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Young Children In An Insecure Situation

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There is no need to remark the importance of the concept of security in contemporary psychology. Writings in the fields of child, social, personality, and abnormal psychology have invoked the concept of security almost as often as that of adjustment, conceiving security as a necessary condition for "good adjustment" and correlating insecurity with a state of high tension that gives rise to some form of tension-reducing activity. Here the concept of security is the core of a theory of action: security becomes a motive whether one chooses to regard the organism as striving to attain security or struggling to allay the tensions attached to insecurity, environmental or intrapersonal. In addition, the concept seems integral to theories of affective states: happiness is related to security, unhappiness to insecurity.

Plainly the problem of the origin of individual differences in security can be investigated constructively only after child psychologists have agreed on the behavioral evidences of security and insecurity in young children. Ideally such data would be gathered under experimental conditions. In experimenting with young children there is, of course, the disadvantage of not being able to gather introspection. But the fact that a child will often show you how he feels—sometimes quite obtrusively—though he cannot tell you, seems all to the good, especially when his behavior can be causally related to the conditions which evoke it with a discreet amount of inference.

It is the premise of this paper that security and insecurity are denoted by the child's relationship to the situation. In any situation the specific evidence of security is assumed to be the appearance of positively adaptive patterns of behavior; conversely, negatively adaptive or emotional forms of behavior will indicate insecurity. Adaptive behavior is defined as behavior directed with reference to goal-regions in the situation, while emotional behavior is defined as activity that is not thus goal-directed and presumably concurs with a state of excess tension.

METHOD

This paper is a report of a set of experiments on children in which insecurity is sought as an experimental "given." Concrete patterns of insecure behavior displayed by children in "framed" situations are analyzed and an attempt is made to reconstruct the immediate determinants of the behavior.

The situation selected to produce insecurity was a strange room. Strangeness is listed frequently in classifications of stimuli which evoke fear in early childhood and is cited specifically as one of the conditions of insecurity by Blatz, Horowitz, L. B. Murphy, and others. If strangeness of the environment may be regarded as a determinant of insecurity and familiarity, of security, the child's reactions to the strange room will, with repeated replacements in that room, reveal a transition from insecure to secure patterns of behavior.[1]

1. Although fear of the strange has been recognized widely, only one study reports a detailed description of behavioral patterns in which the fear is manifested. This is an unpublished study by F. Wiehe who observed the reactions of children to a strange person. Wiehe's paper, *Die Grenzen des Ichs*, was made available to the writer by Professor Kurt Lewin. For a summary of Wiehe's findings, see Lewin, K., *A dynamic theory of personality.* New York: McGraw-Hill, *1935: Pp. 261-264.*

A strange situation has additional merit as a *locus experimenti* in that its psychological character for children is readily alterable by the introduction or removal of a familiar adult—preferably the mother. Experts agree in finding the security of the young child frequently dependent upon the mother's presence. This suggests that by introducing the mother into the strange room with the child an otherwise insecure situation can be made initially secure, or that it could be altered later in the direction of greater security if, after a series of solitary sessions in the strange situation, the mother is placed in the room along with the child. Similarly removal of the mother would presumably alter the situation again in the direction of less security. Such variations are employed in the present study in order to check the first valuations of secure and insecure patterns of behavior as well as the above mentioned expectations.

The procedure was an observational assessment of the behaviors of the four experimental groups thus suggested:

1. Children entering the strange situation alone (Alone group);
2. Children accompanied by their mothers when placed in the strange room (Mother group);
3. Some children from the alone group were accompanied by their mothers on later trials (Alone-Mother group);
4. Some children from the mother accompanied group were on later trials left alone in the experimental room (Mother-Alone group).

The subjects were 24 children from the nursery of the Massachusetts State Reformatory for Women. Resident in the institution in some cases since birth, they had less experience in strange environments than generally falls the lot of children in families. Moreover, possible sources of frustration in the institutional environment were numerous. Not only were physical space and play equipment limited, but also and more noteworthy was the limited and intermittent character of the children's contacts with their mothers. In exactly half of the cases, the mothers of the subjects worked in the nursery as "helpers" of the trained staff. The many demands upon these helpers made it impossible for any mother to undertake the exclusive care of her own child. Mothers of the remaining children who were subjects worked in distant parts of the institution and were permitted to see their children only during the daily visiting period. In both cases, the result tended to be the same in this respect: in their relations with their own children, the mothers were characteristically over-attentive and over-emotional, and their intermittent absences were likely sources of frustration. If a history of frustration predisposes the individual to feelings of insecurity, as psychoanalysts have urged, it is probable that the reactions of the institutional subjects to the strange room were more intense than would have been the reactions of a non-institutional group of the same ages. The study, however, undertakes to investigate the ranges of secure and insecure behavior rather than to establish age-norms for the process of adaptation to a strange room.

The subjects ranged in age from 11.2 months to 30.1 months, a range within which marked differences in developmental level, particularly in locomotor skill, are to be expected. Actually, all of the children walked, but the youngest were able to take only a few steps alone, while the older ones had at least a year's experience in walking. Performances of the children on the Cattell Baby Test, which refers the individual's behavioral development to Gesell's norms, yielded IQ's ranging from 70 to 120, with medians at 94 and 100 in the two main experimental groups. Specific behavioral reactions in any situation would vary within a group involving such differences in development. Yet the range is not great enough to lead one to expect developmentally determined individual differences in the fear value of a strange situation. Jersild and Holmes[2] found no perceptible decrease in the frequency of fear-responses to strange situations before the third year. All 24 subjects were within the age range for which strange situations usually provide an effective fear stimulus.

The Alone Group

Sixteen children constituted the Alone or A-group. They ranged in age from 11.2 to 21.4 months. The median age for the group was 16.1 months, while the median IQ was 94.5. Each child in this group was conducted to and left alone in the strange room for five-minute intervals on alternate days. The room was one newly constructed in the attic of the nursery building. Furnished with new toys and pictures, it was designed to be attractive rather than repelling. The experimenter observed the child's behavior from a one-way screen and protocolled it upon an electrically timed recording device.

