DOCUMENT RESUME

ED 030 474 PS 001 848

By-Dorman, Lynn. Rebelsky, Freda

The Relationship Between Instrumental Assertion and the Stanford-Binet.

Boston Univ., Mass. Headstart Evaluation and Research Center.
Spons Agency-Office of Economic Opportunity, Washington, D.C.
Report No-OEO-4116
Pub Date Mar 69
Note-15p., Paper presented at the meetings of the Society for Research in Child Development, March, 1969
EDRS Price MF-$0.25 HC-$0.85
Descriptors-*Aggression, *Behavior Patterns, Behavior Rating Scales, Behavior Theories, Intelligence Level, *Intelligence Tests, Item Analysis, Learning Processes, *Preschool Children, Statistical Analysis
Identifiers-Assertive Behavior, Head Start, Stanford Binet

Assertive behavior in children is characterized as manipulation and exploration of the environment. Assertive behavior can be nondestructive or destructive. It has been suggested that learning is dependent on assertion and that distortion or inhibition of assertive behavior may restrict or distort the learning process. Fifty Head Start children were tested for the existence of assertive behavior by teacher and observer ratings, and that data was compared with the childrens' scores on the Stanford-Binet. An assertive behavior task, the Beller task, was also administered to the children. Comparison of the teacher and observer ratings resulted in a significantly high correlation. Both kinds of ratings were also correlated with the Beller task data, and the results indicated that the latter was a valid measure of assertion. Of the 35 items on the Binet, the "assertive" children scored better on 29 items than the less assertive children, with significant differences occurring on eight of the 29. Thus, assertive behavior and cognitive performance appeared to be positively related. (WD)

THE RELATIONSHIP BETWEEN INSTRUMENTAL ASSERTION AND THE STANFORD-BINET

Lynn Dorman

Freda Rebelsky

Boston University

This paper has been submitted for presentation at the Society for Research in Child Development Meetings, March, 1969.

Funded by Boston University Head Start Evaluation and Research Center, under Contract 4116 with the Office of Economic Opportunity

The purpose of this study was to explore the relationship between assertive behavior and performance on cognitive tasks; specifically between teacher and observer ratings of classroom assertiveness, instrumental assertion and aspects of the Stanford-Binet.

Assertive behaviors form a general class of behaviors characterized by "demand" quality in that these behaviors demand a response from the environment (Patterson, Littman and Bricker, 1967). Assertive behaviors can be either physical or verbal and can appear in various forms.

One form of assertion may be seen in manipulation and exploration of the environment where the organism acts or asserts in order to create a result in the environment or in order to learn about the environment. An example of creating results can be found in Piaget (1952) who describes instances of infants purposefully acting on the environment in order to "make interesting sights last," to recreate a response from the environment. This form of assertion starts early in life, at about three months and continues into adulthood.

R. White (1959) proposed a concept of motivation to account for exploration and manipulation of the environment, which he called competence, a capacity to interact effectively with the environment. The attempt to interact effectively with the environment may be seen in question asking where the goal is information, or in a child's ability to stay with a task such as a puzzle until he has successfully completed it.

Assertive behaviors may also appear in destructive forms. One type of assertive destruction involves the intention to harm other persons or to damage the property of others. Examples of this would be hitting someone or throwing a rock through a window. A second type

of destruction is one which can be labeled legitimate or instrumental, where barriers are destroyed in order to obtain a goal and where there is no intent to harm others. The intention of such instrumental assertion is to deal effectively with the environment, to learn about the environment and can best be exemplified by the notion of "attacking" a problem or by a child "tearing" open a box to get the object inside.

It is important to explore in detail the relationship between the different forms of assertion. It is important also to explore the relationship between assertion and performance on cognitive tasks because assertion is a necessary part of learning and therefore of all cognitive intellectual activities. (Bruner, 1966; Brown, 1965; Hunt, 1961; Piaget, 1963.) Learning is dependent on assertion, on interaction with one's environment; "the motivated organism senses its world, interprets where is there, responds to it, and then responds to the consequences of its own responses" (Sanford, 1965). It follows that any distortion in the ability to assert oneself will ultimately distort the learning process through several mechanisms, most often through the inhibition of behaviors necessary to learning such as interpreting and responding.

