the same size, a taller boy, a smaller boy, a girl, a teacher, and the parents. (Example: question 1 concerning direct, physical attack: What would you do if one of the boys in your class who is of the same size as you hurt you?) The number of questions was thus 5×6 .

The aggression stimuli in the *second question series* (QS 2) consisted of frustrations in an individual's goal-oriented activities. The starting point for the preparation of the questions was a story completion test constructed by the writer (Pitkänen, 1963). Information had then been obtained through self-reports about what third-grade pupils found annoying. The new question series was different from the previous one in, for example, the formulation of the questions. They were now made as personal as possible, and each subject was asked to consider his own actual behaviour. An attempt was also made to vary the degree of goal-directness in the frustrated activities. In order to create situations which would be representative in regard to children's social conflicts, the instigator (brother or sister, peer, adult) and the scene (home, circle of friends, school or some other public situation) were varied systematically. (Example: question 1: Think of a situation in which you and your brother (sister)

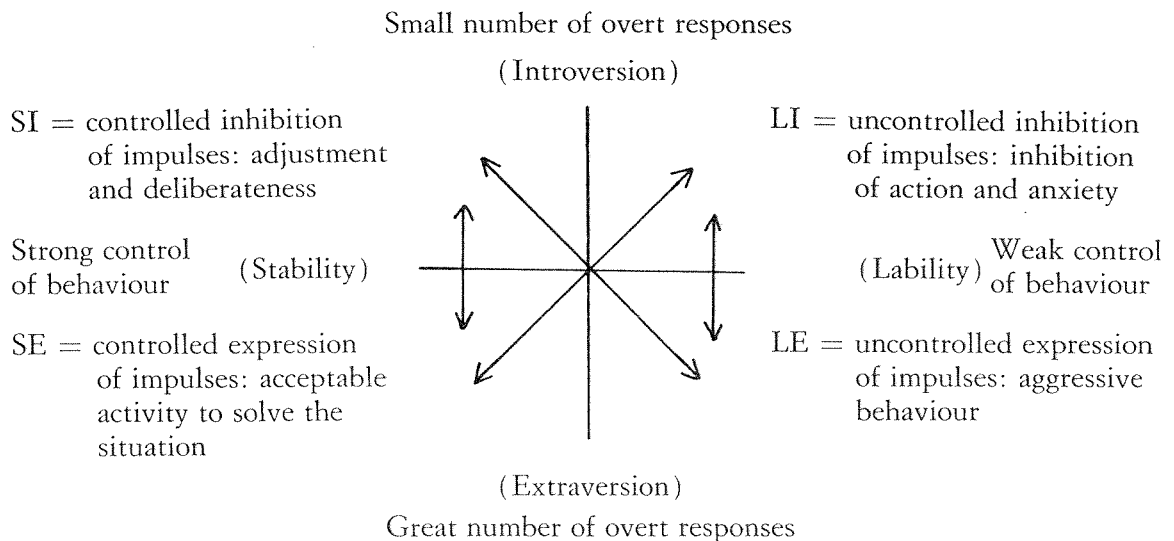
¹ The series of questions (QS 1—3) are obtainable mimeographed.

share a bike, and you are cycling in the yard with other boys. Then your brother (sister) comes and says that he (she) wants to have the bike. Try to think how you would feel and what you would do.) The number of different situations was 3×3 . Three questions were made for each type of situation, which made a total of 27 questions.

The *third question series* (QS 3) was concerned with habits of offensive aggression. The form of offensive aggression (direct physical, verbal, and mimic; indirect physical and verbal) and the victim of attack (boy of the same size, taller boy, smaller boy, girl, teacher, parents) were varied. (Example: question 1 concerning direct, physical offensive response: Do you ever attack a boy of your size or try to hurt him in any way, even if he had done you no harm, just to tease him?) As in QS 1, the number of questions was 5×6 .

The question series were administered as individual tests like interviews with oral responses.¹ The subjects were tested in a random order, but in such a way that in each class the pupil that was tested first represented some of the non-aggressive patterns of behaviour with strong control. The order of the question series was varied: half of the subjects answered QS 2 before, and half of them after QS 1 and QS 3, which were administered successively. The presentation of the three question series took approximately one hour.

Two or three weeks after its first presentation QS 2 was administered again as a group test. Four alternative answers were given to each question on the basis of Hypothesis B. 4. They were assumed to represent the individual patterns of behaviour of the two-dimensional descriptive model: (1) uncontrolled expression of impulses: aggressive behaviour; (2) uncontrolled inhibition of impulses: inhibition of aggression but descriptions of negative affects; (3) controlled inhibition of impulses: adjustment to the situation; (4) controlled expression of impulses: acceptable activity to solve the situation, shown by the figure below.



¹ The instructions obtainable mimeographed are presented in connection with each series of questions.

When projecting the investigation the writer made preliminary studies with a population of university students, the result of which was the SLEI test for adults (S/table, L/abile, E/xtraversion, I/ntroversion). The items of the test consisted of descriptions of frustrating situations and the alternative answers as in QS 2 for children. The former measured the subjects' own judgments of the probabilities of their responses: they had to rank (1—4) the alternatives on the basis of how probable they considered the occurrence of the described responses in their own behaviour. As the ability of second-grade pupils to read is, on the average, still rather poor, the examiner read each description and the alternative answers in pairs. The subjects had to choose of each pair the alternative that best described their own behaviour. They wrote their choices on an answer sheet.

Of four alternatives six pairs can be made. To shorten the test (the number of items was 27) only four pairs were presented (in the figure connected by arrows).¹ The pairs SI-LI and SE-LE were excluded, because the tendency to choose a socially acceptable alternative was assumed to account for most of the variance of the choices.

The pairs composed of the four alternatives according to the figure were presented by items in a varying order of both pairs and mates. Example: pairs of alternatives in question 1 (see pp. 141—142).

LE: Would you shout at him nastily and go on cycling, or
 SI: would you think that it is his (her) turn to cycle and give the bike?

LI: Would you feel annoyed because your brother (sister) always wants to have the bike when you would like to cycle, or
 SE: would you suggest that it would be best to take turns?

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 LI: would you feel annoyed because your brother (sister) always wants to have the bike when you would like to cycle?

SI: Would you think that it is his (her) turn to cycle and give the bike, or
 SE: would you suggest that it would be best to take turns?

The actual problems of the present investigation did not include any analytical examination of the *social backgrounds* of the subjects. In order to obtain some directive information the subjects were, however, asked

1. whether mother worked outside home,
2. how many children there were in the family,
3. which in order of birth the subject was,
4. how the parents behaved if the child had been disobedient.

Furthermore, differences between the groups were studied on the basis of the parents' profession, about which information had been obtained from the teachers.

For a study of the differences in the subjects' *school achievements* information was obtained about

¹ The alternatives presented in each item are obtainable mimeographed in connection with QS 2.

1. mark averages of all school subjects at the end of the spring term,
2. mark averages of theoretical subjects,
3. marks in carefulness.

During the spring term the teachers of most classes had taken part in voluntary testing of their pupils, in which the school achievement tests standardized by Tasola (1967) of reading, writing, and arithmetic (*LUKILA I—II*) was administered. From this material the writer picked up the subjects' scores for variables

4. vocabulary
5. reading: result (speed)
6. reading: mistakes
7. arithmetic problems

4. 2. Test variables

In accordance with Hypothesis B. 4 the scoring categories of aggressive and nonaggressive responses were formulated as follows.

Question series 1,2:

Defensive aggression. When compared with the scorings of the Children's Form of the Rosenzweig Picture-Frustration Study (Takala, 1955; Rosenzweig & Rosenzweig, 1948; et al.), defensive aggression contains, of the extrapunitive direction, the ego-defence (a person or an object in the environment is accused or blamed) and need-persistence (another person is demanded to eliminate the frustrating stimulus) types of aggression. Within the present investigation the responses were, however, categorized according to the descriptive model of aggression (p. 29) with both the direction (direct/indirect) and mode (physical, verbal, mimic) taken into account.

- a) *Direct physical aggression:* hit, push, throw something; retaliate (physical aggression); etc.
- b) *Direct verbal aggression:* shout back, threaten, reproach aggressively, demand the other person to do something, etc.
- c) *Direct mimic aggression:* look angrily, sneer back, start sulking, cry, etc.
- d) *Indirect physical aggression:* damage or take another person's possessions, slam doors, etc., do something forbidden.
- e) *Indirect verbal aggression:* sneak, speak ill, etc.

Nonaggression

- a) *Description of negative affects without aggressive response.* The category corresponds most closely to the extrapunitive obstacle-dominance type of reaction (Rosenzweig: insistence upon the presence of obstacle; fretting and complaining on account of the situation), but it contained also the intro-punitive ego-defence type (accusation, criticism, etc. directed toward one's own self), where the response remains a description of negative affects. If an aggressive response was connected with the description, an answer was scored as a defensive aggressive response, and the grounds for scoring an

answer as a nonaggressive response were efforts of peaceful adjustment. The most frequent answers were: I'd feel annoyed, miserable, angry.

- b) *Escape*. An answer contains an avoidance response, most frequently in the form of running away or hiding oneself.
- c) *Indifference*. The category corresponds to the intropunitive and impunitive obstacle-dominance type of reaction (Rosenzweig: a frustrating situation is denied completely, or it is not denied but considered less important). The most frequent answers were: I would not care, I would do nothing; submissiveness.
- d) *Appraisal of the situation*. Responses were found only in the second question series. The answers implied deliberateness and conditions on defensive responses, concerning either another person (extenuating circumstances, rationalization, attempts to understand his behaviour) or personal behaviour (consent to take the blame).
- e) *Conciliatory response*. Answers included in the category represent rational problem solving, the aim of which is to mitigate conflicts like impunitive ego-defence and need-persistence types of reaction (Rosenzweig). The answers varied according to the situation so as to contain compromises, warnings, initiative for clearing away obstacles, forgiveness.

The *intensity* of the responses was scored only for the categories of direct physical and verbal defence. For the other categories, the intensity hierarchy was not differentiable correspondingly, for which reason a response included in the category was marked 1, and one excluded from it 0.

The intensity was scored 2—1. Example: question 1 (QS 1): What would you do if one of the boys in your class who is of the same size as you hurt you?

Direct physical aggression

Score 2 I'd get furious and hurt him back.
I'd hit him.

Score 1 I could sometimes hit him.
I'd just push him off.
I'd chase him, sure he'd stop.

Direct verbal aggression

Score 2 I'd start quarrelling.
I'd shout back.

Score 1 I'd tell him to stop.
I'd say that I'd tell the teacher.

Reliability of the test variables. Split-half reliabilities for the categories of QS 2, corrected for length by the Spearman-Brown formula, are given in Table 15. For estimation of the reliability of QS 1 the correlations were calculated between the parallel categories of QS 1 and QS 2. Information about the reliability of the categories was also provided by their communalities obtained by a factor analysis¹ of the test variables.

¹ The variables included in the factor analysis consisted of the scores for the categories of QS 1 and QS 2, the sum score for offensive aggression (QS 3), the scores for both pairs of alternatives uncontrolled expression/controlled inhibition

Table 15. The reliability of the test variables, question series 1 and 2

Variables	Split-half reliability QS 2	Correlation QS 1/QS 2	Communality	
			QS 1	QS 2
Σ Defensive aggression	85	65		
Direct physical	67	60	65	75
Direct verbal	43	41	40	47
Direct mimic	46	27	44	29
Indirect physical	57	44	64	58
Indirect verbal	36	36	38	30
Description of negative affects	78	50	53	25
Escape	33	33	35	37
Indifference	75	50	55	58
Appraisal of situation	84			26
Conciliatory response	78	42	42	63

of impulses, and controlled expression/uncontrolled inhibition of impulses in the SLEI test (QS 2), the teachers' ratings for the number of overt responses (variables 25, 26) and control of behaviour (18, 38; chosen on the basis of the two-dimensional figure).