2. Cf. Jersild, A., & Holmes, F. *Children's fears.* New York: Bureau of Publications, Teachers College, Columbia University, 1935. Pp. 46-48.

Mother Group

The eight remaining subjects were placed in a Mother or M-group. Children in this M-group ranged in age from 13.3 to 30.1 months. Both the median age of 20.8 months and the median IQ of 100 are slightly higher than the medians for the A-group. But these differences are of little import in view of the fact that individual differences in the rate of adaptation to the strange room showed no significant relationship to age or IQ. The correlation coefficients will be cited later.

The procedure followed in the M-group paralleled that in the A-group except for the fact that a familiar adult stayed with the child during each observation period. In three cases the adult was the child's own mother. Because mothers of the remaining five children worked elsewhere in the institution and were not available, these children were accompanied by "substitute" mothers, or nursery helpers. The adult sat near the entrance to the strange room an was instructed to remain as impassive as possible.

Subgroups

In the latter half of the series of 11 observation periods, some of the children from each of the two primary groups were placed in subgroups which were intended to reveal the effects of the belated introduction or removal of adults upon the children's behavior in the situation.

Six children from the A-group were accompanied by their mothers or "substitute" mothers after the fifth trial (A-M group), while five children from the M -group were left alone in the last half of the series of trials (M-A group).

Placement of children in subgroups resulted in a large reduction of the number of subjects in the two primary groups. Illness and departures from the institution depleted the number of available subjects in all groups towards the end of the study.

RESULTS

Assuming that security is denoted by positively directed adaptive behavior, the first task of analysis is the separation and specification of adaptive and emotional activities. All behavior displayed by the children in the strange room was non-residually classifiable under five categories. Three categories represented more adaptive forms of behavior, viz., play, locomotion, and talking. The remaining two categories represented more emotional forms of activity, viz., crying and autistic gestures. Play, invariably, and locomotion and talking, in general, were directed with reference to goal-regions of the situation (i.e., the toys, the gate, or the mother, if she were present). In contrast to these adaptive activities, crying and autistic gestures showed little or no goal-directedness and appeared to be determined by a condition of excess tension. The category of autistic gestures, a term used by Krout[3] to designate a range of somewhat similar behavior in adults, includes such movements and postures as thumb-sucking, fingering parts of the body, waving the arms, stamping the feet, etc.

Clear-cut differences in the relative amounts of emotional and adaptive forms of behavior marked the adaptation of the children in the A-group to the strange situation. The average duration of each type of behavior[4] on every trial was found. The intercorrelations of the averages for the five different categories of behavior in the series of 10 trials are listed below:

Intercorrelations Between Adaptive and Emotional Forms of Behavior

Crying and Autistic Gestures	+.71 (±.11)
Play and Locomotion	+.69 (±.11)
Play and Vocalization	+.86 (±.11)
Vocalization and Locomotion	+.71 (±.11)
Crying and Play	-.76 (± .09)
Crying and Locomotion	-.91 (±.13)
Crying and Vocalization	-.75 (±.09)
Autistic Gestures and Play	-.85 (±.06)
Autistic Gestures and Locomotion	-.72 (±.11)
Autistic Gestures and Vocalization	-.72 (±.10)

The correlation coefficients secured by the rank-differences method are all significantly greater than their probable errors. High positive correlations appear between each of the two emotional forms of behavior and between each of the three adaptive forms, while the cross correlations between emotional and adaptive categories are highly negative. In view of the fact that only the categories of crying and talking represent mutually exclusive forms of behavior, the negative correlations between emotional and adaptive types of behavior cannot be regarded as a statistical artifact.

3. Cf. Krout, M. H. Autistic gestures: an experimental study in symbolic movement.—*Psychol. Monogr., 1935, No.* 208.

4. In the case of locomotion, the distance which the child moved was measured approximately and the average distance per minute-interval for the trial was found.

The 16 children who were left alone in the strange room spent most of the first four trials, or five-minute periods, in crying and autistic behavior. In the following trials, crying disappeared almost entirely and autistic gestures diminished greatly, while playing, locomotion, and occasional talking became the dominant forms of behavior. The adaptation process, however, was not a linear function of time in the situation. There was a general increase in the amount of emotional behavior on the second and third trials.[5] There was also a slight increase in autistic gestures, the less extreme type of emotional behavior, in the final trials, which may have been a function of a general satiation apparent in the case of one of the children who remained in the situation through the eleventh trial.

Quit different proportions of emotional and adaptive activities were displayed by the eight children who were accompanied in the strange situation by their mothers or "substitute" mothers. In the M-group as a whole, adaptive forms of behavior predominated at all times. The amount of adaptive behavior on the first trial was over three times as great and the amount of emotional behavior was less than one-third as great as that which occurred in the A-group. After the fourth trial, emotional behavior practically disappeared from the M-group, and, coincidentally, the amount of play, locomotion, and talking increased. While the behavior of the A-group shifted in this direction also, the total amount of adaptive behavior was greater at all times in the group of children who were accompanied by adults.

Patterns of Behavior

It is evident from the preceding account that the children were engaging in several or more different types of emotional and adaptive activities simultaneously. The patterns may be characterized as positively directed (i.e., attempts to obtain more of the situation) or negatively directed (i.e., attempts to obtain less of the situation). Within specific approach and withdrawal patterns the proportions of emotional and adaptive activities differed. One pattern of withdrawal, for example, was characterized almost exclusively by emotional activity, while in one of the approach patterns no symptom of emotionality appeared. Six primary patterns were displayed by children in the A-group. They are presented in an order that denotes increasing adaptivity, first, of negative patterns and, then, of positive patterns.

Nonmotile withdrawal, a pattern of prolonged nonmotility together with symptoms of intense negative emotionality, was displayed by six of the youngest children. In each case the child stood, sat, or stretched out on the floor where the experimenter had left him, screamed violently, and made many autistic gestures of a self-manipulative type. Head movements in the direction of the region of escape (i.e., the gate) occurred with diminishing frequency as time passed and the situation became "hopeless." The duration of the pattern varied from a brief part of one trial to the greatest part of five trials. The six children who reacted in this manner ranged in age from 11.9 months to 17.8 months.