Although the distortion of assertive behaviors is not the focus of this study, it is important for the further understanding of the relationship of assertion to cognitive activities to note in which ways this distortion might occur. Distortion of assertive behavior will occur if the child is restricted and not allowed to explore. Placing a child in a playpen, leaving him in a crib, and not responding to him does not allow for the development of competent interaction with the environment (White, 1965). According to Erikson (1955) shame and doubt

about oneself and one's capabilities are the consequences of denied autonomy. Guilt about action and thoughts arises from the period when the child is learning to control his own manipulative thoughts and action. If a child is not given the chance to explore control of his own assertive behaviors, he never learns that he can control them, he never learns that they are not as extreme as he hoped or feared (Bruner, 1966).

Another way of distorting the development of assertive behaviors is through physical punishment of assertion. If a child is hit for asking questions or for behavior physically inquisitive, he will not show this behavior in front of adults and may learn not to express inquisitiveness at all (Sears, et al, 1957).

The effect of the home atmosphere on intellectual and social-emotional development has been shown by Kohlberg (1966) and Becker (1964). In a review of past research, Becker (1964) found that a warm, permissive atmosphere generally produced creative, positive, assertive children, while restrictive-hostile homes produced withdrawn, "neutrotic" children. Kohlberg (1966) suggests that a climate of warmth, expressiveness and security allows for "exploration and interpretation of the new and the problematic" while a climate of coldness, hostility, anxiety and conflict does not.

The restricted or punished child may learn to inhibit his assertive behaviors because they make him feel ashamed, doubtful, guilty or afraid. When faced with a task that requires assertion, especially in front of an adult, the child is more likely to be attending to his own feelings than to the task at hand. Or, if the child has attended to some aspect of the environment, its encoding and subsequent retrievel (as presented by Miller, Galenter and Pribaum, 1966) will be affected by the inhibitory processes or the thought processes that accompany the inhibition.

The hypothesis of this study was that teacher and observer rating of manipulative assertion will be related to instrumental destructive assertion and that instrumental destructive assertion will be related to performance on the Stanford-Binet.

PROCEDURE:

Subjects: The subjects were twenty-five boys and twenty-five girls enrolled in a Head Start program in Brockton, Massachusetts. Six of the boys and five of the girls were black. Preschool children were selected because the inhibition or expression of assertive behaviors has already become part of the child's pattern of behavior by age four or five. In addition, the children have not yet been exposed to a formal learning situation, as in grade school, where the possibility of school failure or teacher attitude may further affect the child's performance. Children were tested late in the school year since the testing of children who are newly enrolled has been found to effect test scores.

Head Start children have been selected because pilot work has indicated that many of these children do not express assertion in situations where it can be safely expressed or in situations which middle class children express assertive behaviors.

Method: All testing was done individually and to avoid bias, different people served as experimenters and as observers.

Rating of Assertion: (a) Teacher. A rating scale was developed in which the teacher was asked to rate each child on a five point scale for the following behaviors--asking informational questions, completing tasks, experimenting on his own, etc. (b) Observers. The

identical rating scale was used by two observers, who watched the children at play for fifteen minutes. The inter-observer reliability was high with agreement on over 95% of the children.

Instrumental assertive behavior: This task was adapted from Beller (1961). S was confronted with a four-sided container open on top. E opened the side of the box facing S and S saw a small top inside but access to it was blocked by a tower of plastic glasses. The experimenter said to the child, "Do you see the toy in there? It is a top. You can have the top to keep by knocking over the tower of glasses in front of it." The child's reaction time, from the last word of the instructions was the measure of instrumental assertion. If there was no response, the instructions were repeated at 30" and at 1'. If S did not respond in two minutes, E said, "Well, I guess you don't want to knock towers over today, but you can have the top anyway," and then E gave the toy to the child.