The total (estimated) communality was explained by six factors, and the communalities given in Table 15 were also based on six factors. The proportionally high correlations between the parallel categories affected the composition of the factors as expected.

Factor I accounted for the largest proportion of the communality of the variables for direct and indirect physical defence (QS 1, 2), offensive aggression (QS 3), and aggression in the SLEI test, and also for a proportion of escape (QS 2). The negative loadings were found in the variables for conciliation (QS 1, 2), and for teacher rating 18 (reliability).

Factor II was spanned bipolarly by the variables for indifference (QS 1, 2) vs. verbal and mimic defensive aggression.

Factor III was loaded positively by the variables for indirect verbal defence (QS 1, 2), uncontrolled inhibition of impulses in the SLEI test, and weak control of behaviour (teacher rating 38).

Factor IV contained the variables for description of negative affects (QS 1, 2) and indirect verbal defence (QS 1).

Factor V was spanned bipolarly by the variables for the number of overt responses (teacher ratings 25, 26).

Factor VI accounted for the largest proportion of the communality of the variables for escape (QS 1, 2). The loadings with the opposite sign were in the variables for direct, particularly verbal defensive aggression.

The lowest reliabilities were found for the categories of direct mimic and indirect verbal aggression, and escape. The reliability of the other variables could be considered satisfactory for the examination of the hypotheses by comparing the means for the subject groups.

Question series 3. The questions were concerned with habits of offensive aggression. Example: question 1: Do you ever attack a boy of your size or try to hurt him in any way, even if he had done you no harm, just to tease him? The answers were scored 0—2 depending on how ready the subject was to confess aggression of that kind.

Score 2 Well, sometimes.

Score 1 Pretty seldom.

Score 0 I won't attack without reason.

The sum score for offensive aggression (summed over all of the 30 items) correlated with that for QS 1 (.64) and for QS 2 (.51). Its communality obtained by the factor analysis was .70.

The responses to the *SLEI test* (QS 2) were scored for each pair of alternatives by giving score 1 for a response in a particular direction, and 0 for that in the opposite direction. Each variable can thus be considered bipolar and independent of the other variables in scoring. Split-half reliabilities for the variables were

uncontrolled expression/controlled inhibition of impulses	.87
controlled expression/uncontrolled inhibition of impulses	.45
uncontrolled expression/uncontrolled inhibition of impulses	.65
controlled expression/controlled inhibition of impulses	.20

The highest reliabilities were found for the pairs of alternatives in which one represented aggressive treatment. The most unreliable pair was that of which the both mates represented strong control of behaviour.

4. 3. Subjects

4. 3. 1. *Composition of the extreme groups*

The subjects were chosen from among the boys who had been the subjects in the study of Problem A. The factor scores for the four factors extracted from the boys' peer ratings were calculated for each of the boys used as subjects. The purpose was to compose the extreme groups for each factor and to use these groups as subjects for Problem B. An inspection of the distributions of the factor scores and their interdependences revealed, however, that dependences prevailed between the factor scores so that some subjects had high scores for two factors. Of these subjects two groups were composed. The total number of groups was 6, of which each consisted of 10 boys.

A leading principle in the composition of the extreme groups was that the

Table 16. Means and standard deviations of the factor scores for the extreme groups.

Group (N = 10)	Factor I		Factor II		Factor III		Factor IV	
	M	σ	M	σ	M	σ	M	σ
F I: Aggressive	2.65	0.40	-0.21	0.51	-0.51	0.69	-0.26	0.60
F II: Stable	-0.10	0.26	2.82	0.71	-0.31	0.53	-0.03	0.80
F III: Anxious	-0.52	0.42	-0.03	0.53	2.19	0.45	0.08	0.75
F IV: Controlled extraverts	-0.01	0.35	0.53	0.44	-0.30	0.59	1.57	0.26

I + III: Aggressive anxious	1.42	0.59	-0.22	0.28	1.59	0.50	0.67	0.48
II + IV (—): Stable introverts	-0.64	0.17	1.04	0.53	0.66	0.59	-1.62	0.60

Population (N = 183)	0.02	0.97	0.04	0.97	0.01	0.95	0.02	0.82

F-ratios: Factor I: 91.58 ($p < .001$); F II: 45.17 ($p < .001$); F III: 36.22 ($p < .001$); F IV: 20.74 ($p < .001$)

The significance of the differences between the groups in the factor scores for each factor: *aggressive/others*, F I: $p < .001$; *stable/others*, F II: $p < .001$; *anxious/others*, F III: $p < .001$, except *anx./aggr.-anx.* $p < .02$; *controlled extraverts/others*, F IV: $p < .001$; *aggressive-anxious/others*, F I: $p < .001$, except *aggr.anx./aggr.* $p < .001$, F III: $p < .001$, except *aggr.-anx./anx.* $p < .02$ and *anx./stab. intr.* $p < .01$; *stable introverts/others*, F II: $p < .001$, except *stab. intr./contr. extr.*, $p < .05$, and *stab. intr./stab.*, $p < .001$, F IV: $p < .001$.

subjects' scores for a particular factor were to deviate from the mean at least one standard deviation, and that the scores for the other factors were to be as near the mean as possible, yet not to deviate from it in the same direction. The means and standard deviations of the factor scores for the groups are given in Table 16.

4. 3. 2. Differences between the extreme groups in rated aggressive and nonaggressive behaviour

The overt behaviour characteristic of each extreme group is describable in terms of the means of the rating variables for aggression and nonaggression.¹ The correspondences between the means of the scores obtained by peer rating and teacher rating were very good, with the exception of the variables that had behaved differently in the factor analyses (7 and 16 in particular): this suggested that *the choice of the extreme groups from the sample on the basis of the peer ratings had considerable concurrent validity on the teachers' ratings.*

¹ The tables representing the means of the scores obtained by peer rating and teacher rating are available mimeographed.

The differences between the extreme groups in the peer ratings for aggression (variables 1—12), controlled expression (13—15), controlled inhibition (17—20), and uncontrolled inhibition (21—22) of impulses are summarized in Figure 8.

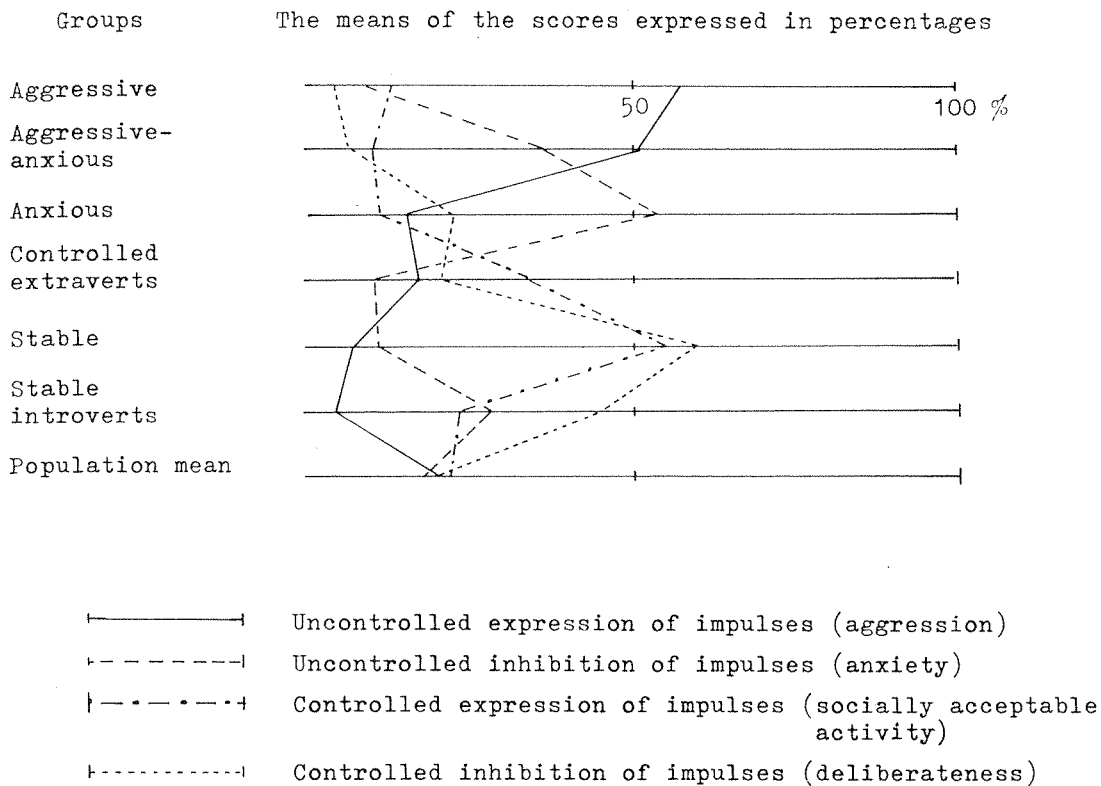


Figure 8. The differences between the extreme groups in aggressive and nonaggressive behaviour, boys' peer ratings.

The population mean of *uncontrolled inhibition* of impulses (anxiety; $N = 183$, all the boys used as subjects in the study of Problem A) was exceeded by the means for the anxious, aggressive-anxious, and also for the other group of introverts (stable introverts).

Controlled expression of impulses (socially acceptable activity) was most characteristic of the stable and the controlled extraverts, and least characteristic of the anxious and aggressive-anxious, which, according to the two-dimensional descriptive model, were the groups opposite to the former.

Controlled inhibition of impulses (deliberateness) was slightest in the behaviour of both aggressive groups, and strongest in that of the stable groups.

The differences between the groups in the amount of *aggression* were distinct. The opposite groups were the stable introverts and the aggressive, whereas the means for the controlled extraverts and the anxious were much the same as the population mean. There were also differences between the groups in the order of size of the means of individual aggression variables. The forms of aggression most characteristic of the aggressive were offensive aggression and physical defence. Both of them had loaded heavily on the general aggression factor obtained by the factor analyses for the aggression variables (Table 13,

p. 129). The rank-difference correlation coefficient between the means of the aggression variables for the aggressive and the loadings of these variables on Factor I extracted from the boys' peer ratings was .96. The aggressive behaviour of the aggressive-anxious was describable in terms of the second aggression factor (indirect aggression). The rank correlation between the means and loadings of the aggression variables was .71. Contrary to the assumption that direct aggression is characteristic of controlled extraverts and indirect aggression of the anxious, no considerable qualitative differences could be found in their aggressive behaviour. It could be seen, however, that sneaking had been more frequent among anxious boys than among controlled extraverts. The aggression factor in terms of which the behaviour of these groups could be primarily described was Factor III (defensive aggression independent of offensive aggression).

4. 3. 3. *Differences between the extreme groups described in terms of the reference and background variables*

The ratings. For a description of the differences between the subject groups in terms of the main dimensions of the descriptive model (Hypothesis A, p. 107) the means of the reference variables rated by the peers and teachers were calculated.¹ As the reference dimensions 'number of overt responses' and 'control of behaviour' had been rated to be more independent of each other by the teachers than by the peers, an inspection of the differences was based primarily on the teachers' ratings.

The number of overt responses (variable 25) was great in the behaviour of the controlled extraverts and the aggressive, and small (variable 26) in that of the stable introverts and the anxious. The middle area of the dimension was represented in the behaviour of the stable and aggressive-anxious.