A pattern of *agitated movement* was displayed by two children. This was a pattern of disoriented, circling locomotions accompanied by intense crying and many autistic gestures. The locomotions were not consistently directed either toward or away from the situation. To the onlooker the behavior suggested a state of great agitation, within which no awareness of direction penetrated. The pattern lasted slightly less than one trial. The two children who exhibited it were 15 months old.

A third pattern, *attack*, appeared in just one instance. The pattern was characterized by a systematically destructive approach to the situation, by intermittent angry cries, and by occasional autistic gestures of a vigorous, out-going type. The child's mode of attack consisted in fetching toys and the smaller articles of furniture one at a time and hurling them over the gate. While there seems to be adequate evidence of aggression against the situation in this behavior, it is possible also to regard the forceful removal of the toys as substitute activities for removal of the self from the unpleasant situation. Hurling toys over the gate may represent an attempt to establish a line of contact with the inaccessible region of escape and freedom beyond

5. Cf. Shirley, M. M. Children's adjustments to a strange situation. This Journal, 1942, 37, 201-217.

Shirley reports that children from two to three years of age tended to be less well adjusted to a strange clinical situation on the second and third visits than in the first visit. She attributes the increased emotionality of the children to anticipatory dread.

A direct comparison of Shirley's findings with those of the present study is impossible because the complete list of categories in terms of which she evaluated the adjustment of the children is not reported. Additionally, the setting of the two studies differs: Shirley's subjects visited in the clinical situation at six-month intervals and the total number of adults and other children present in the "strange situation" apparently varied from visit to visit.

the gate,[6] The total pattern is evaluated as a negative one which is directed toward the attainment of less of the situation.

The fourth pattern, *encapsulation*, is characterized by the fact that the child remains within the situation but abstracts himself from immediate contact with the situation-as-a-whole by entrenching himself within one region of it. Evidence of the entrenchment was marked decrease in crying which occurred as soon as the child entered the encapsulation region. The mode of encapsulation differed in individual cases. Several children encapsulated themselves in a prone or approximately fetal position on a small rug near the center of the room; another child moved to the same rug and cradle-rocked (i.e., assumed a creeping position and pushed his trunk and hips rhythmically back and forth); still another encapsulated himself in prolonged manipulative activities with a can which he had brought with him from the nursery. The last-mentioned instance of an encapsulation built around a familiar object becomes of particular interest in the light of the behavior which preceded and followed it. The child in question had displayed a highly emotional pattern of reaction on the preceding trials and subsequently returned to that behavior. On the occasion when he was permitted to bring the familiar toy he sat in quiet preoccupation with the plaything throughout the entire trial. Apparently the presence of a familiar object made possible a partial restructuring of the situation and the appearance of a restricted type of adaptive behavior. The four children in the A-group who exhibited one or another pattern of encapsulation ranged in age from 15.1 to 19.8 months.

By far the most typical pattern was the pattern of *retreat*, or locomotion in the direction of escape and safety. In view of the fact that escape from the strange room was barred by the presence of a gate, the child's retreat was only approximate: he moved to the gate and remained in the gate region. Half of the children in the A-group displayed the pattern immediately and most of the others exhibited it at some time during the series of trials. Usually the pattern was repeated over many trials, and its specific characteristics changed with time. The early retreats were marked by intense but less continuous crying than were the patterns of nonmotile withdrawal and agitated movement, by frequent autistic gestures, and by nonmotility in the gate region. When the retreat pattern reoccurred on later trials, emotional behavior decreased and play in the gate-region appeared. In the last trials, the pattern was interrupted by intermittent approaches to the toys.

The sixth pattern is the positively adaptive pattern of *approach*, or locomotion toward the toys. Typically the pattern first appeared on the fourth or fifth trial and thereafter alternated with retreat in gradually lengthening intervals of approach. The first approaches to the toys were characterized generally by symptoms of conflict. Locomotion to the toys was followed by passive observation or by hesitant gestures of reaching and withdrawing or by self-manipulative gestures. In later approaches, active play with the toys appeared, locomotion from one group of toys to another increased, talking and singing occurred, and autistic gestures disappeared except for occasional boisterous movements.

Before any attempt was made to evaluate differences in security denoted in these patterns, four of the patterns were subdivided in order to take account of marked variations which appeared in individual cases or in time. A pattern of nonmotile withdrawal which occasionally occurred without crying was distinguished from the pattern of nonmotile withdrawal with intense crying; the patterns of retreat and crying and retreat and play were differentiated; encapsulation of a regressive type was distinguished from encapsulation in play and patterns of approach with symptoms of conflict were separated from patterns of free approach. The resulting to patterns accurately represent the observed changes in the adjustment of the 16 subjects to the strange situation.

A Scale of Security

The greater the number of related phenomena upon which an evaluation is based, the more reliable should be the evaluation in defining the individual case and the more generally applicable it should be to other similar cases. In evaluating the security of young children, therefore, total patterns provide a better starting point than any isolated item of behavior. A measurement of security, for example, in terms of one type of adaptive behavior such as the amount of directed locomotion would

6. Cf. Barker, R., Dembo, T., & Lewin, K. *Frustration and regression, an experiment with young children.* Iowa City: University of Iowa Press, 1941. Similar behavior was observed in the regression experiments. Children who were separated by a wire screen from a group of very attractive toys occasionally hurled their own less attractive toys at the screen. The authors regard the behavior not only as an aggression against the barrier but also as an attempt to establish a communication with the unobtainable toys.

fail to differentiate between the security of children who were attacking the situation and those who were exhibiting a free approach to it. An evaluation based upon crying, a single type of emotional behavior, would fail to differentiate the security of children who were displaying patterns of retreat and play, encapsulation in play, and free approach—all patterns within which no crying appeared. That these patterns do represent different degrees of security remains to be established, although the expectation follows from the definition of security stated earlier.

The degrees of security symptomized in individual patterns were rated on a hypothetical security continuum ranging from -5 insecurity to +5 security. The ratings of the writer were checked against the ratings of four child psychologists who were given descriptions of the 10 patterns and were requested to rate the degree of security indicated in each pattern in terms of their own criteria of security.

In view of the limited data in the hands of the raters, the amount of agreement is surprisingly great. The experts unanimously rated the pattern of nonmotile withdrawal with crying as an index of maximal insecurity. With one exception, they rated free approach as a pattern of maximal security. Disagreement is greatest in the ratings assigned to patterns which involve little overt activity of any kind, namely, regressive encapsulation and nonmotile withdrawal without crying, and to the ambiguous patterns of retreat and play, encapsulation in play, and approach with conflict. The latter three patterns are ambiguous in that the direction of each pattern stands in contrast to the type of behavior which appeared in it. The positively directed pattern (approach with conflict) involved little adaptive behavior and a large amount of emotional activity, while the two negative patterns were characterized by little or no emotional behavior and a large amount of adaptive behavior. None of the experts was consistent in evaluating all three patterns either primarily in terms of the direction of the pattern or primarily in terms of the quality of the actions. The ratings neither confirm nor invalidate, therefore, the assumption that positively directed patterns indicate always a greater security than negatively directed patterns.

The averages of the five sets of ratings are used to define numerical values of the 10 patterns of behavior on an *a priori* security scale.

TABLE 1
RATINGS OF PATTERNS ON A –5 TO +5 SECURITY CONTINUUM

Patterns	Ratings of 4 Experts				Av.	AD	Ratings of Experimenter
	A	B	C	D			
1. Nonmotile Withdrawal (cry)	-5	-5	-5	-5	-5	0	-5
2. Ag. Movement	-4	-4.5	-4	-3.5	-4	0.25	-4.5
3. Retreat (cry)	-2.5	-4	-3	-3.5	-3.3	0.50	-4
4. Attack	-3	-2.5	-2	-2	-2.4	0.37	-3.5
5. Encapsulation (regress)	-1	-3.5	-1	-2.5	-2.5	1.5	-3
6. Nonmotile Withdrawal (no cry)	-0.5	-2	-0.5	-1.8	-1.8	1.2	-2.5
7. Retreat (play)	+4	-0.5	+3	+1	+1	2.5	-2
8. Encapsulation (play)	+3	-3	+1	-0.5	-0.5	2.5	-1.5
9. Approach (conflict)	+1	-1	+2	-0.3	-0.3	1.1	+2
10. Approach (free)	+5	+5	+5	+4.7	+4.7	0.4	+5

SCALE VALUES OF THE PATTERNS (I.E., AVERAGES FOR FIVE SETS OF RATINGS)

1.	Nonmotile withdrawal	-5
2.	Agitated movement	-4.1
3.	Retreat (crying)	-3.4
4.	Attack	-2.6
5.	Encapsulation (regressive)	-2.6
6.	Nonmotile withdrawal (no crying)	-1.9
7.	Encapsulation (play)	-0.7
8.	Retreat (play)	+0.4
9.	Approach (conflict)	+0.7
10.	Approach (free)	+4.8
11.		

The main difference between the scale-values of the patterns and the initial ratings of the writer is the positive value assigned to the pattern of retreat and play in the scale. This pattern of locomotion to the gate, followed by play, may be reinterpreted as an approach to a single preferred toy, the gate, and so a positive pattern.

The scale remains a continuum which differentiates degrees of security in terms of the direction of the child's reactions to the situation and the proportion of emotional and adaptive behavior expressed in them.

Security as a Function of the Familiarity of the Situation

Application of the scale to the behavior of children in the A-group reveals the relationship of security to the familiarity of the situation. The security of any child on a given trial was found by multiplying the scale-value of each pattern which he displayed by the percentage of time during which he exhibited it. The average scores of the A-group on successive trials are represented by the unbroken line in Figure 1. (The patterns of behavior thus

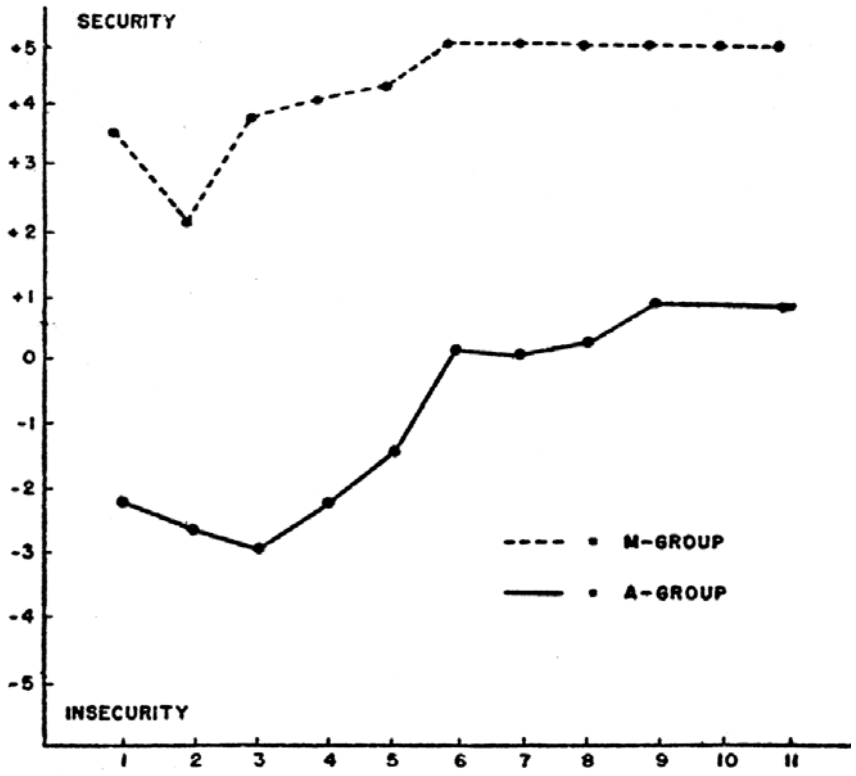


FIGURE 1 AVERAGE SECURITY SCORES OF CHILDREN WHO WERE ALONE IN THE STRANGE ROOM (A-GROUP) AND OF CHILDREN WHO WERE ACCOMPANIED BY THEIR MOTHERS OR "SUBSTITUTE" MOTHERS (M-GROUP)