The best measure of weak control of behaviour was in the teachers' ratings variable 38 (be unsteady and lack concentration in work and attentiveness), and in the peer ratings variable 30 (be unfit for leadership). The means of both variables for the aggressive, aggressive-anxious, and anxious exceeded significantly the means of variable 28 (be always friendly to others) for strong control of behaviour, although the mean for the controlled extraverts was but approximately the same as the population mean.

On the basis of the means of the aggression, nonaggression, and reference variables the aggressive group could be considered as representing uncontrolled expression of impulses, and the anxious uncontrolled inhibition of impulses, expressed in terms of the two-dimensional descriptive model. These two patterns of behaviour had combined in the behaviour of the aggressive-anxious, which was characterized by weak control of behaviour and indirect aggression, and constituted an intermediary type in the dimension 'number of overt responses'.

Of the groups characterized by strong control of behaviour the one most contrary to the aggressive was stable introverts representing controlled inhibition of impulses. The stable did not clearly represent any hypothesized pattern of behaviour; the behaviour typical of them contained both controlled expression

¹ The table is obtainable mimeographed.

and inhibition of impulses. On the basis of the teachers' ratings the behaviour of the stable was, however, characterized more by a great than a small number of overt responses. This was also the case in the behaviour of the aggressive-anxious. (The stable and the aggressive-anxious could be considered opposite in the dimension 'control of behaviour'.) In the ratings made of the stable subjects favourable personality traits had accumulated. The behaviour of the controlled extraverts was characterized by a great number of overt responses involving controlled expression of impulses rather than aggressive behaviour. Controlled expression of impulses was thus typical of two groups: controlled extraverts and the stable, the only difference being that the behaviour of the stable was more coloured by strong control of behaviour than that of the controlled extraverts. The group of controlled extraverts did not represent the pattern of behaviour of direct aggression independent of offensive aggression as obviously as expected, which may have been partly due to the exclusion of different degrees of intensity from the sampling of the aggression variables, as discussed earlier (p. 132). Most contrary to the behaviour of the controlled extraverts was that of the anxious.

Although the groups were composed on the basis of four factors (p. 137), their characteristics and relations to each other could be described in terms of the two main dimensions of the descriptive model. An explanation of the result is that the different variable groups were bound together by strong common variance which could be described in terms of two orthogonal axes identifiable as the dimensions of the descriptive model.

The inventory scales. In spite of the fact that, according to the teachers' and peers' ratings, the differences between the groups were very distinct, the scores for the inventory scales separated the groups from each other in a significant way only in some cases.¹

As far as overt behaviour is concerned, the contrary groups separated from each other by the inventory variables most distinctly and according to expectations were the stable introverts and the aggressive: the scores for restlessness and insensitivity were significantly higher for the aggressive, whereas the scores for dependency, altruism, and the lie scale² were higher for the stable introverts. No significant difference could be found between the controlled extraverts and the anxious, nor between the stable and the aggressive-anxious, in spite of the considerable differences in their overt behaviour. Contrary to the simplified hypothesis (p. 111) both the stable and the aggressive-anxious had high scores for the neuroticism scale, which indicated low correspondence between self-ratings and the ratings made by other persons in the dimension 'control of behaviour'.

¹ The table presenting the means of the groups is obtainable mimeographed. The inventory scales are grouped and ordered on the basis of Figure 7 (p. 134).

² Eysenck, Syed & Eysenck (1966) compared girls' and boys' scale scores and found that a high score for the lie scale correlated positively with femininity. Of the extreme groups the stable introverts could be considered the most feminine in behaviour.

*School achievement.*¹ The superiority of the school achievements of the stable could be clearly seen both in the LUKILA test and school marks. The second best group was that of the controlled extraverts. In the peer ratings, completely independent of ratings of school achievement, favourable traits had accumulated in the best pupils of the class. The same phenomenon in teachers' ratings has usually been considered a consequence of the halo effect. The result can also be interpreted as an indicator of an actual relationship between controlled expression of impulses and cognitive capacity, as assumed earlier (p. 106). It is possible that these connections are relatively strong in the case of lower-grade pupils, but that they weaken with age.² According to the school marks and the school achievement test, the achievements of the groups representing weak control of behaviour were significantly poorer than those of the groups characterized by strong control of behaviour. Those with the poorest achievements were the anxious instead of the aggressive, as shown by the scheme in Figure 9. The aggressive were, however, the most careless group in their work, which could be seen both in the means for their marks in carefulness and in the number of mistakes in the reading tests.

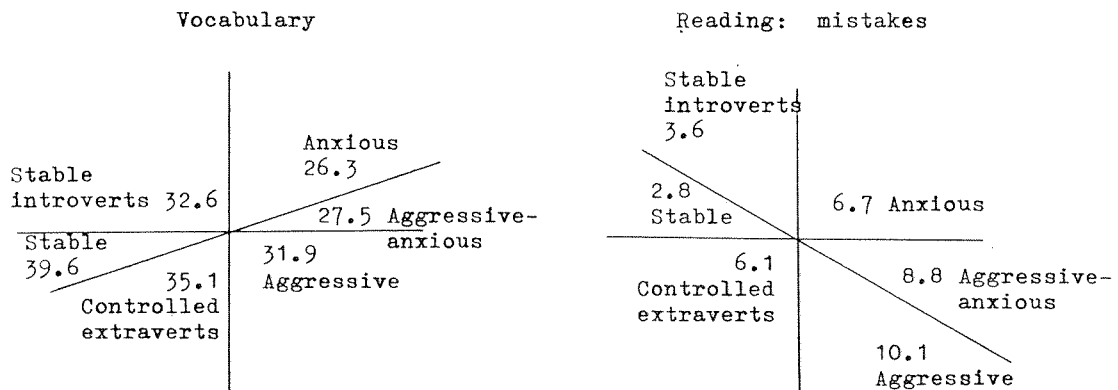


Figure 9. The differences between the extreme groups in school achievement, presented schematically.

There were differences between the groups in school achievement within the dimension 'strong control of behaviour characterized by socially acceptable reactivity/weak control of behaviour characterized by anxiety', and in carefulness within the dimension of aggression, i.e. uncontrolled expression of impulses/controlled inhibition of impulses.

¹ The table presenting the means of the groups is obtainable mimeographed.

² Savage (1966) studied children aged 7—8 and 11 and found out that a high score for extraversion (measured by EPI and C.P.Q. of Cattell) is related to brighter intellectual level and high academic attainment (correlating +.19 — +.27). In university students the relationship was in the opposite direction (Savage, 1962). The relationships are probably still stronger when rating variables are used for extraversion.

Background factors. The social status of the family was scored 1—3 according to the level of education that the parents' profession required.¹ The parents of the controlled extraverts and the stable had received significantly higher education than those of the anxious. The differences between the groups could be described in terms of the dimension 'control of behaviour' corresponding to that presented in connection with school achievements (Figure 9).

The mothers of the aggressive and aggressive-anxious boys worked outside home in more cases than those of the stable introverts.^{1,2} The differences between the groups could be described in the aggression dimension like those of carefulness (Figure 9).

The number of children in the family did not separate the groups in a significant way. The aggressive were, however, the eldest or middle-born children in the family more often than the anxious, stable, or stable introverts.¹

When presented the question series the subjects were asked how their parents behaved when they had been disobedient. The aggressive, aggressive-anxious, and anxious told that they were often given corporal punishment (beaten, shaken by the hair). The controlled extraverts said that such punishment was possible for something very serious, but only one of them said that he had been thrashed during that school year. The controlled introverts reported that they were only shaken by the hair, while in the experience of the stable corporal punishment belonged to infancy. The subjects characterized by strong control of behaviour said that their parents usually reproached them or discussed the matter with them. It is generally recognized that these responses appeal to a child's own cognitive appraisal more than corporal punishment. The assumption has been made earlier that cognitive appraisal is connected with neutralization of the emotional aspect of aggression impulses, and, through it, with controlled expression of impulses. The differences in the parents' child-rearing practices accorded with the hypothesis.

The family member who carried out the punishment was not said to be the same in the different groups. The aggressive were punished mostly by their mothers (70 %), who also displayed a great amount of direct verbal aggression toward them. The fathers of these families were indifferent and their role as educators was vague. The parents acted inconsistently so that the child could evade punishment by escape or dishonesty. The controlled extraverts believed that father would be the person to punish them (80 %). The parents' role as educators probably affects the masculine identification of boys and, through it, internalization of norms for aggressive expression, which partly accounts for the differences in the behaviour of the aggressive and the controlled extraverts in this study. The anxious and aggressive-anxious said that they were given corporal punishment by both parents (60 %). Here the groups differed from the aggressive: the former were capable of more efficient inhibition of the behavioural aspect of impulses.

¹ The table presenting the means of the groups is obtainable mimeographed.

² The results obtained by McCord et al. (1963) showed that if the home is stable, the fact that mother works outside home decreases competition between the children and »produces no indication of peer aggressiveness. In unstable homes such absence is more frequently perceived as rejection, and at later stages the boys tend to show a higher delinquency rate.»

The severity of the causes of corporal punishment varied from one group to another. The aggressive were most often (50 %) punished because of conflicts with the other children of the family, and they revealed that they were openly jealous of their younger sisters and brothers. There were two more frequent causes connected with aggressive behaviour: fighting with playmates and breaking objects. The aggressive-anxious disobeyed mainly by doing something forbidden or resisting their parents. These were also the most usual causes of corporal punishment in the group of the anxious, yet with the hypothesized qualitative differences that the causes were, from a more general point of view, less severe (climbing into trees, making a mess at home, etc.). The subjects characterized by strong control of behaviour were punished for a great variety of reasons, which cannot be put into one single category. The causes were mainly concerned with breaking the norms of the family, such as neglecting one's duties, watching TV, eating, and also teasing a sister or brother (only the controlled extraverts).

The background variables of the extreme groups in the aggression dimension (the aggressive and the stable introverts) indicated that there were no differences in the social status, but in most cases the mothers of the aggressive worked outside the home, and these were the eldest or middle-born in the family. The differences were probably related to the quality and quantity of frustrations, the evidence for which was open jealousy toward a younger sister or brother (the aggressive), conflicts with mother, and inconsistency in the parents' child-rearing practices. These findings possibly reflected indifference toward the child, which, at the $p < .05$ level of significance, was related to offensive aggression and defensive aggression connected with it, as shown in Part I. The social background of the stable introverts favoured the development of dependency especially on the mother, which was reflected in, for example, the group answers in the inventory.

Some differences were thus found in the social backgrounds of the groups, although, on the basis of the characteristics of the variables, the results can be considered only explorative.

4. 4. Differences between the extreme groups in their aggressive responses to symbolic aggression stimuli

4. 4. 1. *Analysis of the results*

The chapter deals with the subjects' verbal responses to question series 1—3. The aggression stimuli of

- QS 1 were attacks of other persons, and those of
- QS 2 were more general frustrating situations.
- QS 3 was concerned with habits of offensive aggression.

In the testing of Hypotheses B. 1 and B. 3 the groups were compared on the basis of the sum scores for defensive (QS 1, 2; categories a-e, p. 144) and offen-

sive (QS 3; questions 1—30) aggression. The testing of Hypothesis B. 2 was based on these five categories of aggression, of which three involved direct, and two indirect defensive (QS 1, 2) or on offensive (QS 3) aggression.