The averages are based on the scale values of the patterns of behavior displayed by children in the two groups.

evaluated are summarized in Table 2 which gives the average percentage of time during which particular patterns were displayed by the group on each trial.) The graph indicates that the A-group as a whole was initially insecure in the situation and that the average degree of insecurity decreased as the situation became familiar. Degree of security was not, however, a linear function of time in the situation. Observe that the average degree of insecurity in the group increased on the second and third trials when extreme negative patterns occurred over longer periods of time. It is impossible to determine from the data whether the children returned with remembrances and expectations which increased the unpleasantness of the situation or whether the intensified negative reactions more nearly parallel sensitization phenomena.[7] On the tenth trial one of the few children who remained in the group exhibited an increased amount of emotional behavior that appeared to coincide with the onset of satiation (see the encircled point in the graph, Figure 1). None of the children in the A-group evidenced great security even in the final trials. They continued to exhibit over long periods of time a pattern of retreat and play in the circumscribed region of the gate, a pattern evaluated as

TABLE 2
AVERAGE PERCENTAGE OF TIME SPENT IN PARTICULAR PATTERNS OF BEHAVIOR IN THE ALONE GROUP

Trial	Latency*	Nonmotile Withdr. (cry)	Ag. Movement	Retreat (cry)	Attack	Encap. (regress)	Nonmotile Withdr.(no cry)	Encap. (play)	Retreat (play)	Approach (conflict)	Approach (free)
1	5 (9)**	12.3 (4)	8.4 (2)	47.1 (10)		4.9 (1)	5.4 (1)		1 (2)	1 (1)	13.9 (3)
2	xx (3)	15.5 (3)	1 (1)	50.7 (10)	6.2 (1)	11 (3)	2.5 (1)	1.1 (1)		2 (1)	8.3 (2)
3	0.2 (1)	13.9 (3)		56.3 (11)		14.4 (3)	4.8 (1)	1.5 (1)	3.4 (3)	3 (5)	2.5 (1)
4	1.7 (3)	22.9 (4)		49.2 (10)		6.5 (2)	1.8 (1)		1.6 (3)	0.9 (4)	15.1 (3)
5	0.6 (1)	8.5 (3)		45.1 (11)		9.4 (3)	3.3 (3)	3 (1)	6.2 (7)	6.7 (3)	17.3 (5)
6	2 (3)			38.1 (7)		1 (1)		12.1 (2)	12.7 (5)		33.8 (3)
7	0.6 (1)			45.5 (7)					13.3 (7)	10.2 (3)	30.3 (3)
8	0.8 (1)			38.2 (7)					27.2 (7)	4.6 (2)	29.1 (4)
9				44.3 (5)					6.2 (5)		49.5 (4)
10				59.2 (2)					34.2 (2)		17.4 (2)
11				35.1 (2)					28.2 (2)		36.6 (2)

*The latency category represents an initial period in which no overt response was made to the situation.

**All figures in parentheses indicate number of cases.

7. The increase in the average insecurity of the group as a whole on the second and third trials is exaggerated by the deviant behavior of three children who were engrossed in play with a few toys during all or a part of the first two trials. During this period they appeared not to notice the rest of the situation. But after their interest in the toys diminished, extreme negative patterns of reaction occurred.

indicative of low security because of the restricted area in which the child manifested play behavior.

There are large individual differences in the rate at which insecurity in the strange situation decreased. A survey of the behavior of the children on the fifth trial, before the total number of subjects in the group diminished, shows that one child was still maximally insecure, while another child was almost maximally secure. These individual differences show no significant relationship either to age or to intelligence. The rank-difference correlation coefficient between age and degree of security on the fifth trial is +.21 (±.17), and the coefficient for security scores and IQ's on the Cattell Baby Test is -.02 (±.18) for the 16 subjects. From daily observation of all the children over a period of months it appeared that the children who became secure in the situation

TABLE 3
AVERAGE PERCENTAGE OF TIME SPENT IN PARTICULAR PATTERNS OF BEHAVIOR IN THE MOTHER GROUP

Trial	Latency*	Nonmotile Withdr. (cry)	Ag. Movement	Retreat (cry)	Attack	Encap. (regress)	Nonmotile Withdr.(no cry)	Encap. (play)	Retreat (play)	Approach (conflict)	Approach (free)
1		1.8 (2)**		12.5 (2)						1.2 (1)	84.4 (7)
2				25.0 (2)						12.5 (1)	62.5 (5)
3	0.1 (1)			2.2 (1)		10.3 (1)				1.2 (1)	86.2 (7)
4	0.9 (1)			6.8 (1)						5.7 (1)	86.6 (7)
5											100 (8)
6											100 (4)
7											100 (2)
8											100 (2)
9											100 (2)
10											100 (2)
11											100 (2)

*The latency category represents an initial period in which no overt response was made to the situation.

**All figures in parentheses indicate number of cases.

most rapidly were children who were characteristically more independent in a variety of nursery-school situations. This consistency of behavior in the nursery and in the strange room indicates that traits of “independence” or of “self-reliance” may develop at a distinctly early age.

Security as a Function of the Presence of the Mother

In an attempt to make the strange situation initially secure, the eight children in the M-group were accompanied by their own mothers or a nursery helper, who sat at one end of the room during each trial. A majority of the children displayed immediately the patterns of behavior evaluated on the scale as symptomatic of security. The average security scores for the group on each trial are represented in Figure 1, while the behavioral patterns which the children exhibited are listed in Table 3. The average security of the M-group was greater on the first trial than the security of the A-group on the final trials. If the possibility of a selection of children with a "greater tendency to secure behavior in strange situations" is ruled out—and the probability of such a selection is remote in view of the fact that none of the 16 children in the A-group failed to exhibit patterns of marked insecurity in the situation—the immediate security of these eight children must be attributed to the presence of the familiar adult.