The hypotheses were tested by using a single-factor and three-factor design of analysis of variance, of which the latter was a special case of a $6 \times 5 \times 6$ factorial experiment with repeated measures on the last two factors (Winer, 1962). A three-factor analysis of variance was performed for each of the following dependent variables: QS 1, the sum score and the scores for the five categories of defensive aggression; QS 3, the sum score for offensive aggression. The first factor consisted of six groups of 10 subjects. For QS 1 there were five independent variables (types of aggression stimuli or attack: direct physical, verbal, mimic, and indirect physical and verbal attack) and six conditions (attackers: boy of the same size, taller boy, smaller boy, girl, teacher, parents) in each variable. For QS 3 the five independent variables consisted of forms of offensive aggression (parallel to the types of attack in QS 1), and the six conditions consisted of victims (parallel to the attackers in QS 1).¹

Due to rather large differences between the groups in the means for offensive aggression, the variances were not completely homogeneous. According to Winer, »moderate departures do not, however, seriously affect the sampling distribution of the resulting F statistic . . . [there] is a small positive bias, since relatively more significant results will be obtained than the exact sampling distribution warrants» (p. 92). In order to avoid the error of rejecting the null hypothesis the $p=.01$ level of significance was adopted for calling a finding statistically significant.

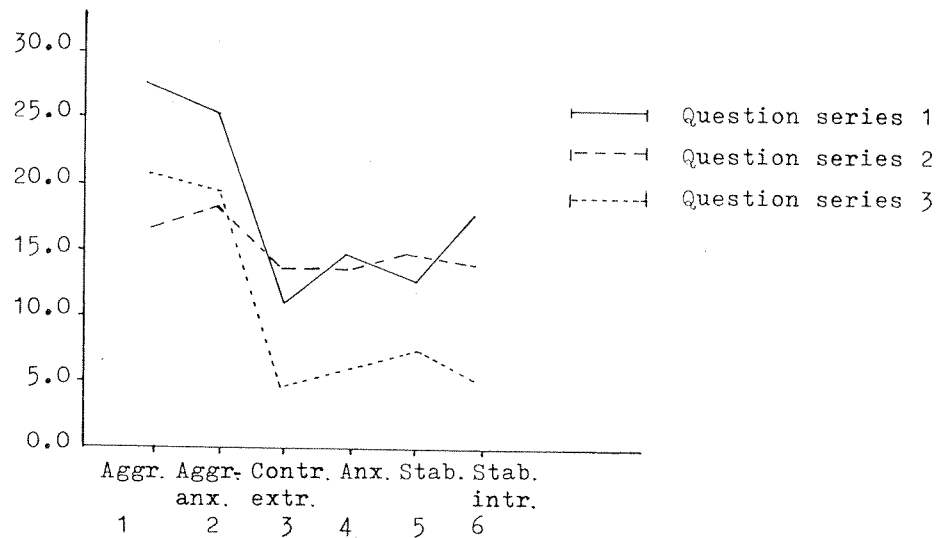
4. 4. 2. *Relationships between the magnitudes of aggressive verbal responses and overt aggression*

It was predicted in Hypothesis B. 1 (p. 111) that the differences between the extreme groups in the magnitude of their aggressive verbal responses to symbolic aggression stimuli correspond to their differences in the amount of overt aggression. The means of the sum scores for aggressive responses (QS 1, 2, 3) are presented graphically in Figure 10. The groups were ordered on the x-axis according to their overt aggressiveness; as shown in Figure 8 (p. 149), the most aggressive group was that of the aggressive, and the least aggressive that of the stable introverts.

The differences between the means for the groups showed the following.

(1) The differences between the aggressive and nonaggressive groups were significant for QS 1 and 3, as expected. Both of the series consisted of very direct questions about aggressive habits. For QS 2 the

¹ The tables summarizing the results are obtainable mimeographed.



The significances of the main effects of the groups (F-ratio) and the differences between the means for the groups (t-test): $p <$

	F	1/2	1/3	1/4	1/5	1/6	2/3	2/4	2/5	2/6	6/3	Other differences
QS 1	.01	n.s.	.001	.01	.01	.05	.002	.02	.01	.05	.1	n.s.
QS 2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	.1	.1	n.s.	.1	n.s.	n.s.
QS 3	.01	n.s.	.001	.002	.01	.001	.01	.05	.05	.02	n.s.	n.s.

Figure 10. The means of the sum scores for aggression, QS 1, 2 and 3.

differences between the groups were parallel but not statistically significant.

(2) None of the question series separated the nonaggressive groups as expected. In particular, the magnitude of the aggressive responses of the controlled extraverts was smaller and that of the stable introverts greater than expected.

(3) The assumption on a direct relationship between aggressive verbal responses and overt aggression was only partly supported.

4. 4. 3. *Direction of aggression*

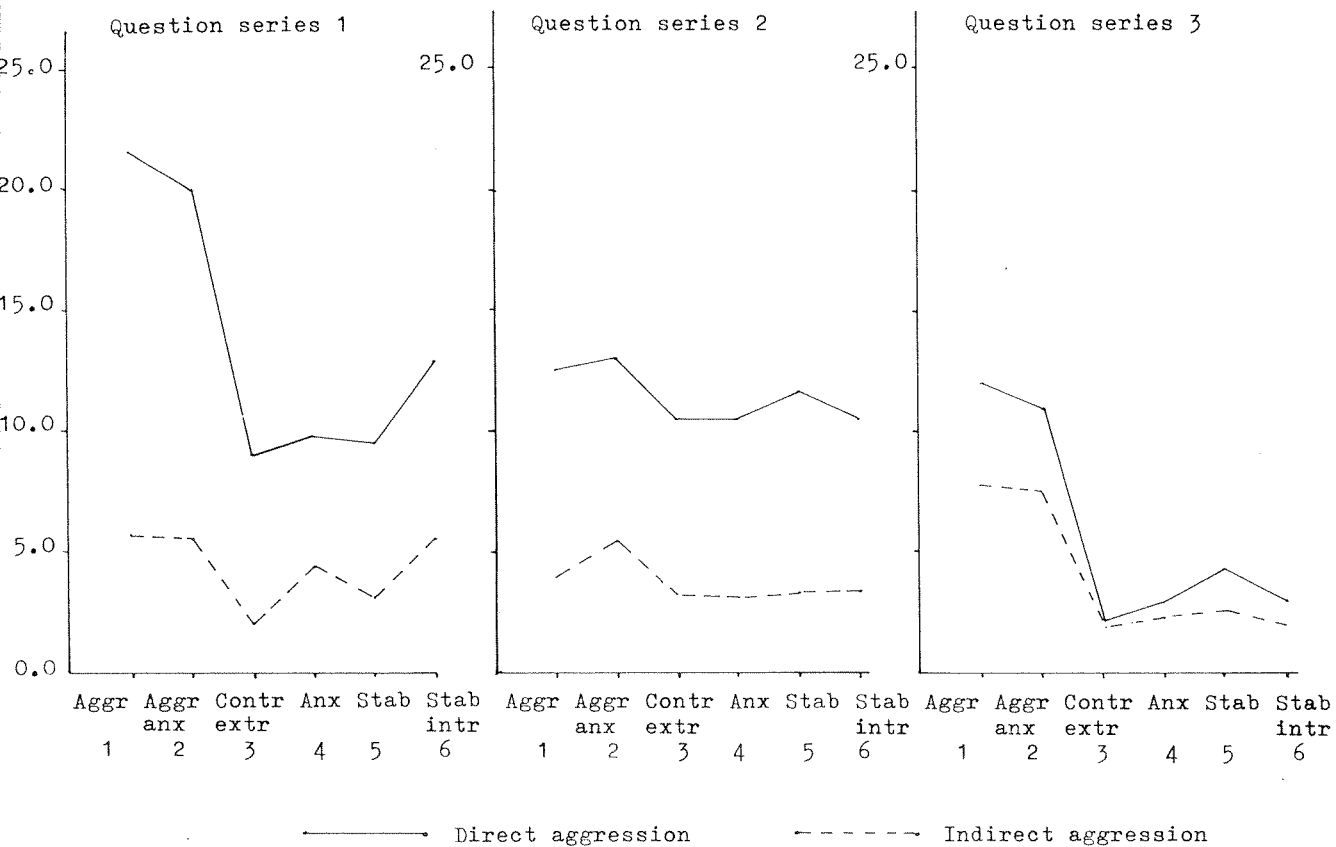
It was predicted in Hypothesis B. 2 that indirect aggression is characteristic of individuals with weak control of behaviour but not with a great number of overt responses, i.e., of the aggressive-anxious and the anxious.

The group means of the sum scores (categories d, e) for indirect

aggression are presented graphically in Figure 11. The means indicated that the hypothesis was only partly supported.

(1) In general, the magnitude of indirect aggression in the responses of the *aggressive-anxious* was greater than in those of the groups with strong control of behaviour, particularly in those of the controlled extraverts, but differed from the responses of the aggressive only for QS 2.

(2) For the *anxious* the only finding that accorded with the hypothesis was a slight difference between them and the controlled extraverts in the amount of indirect aggression for QS 1.



The significances of the main effects of the groups (F-ratio) and the differences between the means for the groups (t-test):

- QS 1; direct a: F ($p < .01$), groups 1—2/3—6 $p < .01$ —.05
 indirect a: F (n.s.), 1/3 $p < .01$; 1/5 $p < .02$; 2, 4/3 $p < .1$; 6/3 $p < .1$
- QS 2; direct a: F (n.s.), no significant difference between the means
 indirect a: F (n.s.), 2/3—6 $p < .01$; 2/1 $p < .05$
- QS 3; direct a: F ($p < .01$), 1—2/3—6 $p < .002$ —.05, except 2/5 $p < .1$
 indirect a: F ($p < .01$), 1—2/3—6 $p < .002$ —.05

Figure 11. The means of the sum scores for direct and indirect aggression, QS 1, 2 and 3.

The further prediction was made in **Hypothesis B.2** that direct defensive aggression is characteristic of individuals with a great number of overt responses, i.e., of the aggressive and the controlled extraverts. As shown in Figure 11,

(3) as for the *aggressive* the hypothesis was supported only for QS 1. The significant differences between the aggressive and the other groups were mainly due to their differences in the amount of physical defensive aggression. (The means for the individual aggression categories are given in Table 17.) No significant differences could be found between the aggressive and the other groups in the sum scores for direct defensive aggression in QS 2, but for physical defensive aggression, however, some slightly significant differences appeared between them. In mimic and verbal aggression the differences between the aggressive and the other groups were smaller than in physical aggression, both for QS 1 and QS 2.

Table 17. Means of the scores for the individual aggression categories, extreme groups

Variables	Aggressive 1	Aggressive-anxious 2	Controlled extraverts 3	Anxious 4	Stable 5	Stable introverts 6	F p<
QS 1: defensive aggr.							
Direct physical	11.4***	10.7*	3.2	4.1	3.6	3.1	.01
Direct verbal	7.8 ^a	5.7 ^{a3}	3.2	3.1	3.8	5.7	n.s.
Direct mimic	2.3	3.6	2.6	2.7	2.3	3.1	n.s.
Indirect physical	1.3*	1.1 ^{a3}	0.1	0.8	0.3	0.6	n.s.
Indirect verbal	4.5*	4.3	1.9	3.7	2.8	4.8	n.s.
QS 2: defensive aggr.							
Direct physical	5.4 ^{a3-6}	4.1 ^{a3}	2.4	2.8	2.6	2.9	.1
Direct verbal	6.9	8.4	7.1	7.1	7.8	7.2	n.s.
Direct mimic	0.5	0.5	0.8	0.4	1.0	0.5	n.s.
Indirect physical	1.8	2.2*	1.0	1.6	1.5	1.2	n.s.
Indirect verbal	2.0	3.1 ^a	2.3	1.4	1.8	2.1	n.s.
QS 3: offensive aggr.							
Direct physical	3.2**	3.6**	0.7	0.8	1.1	0.8	.01
Direct verbal	4.6**	4.0*	0.8	1.3	1.6	0.9	.01
Direct mimic	4.0***	3.4 ^{a3, 4}	0.8	0.7	1.7	1.4	.01
Indirect physical	5.1**	4.4*	1.2	1.6	1.6	0.9	.01
Indirect verbal	3.7*	4.0*	0.8	1.0	0.7	1.0	.01

* significant at .05 level, ** at .01 level, *** at .001 level, ^aat .1 level compared with the mean printed in italics.