The problem is complicated, however, by the individual differences within the group. Not all of the children were immediately secure in the situation. Three children at first displayed patterns of insecurity similar to those which appeared in the A-group and the remaining five children who were secure in the situation at all time differed in their reactions to the adult. In all, three types of reactions to the adults were observed.

No Contacts with the Adult. The three children who were initially insecure in the situation were accompanied by nursery helpers, or “substitute” mothers. In each case, the child cried and retreated at once or very soon to the chair where the adult sat. The adult, instructed to remain impassive, paid no attention to the child's distress. None of the three children made any physical contact with the adult who, by her passivity, was rejecting him. Later, in fact, when they began to display patterns of approach to the toys, they avoided the adult: they failed to speak to her, gesticulate in her direction, or approach her playfully with toys. It is interesting that these children never exhibited a large amount of freedom in the situation. They either locomoted or played much less than the other five children.

Few Contacts with the Adult. Two other children in the M-group were accompanied by nursery helpers but, unlike the preceding children, they were maximally secure in the situation. While they made occasional friendly advances to the adult, their attention was occupied primarily with the toys. The adult’s passivity did not appear to disturb them or to function as a rebuff. This may be related to the fact that playful importunities of the children frequently were ignored by busy helpers in the nursery, although actual distress customarily received immediate notice.

No child in the M-group had manifested a prior antagonism for the particular nursery helper who accompanied him. The fact that some children were secure in the situation with the “substitute” mother and others were insecure appears to be related to individual differences in the dependence of the children. The three children for whom the situation was insecure were children who characteristically sought adult intervention in all playroom battles, who fled from visitors in the nursery, and in other ways showed signs of a strong need for protection. The two children, on the contrary, who were maximally secure in the situation and who exhibited little dependence upon the “substitute” mother were children who exhibited a similar independence in nursery-school situations. The nursery helpers were, in the past experience of all of the children, a source of some protection, but unlike the own mothers they had not been constantly solicitous. In the experimental situation they provided an adequate protection only in those cases where the child's dependent need for protection was slight.

Many Contacts with the Adult. In the three cases where the own mother of the child was present, the children were maximally secure and the mothers were focal attractions in the situation. These children seemed to be unable to sustain any activity without referring it to the adult: they talked to her, showed her the new toys, and played in proximity to her. It is noteworthy that the mothers themselves were less consistently passive than were the nursery helpers. At times they departed from their instructions and caressed or reprimanded the children.

It should be stressed that over-dependence of children upon the mothers was typical of the mother-child relationships throughout the institu-

tion where the experiments were conducted. The children were the only love-objects in the immediate environment of the women. Moreover high social status in the institution was acquired through displays of maternalism, so that mothers sometimes fostered and boasted of the dependence of their progeny. Any need for protection which these over-dependent children might have experienced in the experimental situation was immediately satisfied by the presence of the own mother.

The extent to which the strange situation was made secure by the presence of the adult evidently varied with the dependence of the child and with the history of his previous relationship with the adult. For independent children, the "substitute" mothers were adequate sources of protection in the situation. Dependent children, on the contrary, were secure only in those instances where the adult who accompanied them was the own mother, whose affection and solicitude had been experienced constantly in the past.

Removal of the Adult

Five children in the M-group were left alone in the situation after the fifth trial in order to determine what effect the removal of the adult would have upon the security of the child (M-A group). The average security of the group as a whole decreased greatly after the adults left. Their average security score on the last five trials is lower than the average score for any other group on the same trials.

GROUP	AVERAGE SECURITY INDEX (Trials 6-10)
A	+0.11
M	+4.8
A-M	+0.99
M-A	-1.5

In view of the different roles which the adults played when they were present, it might be expected that individual children would react differently to their absence from the situation. The results for the M-A group reveal such individual differences. The two children who had been accompanied by their own mothers and for whom the adults had functioned as focal attractions in the situation displayed the greatest insecurity in the alone trials. Both children exhibited the pattern of nonmotile withdrawal, which is rated on the scale as indicative of maximal insecurity. Two other children who had been accompanied by nursery helpers and had experienced rejection when they sought the protection of the adults displayed only a temporary insecurity in the alone situation.. They, also, were dependent children, but their need for protection in the situation had never been satisfied by the passive nursery helpers. In contrast, the one child in the M-A group who was characteristically independent and who had made few contacts with the nursery helper when she was present showed no symptom of insecurity when the adult was removed. In brief, the results indicate that the greater the child's dependence and the more his dependent need for protection was satisfied by the particular adult who accompanied him, the greater was his insecurity when the adult was absent.

Delayed Introduction of the Adult

In the expectation of increasing the security of children who had been alone in the situation, mothers or "substitute" mothers were introduced after the fifth trial in six cases (A-M group). The average increase in security, however, was not perceptibly greater than the average increase in security displayed by the children who remained alone in the situation. The security index for the A-group increased 2.5 points in the last five trials and that of the A-M group increased 3.1 points.

Individual differences in the extent to which the security of the children increased after the entrance of the adult are related to the degrees of security which they had attained before the adults arrived. The more insecure the child in the alone situation, the less . readily did the presence of the adult, even the own mother, alter the situation for him. The three children who had been least insecure in the alone situation were characteristically independent children. They rapidly became maximally secure after the entrance of the adult. The three children, on the contrary, who were most insecure in the alone situation were typically dependent children, and they continued to display patterns indicative of a high degree of insecurity. The adults, one of whom was an own mother, remained impassive and made no attempt to console the children. The child whose own mother thus, in effect, rejected him stood in the center of the room where the experimenter had left him and screamed throughout four successive trials (i.e., a pattern of nonmotile withdrawal). It seems likely that the passivity of the adults functioned as a barrier to protection and that this frustration enhanced or prolonged the

negative reactions of the children to the situation. It may be noteworthy, also, that all three children who remained insecure after the entrance of the adults were developmentally retarded. Their IQ's on the Cattell Baby Test ranged from 71 to 86. Not only were they more insecure than the other children when the adult appeared, but they also were less adequate to the task of restructuring the situation in relation to the adult.