*ⁿ, ^{aⁿ} the difference is significant only in comparison with the group n.

The aggressive and aggressive-anxious were not significantly different from each other in the amount of direct aggression, which contradicted the hypothesis. It seemed to be the tendency, however, that while physical defence was typical of the aggressive, proportionally more verbal and mimic aggression appeared in the responses of the aggressive-anxious.

(4) As far as the *controlled extraverts* are concerned, the hypothesis was not confirmed. In their responses direct defensive aggression was as infrequent as in those of the other nonaggressive groups.

(5) Hypothesis B. 2 was concerned with defensive aggression. For the sake of comparison the inter-group differences in offensive aggression were also studied. The aggressive groups differed significantly from the nonaggressive ones in all forms of offensive aggression, which met the expectations.

4. 4. 4. *Effects of external control on aggressive responses*

It was predicted in **Hypothesis B. 3** that external or situational control has the effect on an individual's aggressive responses that with strong external control the magnitude of the responses of all the types of behaviour is small, but that it increases monotonically when the thwart is weakened. The differences between the groups were assumed to increase simultaneously.

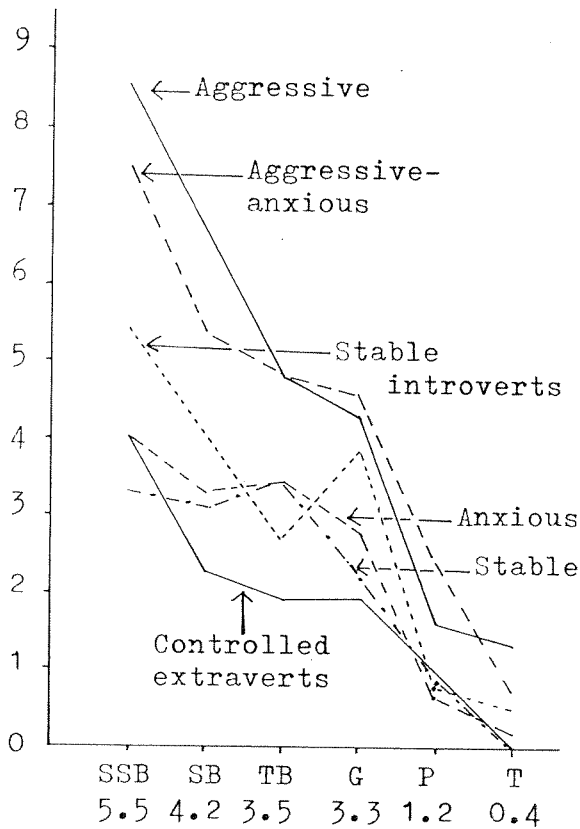
External control was varied in QS 1 and QS 3 by varying the target of aggression (attacker and victim, p. 141). The concept of situational control had been defined in Part I by using the criterion of how condemnable direct, defensive, physical aggression is. According to the teachers' ratings this form of aggression had been most frequently directed toward boys of the same size, next most frequently toward smaller boys, taller boys, and girls, and least frequently toward teachers. The instigators and victims in the question series also included the parents, which in the scale would probably be located between teachers and girls.

The distribution of aggressive responses (sum scores; QS 1, 3) to the different targets is presented graphically in Figure 12.

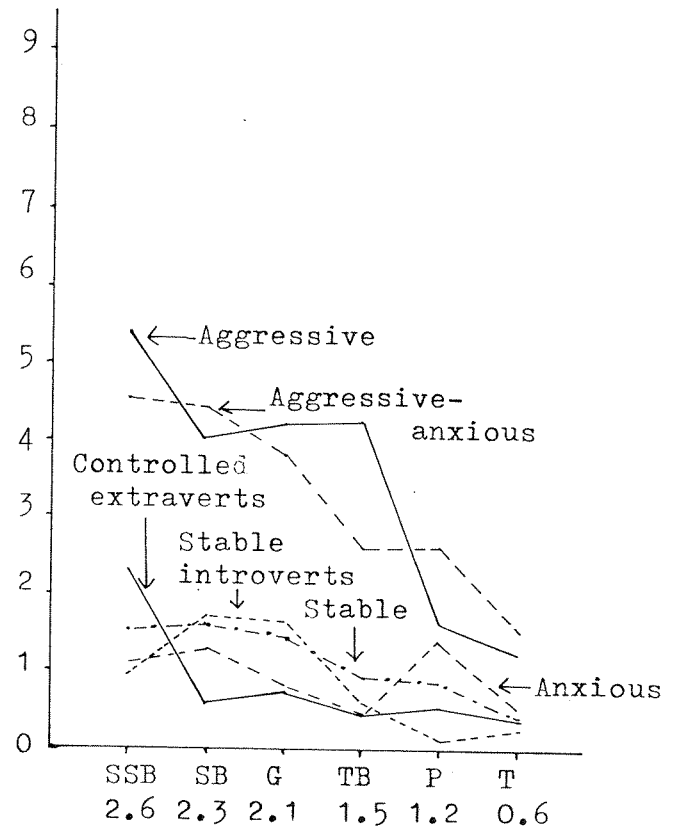
(1) In accordance with the hypothesis, the differences between the groups both in defensive and offensive aggression were smallest when the target of aggression was said to be the teacher, and greatest when it was said to be a boy of the same size.

(2) The hypothesis according to which there is an increase in the magnitude of aggressive responses when the thwart is weakened was

Question series 1: defensive aggression



Question series 3: offensive aggression



SSB = boy of the same size
 TB = taller boy
 G = girl

SB = smaller boy
 P = parent
 T = teacher

Figure 12. The distribution of aggressive responses among the targets.

supported by the sum scores for aggression (Figure 12): the main effects of C (targets) were significant ($p < .01$) both for defensive (QS 1) and offensive (QS 3) aggression.¹ The order of the targets was as expected, except that offensive aggression was more frequent toward girls than taller boys.

The analyses of variance for each category of defensive aggression revealed that the main effects of the attackers were significant ($p < .01$) on all the forms

¹ The mimeographed tables.

of defensive aggression. In each case the magnitude of defensive aggression was distributed among the different attackers in much the same way as shown by the target dimension in Figure 12. Some specific dependence on the attackers could, however, be found (Table 18): direct physical defensive aggression was directed particularly toward boys of the same size and smaller boys, and indirect aggression (sneaking) both toward the former and toward taller boys. The differences between the targets were not so apparent for direct verbal defensive aggression also directed toward authority figures.

Table 18. Dependences of the different forms of defensive aggression on the attackers, means for the subjects

Variables	SSB	SB	G	TB	P	T
Direct physical	1.98	1.88	1.27	0.70	0.18	0.00
verbal	1.10	1.28	1.05	0.78	0.48	0.22
mimic	0.88	0.47	0.53	0.38	0.37	0.13
Indirect physical	0.23	0.05	0.12	0.07	0.17	0.05
verbal	1.27	0.50	0.30	1.57	0.00	0.03

SSB = boy of the same size
SB = smaller boy
G = girl

TB = taller boy
P = parent
T = teacher

The significant $B \times C$ (*form of offensive aggression* \times *victim*) interaction ($p < .01$) for offensive aggression was a finding parallel to those concerning the effects of the attackers on the different forms of defensive aggression. The distribution of offensive aggression among the victims is shown in Table 19.

Table 19. Interaction between the forms of offensive aggression and the victims, mean for the subjects

Variables	SSB ¹	SB	G	TB	P	T
Direct physical	0.57	0.48	0.25	0.30	0.10	0.00
verbal	0.55	0.47	0.45	0.38	0.30	0.05
mimic	0.57	0.47	0.42	0.35	0.18	0.02
Indirect physical	0.42	0.37	0.57	0.15	0.50	0.47
verbal	0.45	0.45	0.40	0.33	0.13	0.10

¹ See table 18.

The number of different forms of offensive aggression toward boys of the same size, smaller boys, and taller boys was almost the same, although direct aggression was slightly more frequent than indirect aggression. Girls were least frequent targets of direct physical offensive aggression, and taller boys of indirect physical offensive aggression. In the latter there were considerable differences between girls and taller boys: boys teased girls quite frequently by disturbing them or by handling their possessions without permission. Indirect physical aggression was also the most frequent form of offensive aggression toward authority figures. Furthermore, parents were targets of direct verbal aggression.

(3) The hypothesis that there is a parallel but quantitatively different increase in the magnitude of the aggressive responses of the different groups was supported for defensive aggression, even though the group x attacker interaction was slightly significant ($p < .05$). The group x victim interaction for offensive aggression was still more significant ($p < .01$).

For defensive aggression (QS 1) the greatest exception to the monotonic increase in the magnitude of aggression was

- the great amount of aggression displayed by the stable introverts toward girls.

The exceptions for offensive aggression were

- the great amount of aggression displayed by the aggressive toward taller boys,
- the great amount of aggression displayed by the anxious and aggressive-anxious toward parents, and
- the great amount of aggression displayed by the stable introverts toward smaller boys.

Of the nonaggressive groups the clearest discriminations between the targets had been made in the responses of the controlled extraverts. Offensive aggression was directed mainly toward boys of the same size, defensive aggression also, and proportionally slightly more, toward the other peers.

The magnitude of aggressive responses toward boys of the same size separated the groups much in the same way as the habit strength of overt aggression, with the exception that the defensive aggression of the stable introverts was more frequent and intense than expected. The result could be considered as supporting Hypothesis B. 1 (the magnitude of aggressive responses and overt aggression are positively related to each other), as it is probable that the inter-group differences in the amount of overt aggression in general were parallel to those in the amount of aggression toward boys of the same size.

The dependence of *each form of defensive aggression* on the attacker in the responses of each group was illustrated by the *group x attacker* interactions, which, with the exception of indirect verbal aggression, were significant.

In all the groups *physical* defence was most infrequent toward teachers and parents, but differences could be found in aggression toward peers. The aggressive and aggressive-anxious defended themselves physically against all the peer groups (the distribution of aggression among the targets was proportionally similar to that presented in Figure 12), the controlled extraverts almost exclusively against boys of the same size, the anxious and the stable against smaller boys, and the stable introverts against girls.

Direct *verbal* defensive aggression was directed toward the same targets as physical defensive aggression, with the exception that verbal defence was extended to the targets with stronger external control. The same appeared for *mimic* aggression.

The dependence of the form of offensive aggression on the victim in each extreme group was illustrated by a triple interaction (*group x form of offensive aggression x victim*), which was significant ($p < .01$). It was interpreted in the following way. In all the groups *physical* offensive aggression, like defensive aggression, was most infrequent toward teachers and parents, but intergroup differences were found in attacks upon peers. For the aggressive, aggressive-anxious, and stable, the distribution of physical offence among the victims was rather parallel to that of the sum scores for offensive aggression (Figure 12). The controlled extraverts attacked physically only boys of the same size, the stable introverts and the anxious girls and smaller boys.

The distributions of *verbal* and *mimic* offensive aggression was not comparable with the total distribution (Figure 12); their frequencies toward all the targets except teachers were relatively even. (The only exception was the group of controlled extraverts who also displayed these forms of offensive aggression mostly toward boys of the same size.)