The behavior of the A-M group as a whole points to the difficulty of increasing the security of the child in a situation where he has been permitted to become highly insecure. Children who were accompanied by an adult from the outset were immediately or rapidly secure in the strange situation, but children who were allowed to become insecure before an adult arrived did not respond readily to the new source of protection.

INTERPRETATIONS

Apart from the problems of individual differences in degree of security which have already been discussed, there are general questions that must be answered. Why were children insecure in the strange situation? How does familiarity alter the situation for the child? And in what way does the presence of the mother make the situation secure for the child? The answer to these questions requires some type of field-analysis, or inquiry into situational determinants.

What, then, are the dynamic characteristics of the strange situation in which children exhibited such marked insecurity? It is evident from the behavior of children in the A group that the situation was highly unpleasant, or negatively valent. There is every indication that they wished to escape. The fact that a number of the children did not move towards the gate but remained non-motile or made restless locomotions suggests that the regions inter-mediate to the gate were not distinguished as paths to it. The situation may be represented as one of unstructured and negatively valent regions.[8]

A topological representation of the situation in which the extremely emotional pattern of nonmotile withdrawal appeared is given in Figure 2.

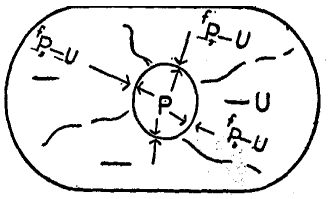


FIG. 2. NONMOTILE WITHDRAWAL

The child (P) is surrounded by an unstructured and negatively valent region (U) which overspreads his entire life space. As a result of the negative valence of this region there exists a force ^{f}P,–A, or a force away from the present state of the child, which is symbolized by the letter A. Theoretically, in the situation depicted in Figure 2, the "present state" would be the same what ever region the child is in at the moment, since the unstructured region fills the life space. The direction of the force ^{f}P,–A has only one solution, viz., ^{d}A, oB, or manipulation of the own body (oB). In this situation children remained nonmotile, and their gestures were oriented away from the dangerous external regions towards their own bodies.

The concept of unstructured regions is a cognitive concept denoting "lack of clarity." It is evident that not all unstructured situations which individuals face are, like the strange room, negatively valent. Intellectual puzzles and problems may constitute a. positive lure throughout periods when they are unstructured. But unstructuredness in the broader social world of the adult again possesses negative valence and may produce a basic insecurity. Perhaps the negative valence of unstructured regions is related to the amount of the total life space which they fill and to the feeling of power or impotence in the individual who faces them: Some results of the present study, notably the secure behavior of children accompanied by their mothers, suggest that the negative valence of the situation was a function not only of unstructured regions but also of the child's feeling of power, or lack of it.

[8] This is probably the most parsimonious assumption that can be made. An alternative possibility is that the situation was frustrating rather than dangerous. It is conceivable that the experimenter was at all times a part of the child's life space and that the situation represented, dynamically, a frustration of the goal "playing with the toys in the presence of the experimenter." While aloneness undoubtedly determined, in part, the dynamic character of the situation, the assumption that it functioned as a barrier to a goal and was therefore frustrating seems far fetched. To the observer the extremely traumatic and undifferentiated reactions of the children strongly suggested the primary reaction of fear rather than second-order responses to a frustrating situation.

In the majority of cases where adults were present, and in all cases where the adult was the child's own mother, the valence character of the situation was altered. To account for this fact, it may be assumed that the danger and negative valence of the strange room were determined by the strength of the child's powerfield as well as by the unstructuredness of the situation. An individual's powerfield is his ability to overcome restraining forces. It may be represented topologically as the sphere of influence of the person in the life space if it is recognized that, actually, this regional representation indicates a field of forces. It is a region within which the valences that obtain may be thought of as depending in part upon the person's feeling of strength. Not only may such regions be represented for the child himself, but they may be represented also for other persons who enter his life space, influencing its valence-character and the accessibility of goals—the term "induced" being applied to such valences. The powerfield of the other person may function as a constraint and may limit the child's own powerfield if the induced valences which it represents are negative[9] Where the induced valences are positive, as they were in the present study, the powerfield of the other person will supplement and increase the child's own powerfield. Typical differences-in the powerfields of children and adults in the strange situation are represented in Figure 3. The adult's powerfield, or the region within which positive valences were induced by the power of the adult in the child's life space, was large only where the adult was the child's own mother. The mother was a known source of protection. She could be used as a tool to extend the limited power of the child, as nursery helpers could not be used. When dependent children whose own powerfields were small were accompanied by nursery helpers, negative valences obtained in the unstructured regions of the situation and insecure behavior resulted.

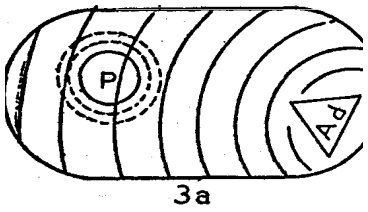
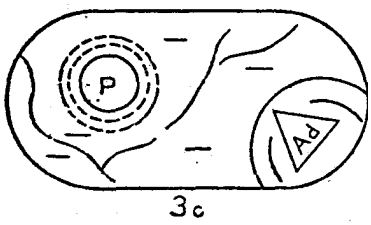


Fig. 3a shows the powerfields of a dependent child and his own mother.



In Fig. 3b the powerfields of an independent child and a nursery helper are represented.

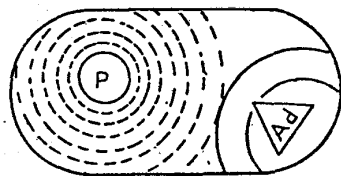


Fig. 3C shows the power-fields of a dependent child and a nursery helper.