As shown in Table 19, *indirect* physical offensive aggression was relatively frequent toward teachers. An inspection of the inter-group differences revealed that indirect physical offensive aggression toward teachers was displayed only by the aggressive and aggressive-anxious, toward parents also by the other groups except the stable introverts. The small amount of aggression displayed by the latter toward parents possibly indicated the hypothesized dependency upon them and other authority figures. The findings concerning their home conditions as well as their scores for the inventory scale also accorded with the assumption. Both of the anxious groups, however, were relatively often found to attack their parents: the aggressive-anxious with all the forms of offensive aggression, the anxious with *mimic* and *indirect* physical aggression. The response was possibly due to the parents' punitive child-rearing practices.

(4) Another phenomenon interpretable as an effect of external control was the finding for QS 1 that physical attack did not elicit counter-aggression as frequently as direct verbal attack. The main effect of B (type of attack) on the total magnitude of defensive aggression was significant ($p < .01$). The means of the sum scores for defensive aggression in the different types of attack were: direct verbal attack

4.50, indirect physical 4.15, direct mimic 4.00, direct physical 2.98, and indirect verbal 2.38. The small amount of counter-aggression to indirect verbal attack was possibly due to a lack of immediate information of attack.

The group \times type of attack (AB) interaction was not significant. The differences between the groups in the magnitude of defensive aggression toward the different types of attack were parallel and supported Hypothesis B. 3.

An analysis of the effect of the type of attack on each form of defensive aggression revealed that the main effects of the types of attack were significant ($p < .01$), with the exception of indirect verbal defensive aggression. The means indicated that *in defensive aggression there was a tendency to repeat the stimulus*: physical attack caused either direct or indirect physical defence, verbal attack verbal defence, etc.

Stimulus repetition occurred similarly in all groups, for which reason the group \times type of attack (AB) interactions were not significant.

All the attacker \times type of attack (BC) interactions were, however, significant ($p < .01$), which meant that *a particular form of defensive aggression did not reappear as stimulus repetition independently of the attacker (instigator)*. For example, direct physical aggression was not displayed toward a teacher, even though the type of attack of the teacher had been direct physical. On the other hand, smaller peers were targets of physical aggression even though their type of attack had been only verbal or mimic. The result indicated that the subjects tended to adjust their defensive responses to stimulus situations and take into account especially the strength of external control.

4. 4. 5. *Interpretation of the results*

The hypotheses on the correspondences between verbal responses and overt behaviour were formulated as simply as possible with expectations of direct relationships. Since the obtained relationships differed, however, from simple correspondences in some respects, another frame of reference, based on a more complicated dependence, was adopted, with application of the concepts presented in the theory of achievement motivation by Atkinson (1964).

Prior to the presentation of the hypotheses, it seemed possible that the subjective meanings of aggression stimuli might vary according to the habit strength of aggression. The subjective meanings can be understood to suggest the relative strength of approach (aggression) and avoidance (aggression inhibitory) tendencies aroused in a stimulus situation. If the assumption is made that the strength of the aggression tendency (T_A) activated by an aggressive provocation is relatively constant, interindividual differences in verbal responses are interpretable on the basis of inhibitory tendencies.

The assumption can be made that the strength of the aggression inhibitory tendencies activated by an aggressive provocation is determined both by the strength of aggression inhibitory habits (which depend inversely on the strength of aggressive habits) and by subjective probabilities of failure, in the same way as assumed in the theory of achievement motivation by Atkinson (1964; 244) on the tendency to avoid failure: $T_{-f} = M_{AF} \times P_f \times I_f$. (T_{-f} = tendency to avoid failure; M_{AF} = motive to avoid failure; P_f = expectancy of failure; I_f = negative incentive value of failure = $-P_s$). In connection with aggressive behaviour M_{AF} can be assumed to refer to the strength of aggression inhibitory habits. P_f is determined by the strength of aggressive habits: if these are strong, the individual estimates the probability of failure to be averagely smaller than if they are weak. I_f refers to shame (and embarrassment) of failure: when a task appears to be easy, the shame of failure is greater than when a task appears to be difficult. On the basis of their aggressive and aggression inhibitory habits the groups can be given the following fictitious indices characterizing the inter-group differences in the strength of the aggression inhibitory tendency activated by an aggressive provocation. For example,

	M_{AF}	P_f	I_f	T_{-f}
Aggressive	1	.10	— .90	— .09
Controlled extraverts	3	.50	— .50	— .75
Stable introverts	5	.90	— .10	— .45

When aggressive habits are of an average strength, aggression inhibitory habits (M_{AF}) as well as the probabilities of failure are average, which has the consequence that aggression inhibitory tendencies activated by an aggressive provocation are stronger than when aggressive habits are extremely strong or weak.

In addition to the aggression and aggression inhibitory tendencies activated by an aggression stimulus an individual's responses are probably accounted for by tendencies which may be described in terms of other motives, as assumed by Feather (1961) in an application of the theory of achievement motivation, who presented the concept of Extrinsic Motivation ($T = (T_s + T_{-f}) + T_{\text{Extr}}$). In aggressive behaviour Extrinsic Motivation can, for example, involve e.g. an individual's tendency to behave in a socially acceptable manner, in which case the direction of the tendency is the same as that of the aggression inhibitory tendency, or a tendency to attract attention at least negatively, in which case the direction supports the aggression tendency. Feather's formula was applied to aggressive behaviour as follows:

$$R_{\text{Aggr}} = (T_A + T_{-f}) \pm M_{\text{Extr}}$$

R_{Aggr} = the magnitude of an aggressive responses to a symbolic aggression stimulus. T_A = aggression tendency activated by the stimulus. T_f = aggression inhibitory tendency. M_{Extr} = other motives directing action, supporting either the aggression or aggression inhibitory tendency.

The frame of reference was especially applicable to the results concerning QS 1 both for the inter-group differences in the sum scores for defensive aggression (Figure 10) and for those in the magnitude of aggression toward boys of the same size (Figure 12). In both cases the magnitude of counter-aggression in the responses of the stable introverts was greater, and in those of the controlled extraverts smaller than expected. The direct questions of the first series were concerned with a person's behaviour when somebody attacks. If the answer revealed that there occurred counter-aggression, the additional question was made casually, »Does it often happen that way?« The answers of the stable introverts were unexceptionally negative. They implied that for these subjects the stimulus situations did not have such subjective reality and they did not activate such aggression inhibitory tendencies as for those subjects whose aggressive habits were stronger and the number of experienced conflicts greater.

An increase in external control reduced, on the average, the magnitude of aggressive responses. The reduction can be interpreted as a consequence of an increase in either T_f or M_{Extr} supporting the inhibitory tendency. The strengthening of T_f is connected with aggression inhibitory habits which have probably been different for different attackers in each group. The strengthening of M_{Extr} supporting the aggression inhibitory tendency is a possible consequence of the fact that the relationship between attacker and victim has become complicated and implies dependences concerning a greater number of motive areas.

As the distribution of overt aggressive responses to the different targets was not examined together with the rating of aggressive behaviour, the interpretation remained open concerning when the exceptions of the monotonic increase in aggressive responses with strengthened external control are directly interpretable in terms of the strength of the aggressive and aggression inhibitory habits, and when it is necessary to employ some other explanatory variable. The assumption can, however, be made that, due to the weakness of the aggressive habits of the stable introverts, a relatively great magnitude of aggression was displayed verbally by them toward girls and smaller boys, the probability of success being then high and the aggression inhibitory tendencies weak.

The clearest discriminations between the targets were made in the answers of the controlled extraverts, whose aggressive responses were directed mainly toward boys of the same size. The result can be given the following alternative interpretations: either the habits of overt aggression of the controlled extraverts are generally limited mainly to boys of the same size, (also in overt behaviour), or the result indicates that aggression impulses activated by a stimulus are, at the symbolic level, under strong control which is determined by M_{Extr} (e.g. a tendency to behave in a socially acceptable manner).

A *methodical finding* was that the dichotomic separation of the aggressive and nonaggressive groups on the basis of the sum scores for the aggressive responses given to question series 1—3 was the more valid the more uncomplicated the stimulus material was. The groups were separated most clearly by the questions about habits of offensive aggression (QS 3). The direct and uncomplicated questions about the habits of defensive aggression (QS 1) also separated the groups as expected. The stimulus material was most complex in QS 2, in which the frustrating situations were described as brief stories: the inter-group differences in the magnitude of aggressive responses were relatively small, and the test did not separate the aggressive and nonaggressive groups from each other significantly.

The differences in the results obtained by the different question series were interpretable by the employment of the above mentioned formula of R_{Aggr} . A more detailed description of the context had strengthened an individual's tendency to take the other party into account and to behave in a socially acceptable manner, i.e., it had strengthened the extrinsic motivation supporting the aggression inhibitory tendency, which was reflected in the relatively small magnitude of aggressive responses from the overtly aggressive groups. Allison & Hunt (1959) have made the corresponding observation that »when responding to frustrating situations in which the intention of the frustrating source was not specified, Ss high on the Edward's Social Desirability Scale express significantly less aggression than Ss low on the SDS». But when an event was explained more accurately, i.e., the motives of the frustrator were presented, »the effect of the SD factor was no longer present».

4. 5. Differences between the extreme groups in their nonaggressive responses to symbolic aggression stimuli

The chapter deals with the subjects' verbal responses to QS 1 and QS 2 on the basis of both the sum scores for the nonaggressive responses and each scored nonaggression category (pp. 144—145), and with their choices of the pairs of alternatives given to QS 2 on the second presentation (SLEI test, p. 143).

Hypothesis B. 4 was tested by comparing the group means for both question series in each nonaggression category. Hypothesis B. 5 was tested on the basis of QS 1. The dependence of nonaggressive responses on the attackers was studied

by a two-factor design of analysis of variance (Winer, 1962; 302), in addition to which a three-factor analysis of variance was performed for each nonaggression variable by using the same special case of $6 \times 5 \times 6$ factorial experiment as in the analysis of the aggressive responses (p. 155).¹

4. 5. 1. *Differences between the groups in the types of nonaggressive responses*

It was predicted in Hypothesis B. 4 that the number of nonaggressive forms of treatment of thwarting situations is smallest in the responses of the aggressive, and that there are qualitative differences between the nonaggressive groups: the treatment assumed to be most typical of the controlled extraverts was conciliatory response, of the stable introverts indifference or appraisal of the situation, and of the anxious description of negative affects without an aggressive response, or escape.

The group means of the scores for each nonaggression category are presented graphically in Figure 13.

The group means indicated the following.

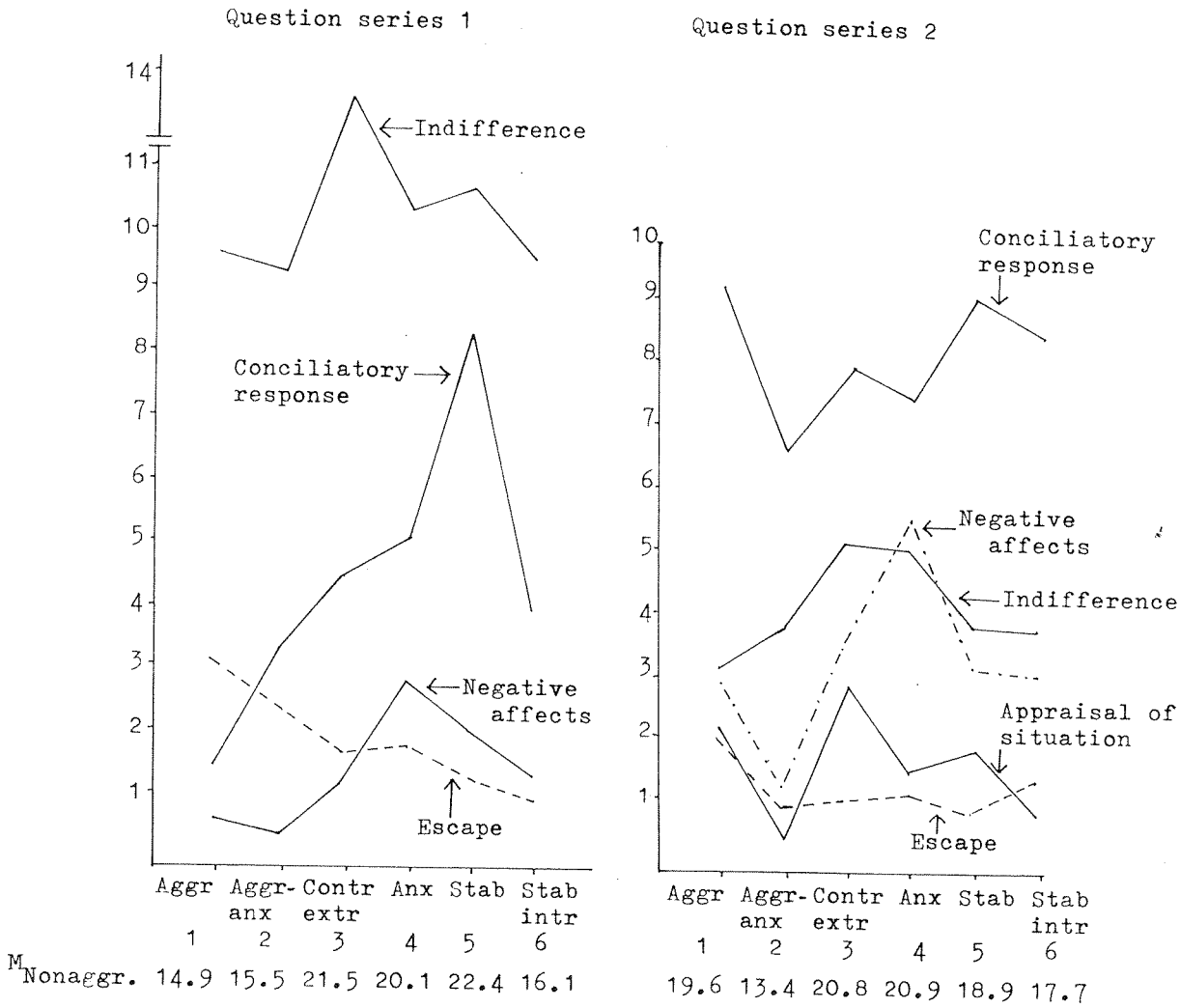
(1) There were significant differences between the nonaggressive and aggressive groups in the sum scores for nonaggressive responses to QS 1, as expected, with the exception of the stable introverts who had answered the questions with more counter-aggression than expected. The main effect of the groups was significant ($p < .05$).

The nonaggressive responses of the aggressive-anxious to QS 2 were significantly more infrequent than those of the nonaggressive groups (3—5), which supported the hypothesis. The aggressive did not, however, differ from the nonaggressive groups. On the whole the differences between the groups remained small, and the main effect of the groups was not significant.

(2) There were differences between the groups in the types of nonaggressive responses, but only for description of negative affects in the hypothesized way. The main effects of the groups were not significant with the exception of the category of conciliatory response for QS 1. There were, however, significant inter-group differences or parallel results for QS 1 and 2, an inspection of which revealed the following *d i r e c t i v e* findings.

The greatest number of *descriptions of negative affects* without aggressive responses, aroused by the stimulus situations of both question series, was found

¹ The tables summarizing the results are obtainable mimeographed.



The significances of the main effects of the groups (F-ratio) and the differences between the means of the groups (t-test):

- QS 1; $M_{Nonaggr.}$ F ($p < .05$); 3/1, 2, 6 ja 5/1, 2, 6 $p < .01-.05$; 4/1 $p < .05$
 Indifference: F (n.s.); 3/1-2 $p < .05$; 3/4, 6 $p < .1$
 Conciliatory response: F ($p < .01$); 5/1 $p < .001$, 5/2 $p < .02$, 5/3, 6 $p < .05$, 5/4 $p < .1$, 3/1 $p < .05$, 4/1 $p < .01$, 6/1 $p < .1$
 Description of negative affects: F ($p < .1$); 4-5/1 $p < .1$, 4-5/2 $p < .05$
 Escape: F (n.s.); 1/5-6 $p < .05$, 2/6 $p < .1$
- QS 2; $M_{Nonaggr.}$ F (n.s.); 1, 4/2 $p < .05$, 3/2 $p < .01$, 5/2 $p < .1$
 Indifference: F (n.s.); 3/1 $p < .05$
 Description of negative affects: F (n.s.); 4/2 $p < .05$, 3/2 $p < .1$, 5/2 $p < .01$
 Escape: F (n.s.); 1/2 $p < .1$, 1/3 $p < .1$, 1/5 $p < .05$

Figure 13. The means of the scores for the individual non-aggression categories, the extreme groups.

for the *anxious*. The other type of treatment assumed to be characteristic of the *anxious* was *escape* from the situation. For both question series the group most inclined to it was, however, the *aggressive*. Escape could be considered as

representing the kind of treatment contrary to aggression whose habit strength proved dependent on the strength of aggressive habits. The amount of escape was dependent on the strength of external control, as shown in greater detail in Chapter 4.5.2.

The assumption was made that the *controlled extraverts* would respond particularly with conciliation. Compared with the other groups, however, the treatment more typical of them in both question series was *indifference*. Strong control of aggression impulses, interpreted earlier as characterizing the verbal responses of the controlled extraverts, had the result that the thwart was denied or considered less important, as was assumed typical of the stable introverts. *Appraisal of the situation* (QS 2), which was also assumed typical of the stable introverts, was also slightly more typical of the controlled extraverts.

None of the scored nonaggression categories was conspicuous in the responses of the *stable introverts*. Like the other nonaggressive groups, they differed from the aggressive significantly only in the category of conciliatory responding.

The considerable amount of *conciliatory response* (QS 1) separated the *stable* from the other nonaggressive groups. In QS 2 the result was parallel. Like that of the controlled extraverts, the overt behaviour of the stable was characterized by controlled expression of impulses, so the assumption on conciliatory response was partly supported.

The difference between the two question series in their stimulus material was a possible reason for the average differences in the types of nonaggressive responses to them. When the stimulus situations had been described as attacks of another person, all the groups had responded most frequently with indifference (QS 1). More complex frustrating situations (QS 2) had activated conciliatory response.

The further prediction was made in **Hypothesis B.4** that when asked to choose one of the alternatives constructed according to Hypothesis A and B.4 as a response to each stimulus situation of QS 2 (the SLEI test), the subjects prefer the treatment which most closely corresponds to their overt behaviour.

The group means of the scores for each pair of alternatives described p. 147 are presented in Table 20.

It was expected that the first pair of alternatives (*aggression vs. controlled inhibition*) would separate both of the aggressive groups from both of the stable groups. The group means showed that the mentioned pair of alternatives separated the actual stable group from the groups characterized by weak control of behaviour. The number of aggressive choices was greater than expected in the responses of the stable introverts in QS 2 in the same way as in QS 1.

The second pair of alternatives (*anxiety vs. controlled expression*) was assumed to separate both of the anxious groups from the stable and the controlled extraverts. The hypothesis was supported. In ad-

Table 20. Means of the scores for the SLEI test, extreme groups

Pair of alternatives	Aggressive 1	Aggressive- anxious 2	Anxious 3	Controlled extraverts 4	Stable 5	Stable introverts 6	F p<
1. LE—SI, Aggression (vs. controlled in- hibition)	9.2	10.7	9.5	6.9	4.0	7.3	.1
2. LI—SE, Anxiety (vs. controlled expression)	8.7	9.3	9.5	7.0	5.4	6.9	.01
3. LE—LI, Aggression (vs. anxiety)	12.5	12.0	13.2	10.9	8.8	11.1	n.s.
4. SE—SI, Controlled ex- pression (vs. con- trolled inhibition)	13.9	15.0	13.4	12.4	12.0	13.1	n.s.
1+2, Weak (vs. strong) control of behaviour	17.9	20.0	19.0	13.2	8.4	13.2	.01
3+4, Great (vs. small) number of overt responses	26.4	27.0	26.6	23.3	20.8	24.2	n.s.

The significance of the inter-group differences:

- 1: 1/5 $p < .02$, 2/5 $p < .01$, 3/5 $p < .01$, 6/5 $p < .1$
 2: 1/5 $p < .02$, 2/4 $p < .1$, 2/5 $p < .002$, 2/6 $p < .02$, 3/4 $p < .1$, 3/5 $p < .002$,
 3/6 $p < .02$
 3: 1/5 $p < .02$, 2/5 $p < .1$, 3/5 $p < .02$
 4: 1/5 $p < .05$, 2/4 $p < .1$, 2/5 $p < .02$, 3/5 $p < .1$
 1+2: 1/5 $p < .01$, 2/4 $p < .1$, 2/5 $p < .001$, 2/6 $p < .05$, 3/4 $p < .1$, 3/5 $p < .001$,
 3/6 $p < .05$, 4/5 $p < .1$, 6/5 $p < .01$
 3+4: 1/5 $p < .01$, 2/5 $p < .05$, 3/5 $p < .01$

dition, the pair of alternatives separated the stable introverts from both of the anxious groups.

The third and fourth pair of alternatives were expected to separate the groups in the dimension '*number of overt responses*'. The hypothesis was not, however, supported, as both of the pairs of alternatives only separated the stable from the groups representing weak control of behaviour; contrary to expectations, the stable preferred introvert responses most consistently. The same was revealed by the combined variable 3 + 4.

In the dimension '*control of behaviour*' (1 + 2) the mean for the aggressive-anxious indicated weakest control of behaviour, and that for the stable strongest, which supported the hypothesis. The aggressive-anxious and the anxious differed significantly from all the groups

representing strong control of behaviour, the aggressive only from the stable.

Although the verbal responses to QS 2 did not separate the aggressive groups significantly from the nonaggressive ones, and although the hypothesis was not clearly supported for the nonaggressive responses, the finding could be made concerning QS 2 that with the employment of the alternative answers there appeared significant differences between the groups. The result was interpretable in the following way.

The interpretation was made earlier (p. 167) that a more detailed description of the context strengthen M_{Extr} supporting the aggression inhibitory tendency. The great number of the nonaggressive responses of the aggressive to QS 2 (Figure 13) accorded with the interpretation. The number of the nonaggressive responses of the aggressive-anxious was, however, very small. With both the aggressive and nonaggressive responses to QS 1 and QS 2 taken into account, the interpretation was also applicable to the responses of the aggressive-anxious; M_{Extr} only manifested itself in different ways for the aggressive and the aggressive-anxious.

- From QS 1 to QS 2 there was a qualitative change in the responses of the aggressive in the direction of stronger control of impulses (socially acceptable activity).
- From QS 1 to QS 2 there was a reduction in the intensity of aggression and, proportionally, a slight increase in the number of indirectly aggressive responses in the responses of the aggressive-anxious.

The pairs of alternatives did not include the pair LE-SE (aggression vs. controlled expression of impulses) which could have revealed the kind of strong extrinsic motivation of the aggressive that the verbal responses indicated. On the other hand, in the pair of alternatives LE-SI the mates of controlled inhibition of impulses described treatment so contrary to the aggressive that the aggressive subjects did not prefer them to the aggressive alternatives. In the pair of alternatives LE-LI (aggression vs. anxiety) anxiety represented weak control of behaviour and was thus more similar to aggressive treatment than controlled inhibition of impulses: the aggressive preferred the alternatives of anxiety more than expected, which also supported the interpretation of extrinsic motivation.