P symbolizes the child and Ad, the adult. The broken lines represent the child's powerfield. The unbroken lines indicate the extent of the adult's powerfield.

A simple descriptive formula which summarizes the foregoing interpretations and states the functional dependencies of security as they emerge from the experiment was suggested by Professor Lewin. The factors upon which security was found to depend were the familiarity or structuredness of the situation, the independence of the child and the influence of the adult, in cases where adults were present. The relation of these three factors to the security of the child may be expressed in the formula:

$$\text{Insecurity} = f\ \frac{\text{Unfamiliarity of E}}{\text{Power of P}}$$

where' "Unfamiliarity of E" represents an environment characterized by unstructured regions and "Power of P" symbolizes the child's feeling of power as it is inferred from his sphere of influence in the situation. Character-

[9] Cf. Wiehe, F. Op. cit. Wiehe found that the powerfield of a strange person usually functions as a constraint upon the child's own powerfield.

istic differences in the independence of the children may be regarded as one determinant of differences in their feelings of strength in the situation at any given time. The enhancement of the child's feeling of power which the presence of an adult produced is also symbolized in Power of P. This formulation of insecurity as a function of the unfamiliarity of the situation in relation to the child's feeling of power brings together the following findings: (1) insecurity decreases with increasing familiarity of the situation; (2) insecurity diminishes more rapidly the greater is the child's feeling of power; (3) security obtains initially, notwithstanding the unfamiliarity of the environment, if the child's feeling of power is increased sufficiently by the presence of a familiar adult; (4) insecurity occurs when the child's feeling of power is diminished greatly by the removal of an adult upon whom he has felt that his power mainly depended.

SUMMARY AND CONCLUSIONS

An observational assessment of the reactions of young children to a strange playroom with and without a familiar adult present revealed 10 different patterns of behavior: nonmotile withdrawal and crying; agitated movement; retreat and crying; attack; regressive encapsulation; nonmotile withdrawal without crying; encapsulation in play; retreat and play; approach with conflict; and free approach.

The patterns served to define positions on a security scale which evaluates the degree of security of the child by the positive or negative direction of his adjustment to the situation and the relative amounts of emotional and adaptive behavior which he exhibits. Application of the scale to the protocolled behavior of the children yielded the following findings:

1. Children who were left alone in the strange room displayed patterns of behavior indicative of a high degree of insecurity.

2. Insecurity of children decreased as the situation became familiar, a reasonably good adjustment being achieved by the fifth or sixth solitary visit to the new environment.

3. Individual differences in the rate at which insecurity decreased showed no correlation with age or intelligence but appeared to be related to characteristic differences in the independence of the children.

4. When mothers or “substitute” mothers were present children usually were secure, notwithstanding the unfamiliarity of the situation. Individual differences in security were related to differences in the extent to which mothers and “substitute” mothers had come to represent a known source of protection to the more dependent children.

5. Children’s security in the situation decreased with the removal of the adult in a degree directly proportional to the extent of their preceding dependence upon the adult.

6. Insecurity of children alone in the strange situation diminished when a familiar adult was introduced only in cases where the child's insecurity in the alone situation was not extreme. Children who were highly insecure at the time of the adult's appearance remained insecure, even when the adult was the own mother. (It is possible that the continued emotionality of these children was related to the frustrating effect of the adult’s passivity upon their need for comforting and protection and to the comparatively low intelligence of these subjects.)

In the light of these findings, insecurity is formulated as a function of the unfamiliarity, or unstructuredness, of the environment in relation to the child’s feeling of power in it. The striking effect of familiarity upon the security of the child is attributed to a cognitive structuring of the situation into goal-regions and path-regions which occurs with time, while the smaller degree of insecurity evidenced by independent children and the security of children accompanied by their mothers in a strange situation are attributed to a greater feeling of power on the part of these children.

In passing, the following implications of the findings for practical application may warrant statement. Because blackouts have become a recurrent phenomenon on one coast and authorities contemplate the possibility of future large-scale evacuations of children from coastal areas, the assemblage of methods for immunizing the insecurity of children in unstructured environments has particular urgency. One generalization derivable from the present study—and long known to nursery-school workers—is that the happiness of the child in a new situation is not guaranteed by an abundant supply of bright new toys. The most certain provision that can be made for the security of young children faced with unstructured environments appears to be the presence of a familiar adult whose protective power is known. Even a familiar object may lessen in some degree the insecurity of children in strange situations.

Although dependent children, or children whose feeling of power depends upon a powerful adult, will be at a disadvantage in a variety of situations where the adult is not present, the problem of increasing their areas of security is not met by enforcing independence upon them in a traumatic situation. When dependent children experience rejection by an adult, their insecurity may be prolonged and an avoidance reaction towards the adult may be set up. Independence, defined as the ability to discriminate and respond to goals that are not specifically protective, may be furthered by the development of skills which may increase the child's power and independence and consequently his security both alone and with other children, where the possession of skills may attract prestige. and help to structure the social situation.

There has been no attempt here to deal with data on the reactions of older children and adults to strange situations, yet it would be surprising if adult patterns of reaction bore no resemblance to those of children. War with its flux of social fields, its break-down of social organization, and especially the device of transporting and dumping conquered peoples in strange environments attest that cognitively unstructured situations of the kind which produce insecurity are the lot of man in our times. Some case-history data on adult patterns of reaction to a cognitively unstructured field have been published and certain of the patterns depicted are roughly analogous to the patterns of insecure behavior described here.[10] From the formula,

$$\text{Insecurity} = f\ \frac{\text{Unfamiliarity of E}}{\text{Power of P}}$$

it is plain that this Nazi strategy is productive of maximum insecurity since it throws its victims into unfamiliar environments and simultaneously deprives them of all sources of power. Nothing could be better calculated to produce insecurity.

10. Allport, G. W., Bruner, J. S., & Jandorf, E. M. Personality under social catastrophe: an analysis of 90 German refugee life histories. Char. &.Pers., 1941, 10, 1-22.