In the construction of the alternative answers the intensity and direction of aggression were not taken into account systematically, for which reason the possible preferences of the aggressive-anxious to indirect and more attenuated aggression were not revealed.

4. 5. 2. Effects of external control on nonaggressive responses

It was predicted in Hypothesis B. 5 that when external control is strengthened, there is an increase in the number of nonaggressive responses of all the extreme groups so that the increase is greatest in the most aggressive groups. The hypothesis was tested on the basis of the responses given to QS 1 (Figure 14). Naturally, the amount of non-aggressive responses was dependent on the amount of aggressive responses, whose relations to the attackers was dealt with in Chapter 4. 4. 4. The dependence was not, however, quite symmetrical, since in the scoring of the aggressive responses the intensity of aggression was also taken into account.

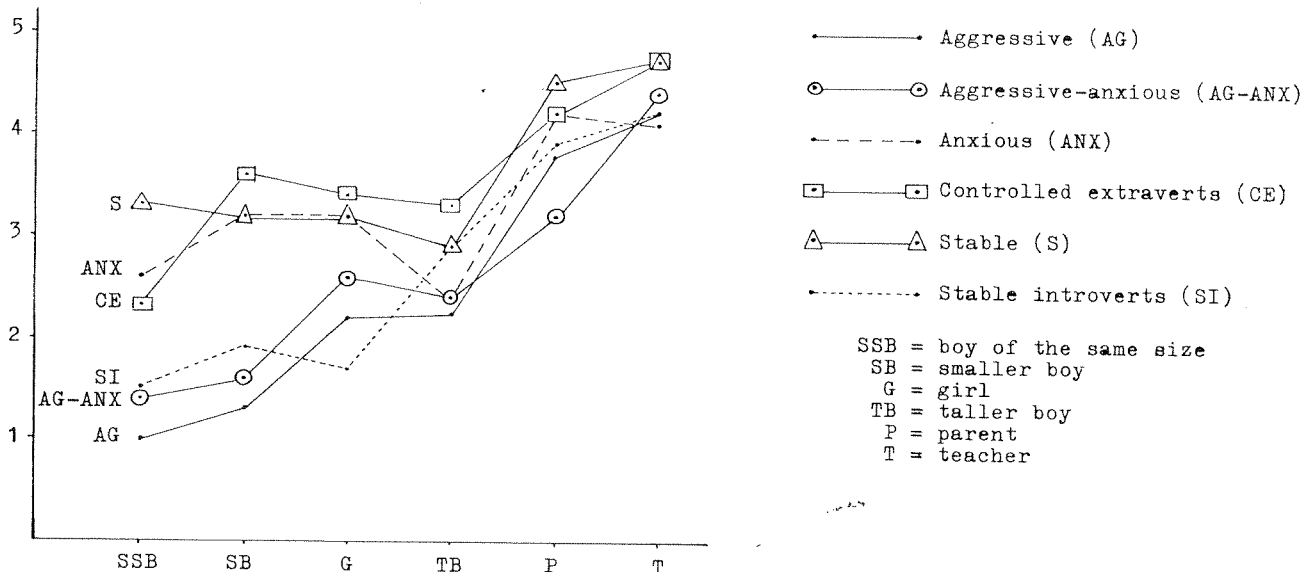


Figure 14. The distribution of nonaggressive responses among the targets, QS 1.

(1) The hypothesis that there is an increase in the amount of non-aggressive responses due to strengthened external control was supported by the means of the sum scores for the nonaggressive responses. The main effect of the attackers was significant ($p < .01$).

The analyses of variance for *each nonaggression category* revealed that the main effects of the attackers were significant ($p < .01$). All of the nonaggressive responses did not, however, increase monotonically with strengthened external control. They were dependent on the attackers as shown in Table 21.

Table 21. Dependences of the different forms of nonaggressive treatment on the attackers, means for the subjects

Variable	SSB ¹	SB	TB	G	P	T
Description of negative affects	0.20	0.03	0.10	0.07	0.48	0.53
Escape	0.23	0.15	0.85	0.22	0.25	0.22
Indifference	0.75	1.63	1.35	1.93	1.98	3.00
Conciliatory response	0.83	0.65	0.48	0.55	1.25	0.75

¹ See Table 18.

The greatest exceptions to the expected distribution were found for escape, which was frequent especially when the attacker was a taller boy, and for conciliatory response, which was most frequent when the attacker was a parent or a boy of the same size.

(2) The hypothesis that there is a parallel but quantitatively different increase in the amount of nonaggressive responses of the different groups could be considered as having been supported (Figure 14). The group \times attacker (AB) interaction was significant only at the $p < .1$ level.

The amount of nonaggressive responses concerning boys of the same size separated the groups much in the same way as the habit strength of overt aggression, as found also for the magnitude of aggressive responses concerning boys of the same size, with the exception of the stable introverts. (The dotted line describing the means for the stable introverts in Figure 14 was expected to be located at the top in a slightly ascending direction. The interpretation of the result was directly derivable from that concerned with aggressive responses, pp. 165—166).

(3) Variation in the amount of each nonaggressive treatment, due to external control, was assumed to be slightest in the group of which the treatment in question was most typical. Contrary to expectations, the differences between the groups in their nonaggressive responses (Figure 13), with the exception of conciliatory response, were not so great that a particular treatment could be considered significantly typical of a particular group. Since the group \times attacker (AC) interactions, apart from that for description of negative affects, were, however, significant ($p < .01$), a preliminary inspection was performed to test the hypothesis.

The means for QS 1 and QS 2 indicated that conciliatory response was most typical of the stable, indifference was most typical of the controlled extraverts, and escape was most typical of the aggressive.

The distributions of the nonaggressive responses of the above groups among the targets, as well as the corresponding means for the other groups as two combinations, one for weak and the other for strong control of behaviour, are presented in Figure 15.

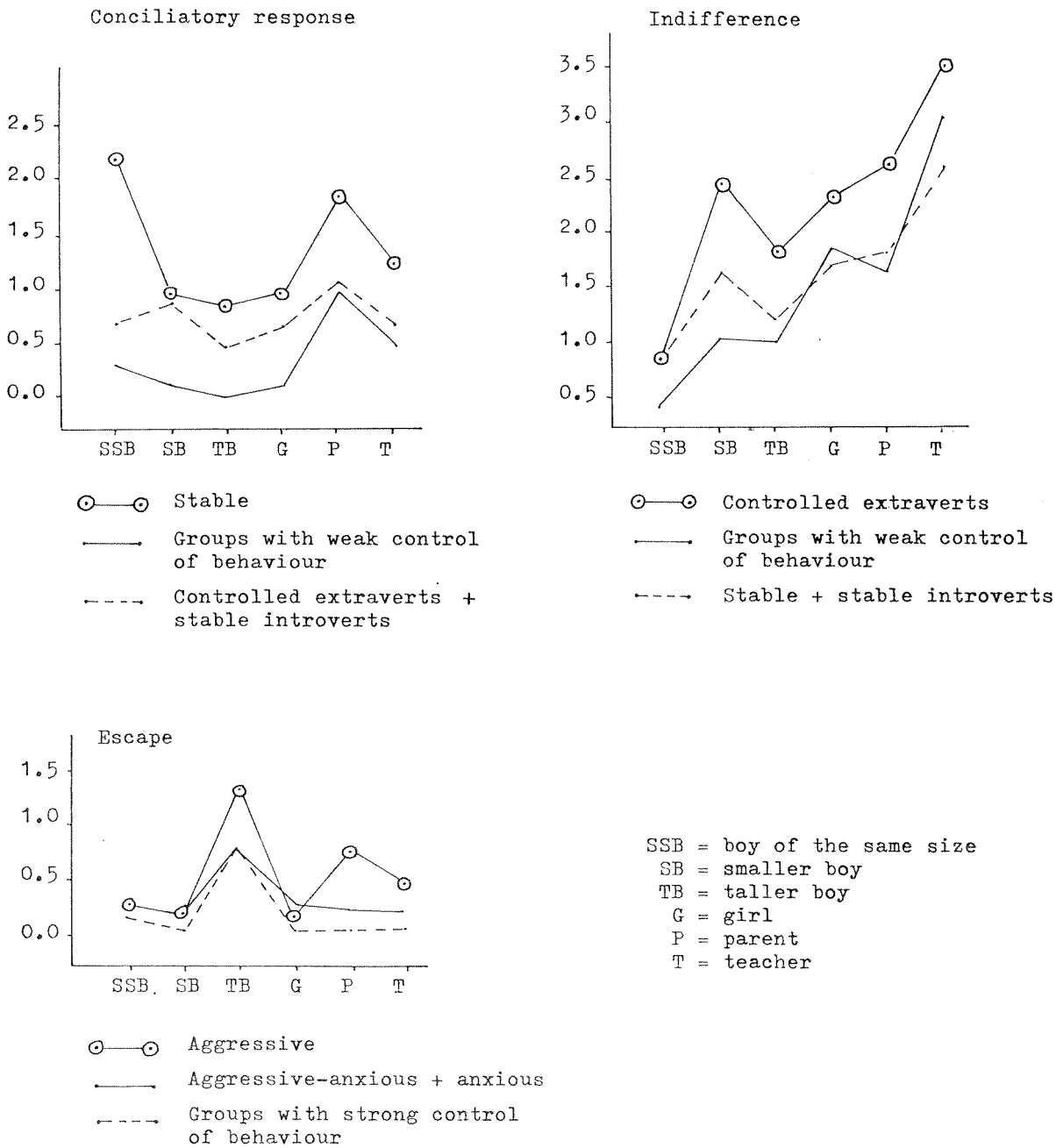


Figure 15. The distribution of nonaggressive responses among the targets, different categories of nonaggression.

As for the conciliatory response of the stable, the hypothesis was not supported: this type of treatment was most frequent when the target was a parent or a boy of the same size. Similarly, in the indifferent response of the controlled extraverts there appeared variation that was greater than expected: this type of treatment hardly occurred when the instigator was a boy of the same size. The escape responses of the aggressive boys were connected with conflicts with taller boys and authority figures, and negative affects were also less typical of the anxious when the attacker was a smaller boy or a girl.

(4) Variation in the type of aggression stimuli (types of attack) had many significant effects on nonaggressive responses. The findings were logically interpretable and shed light on the *content validity* of QS 1. The main effects of the types of attack were significant on all the types of nonaggressive treatment. The most frequent cause of descriptions of negative affects and indifference was indirect verbal aggression (speaking ill of somebody behind his back). Escape was more frequently due to direct than to indirect aggression, a consequence of the experienced strength of thwart, while for conciliatory responding the case was the opposite.

The group x type of attack (AB) interaction was significant only for indifference. All of the groups were most frequently indifferent toward indirect verbal attack but differed from each other for direct physical and mimic aggression. Indifference toward physical attack correlated positively with a great number of responses in overt behaviour independently of the strength of the control of behaviour (the more active, the more indifferent). Indifference toward mimic attack was typical of the introvert groups.

The attacker x type of attack (BC) interactions were significant ($p < .01$) except for conciliatory response.

The cause of descriptions of negative affects was most frequently the verbal and mimic aggression of authority figures, and least frequently the direct aggression of smaller boys and girls.

The number of escape responses was directly proportional to the directness of the attack of a taller boy. Similarly, the mimic aggression of authority figures caused a desire to escape, especially in the aggressive.

Indifference occurred only toward authority figures, if the attack was indirectly physical, and also toward girls and smaller boys, if the type of attack was direct physical. The distribution of indifference among the targets was more even in the other types of attack.