Stanford-Binet: Form L-M was administered individually to each child by a skilled tester who did not know of S's performance on any of the assertion measures.

RESULTS:

Assertion Measures: Table 1 below presents the means, ranges, and standard deviations for the measure of assertion, the observers' ratings, and the teachers' ratings.

TABLE 1

Range, mean, and Standard Deviation of all Measures of Assertion

Measure	Range	Mean	S.D.
Beller Task	3-120	54.99	43.19
Teacher Rating	12-45	28.6	7.69
Observation	0-25	7.52	5.85

Beller Task: On this task, 11 of the 50 children never knocked over the glasses and were given a score of 120", the time at which the task was ended. For those 39 who did knock over the glasses the time ranged between 3 and 108.5 seconds. For all further computation including this task, all scores were included but were transformed into logarithms to normalize the distribution and the variance.

An analysis of variance was done to determine if there were any race or sex differences for the assertion task. Table 2 below gives the results of this analysis.

TABLE 2

Analysis of Variance for Assertion (Beller task)

Source	df	MS	F	
Race	1	1.908	1.381	n.s.
Sex	1	.426	<1	
Interaction	1	2.883	2.086	n.s.
Error	46	1.382		

None of the F ratios were significant, indicating that there were no race or sex differences on this measure.

Since we had assumed that the Beller measure of assertion was in fact a reflection of all varieties of positive assertion, this score was correlated with both the teachers ratings and the observations to validate this measure. The correlation with the teachers ratings was -.26 (p.05) and the correlation with the observations was -.29 (p.025). The rating and the observations were correlated also (-.28, p.05). These correlations indicate that the Beller score is a valid measure of assertion, as defined by the other measures, and it was then used in the correlation coefficient performance.

Cognitive measure: The Stanford-Binet was used to indicate cognitive performance. The mean total IQ for the sample was 91.98 with a S.D. of 18.12. An analysis of variance was computed for this score to determine again if any race or sex differences. The results are presented in Table 3 below.

TABLE 3

Analysis of Variance for Intelligence

Source	df	MS	F	
Race	1	448.949	1.319	n.s.
Sex	1	133.511	< 1	
Interaction	1	184.744	< 1	
Error	45	340.484		

None of the F ratios were significant, indicating that there were no race or sex differences in intelligence quotients.

A point biserial correlation was computed for each item of the Binet, years IV through VIII, to determine for which items there were significant Beller score differences between the passers and the failers.

Table 4 on the following page presents the point-biserial correlations for the Stanford-Binet.

TABLE 4

Point Biserial Correlations for the Binet

Correlation	Item	Description	Classification
.028*	7,5	Opposite analogies III	GC,JR
.030*	4-6,4	Materials	GC
.034*	5,6	Patience, rectangles	JR, VM
.035	4-6,3	Pict. Sim and Diff.	JR
.041	8,4	Sim and differences	GC,JR
.064	8,6	Days of the week	MC
.069	7,3	Copy a diamond	VM
.089	7,2	Similarities II	GC, JR
.090*	7,4	Comprehension IV	GC,JR
.092	5,2	Folding triangle	VM
.097	4-6,5	Three commissions	MC
.112	6,6	Maze	VM
.128*	8,2	Wet Fall	MC
.132	6,2	Differences	JR
.138	4,3	Opposite analogies I	JR
.139	7,1	Picture absurdities	JR
.140*	8,3	Verbal absurdities	JR
.167	5,1	Picture completion	VM
.168	7,6	Repeat 5 digits	MC
.171	4-6,1	Aesthetic comparisons	JR
.171	4-6,6	Comprehension (eyes, ears)III	GC
.190	6,5	Opposite analogies II	JR
.204	6,3	Mutilated pix	JR
.225	4-6,2	Opposite analogies I	JR
.226	8,1	Vocabulary	V,VF
.234	4,2	Object memory	MC
.236	4,1	Picture vocabulary	V,VF
.261	8,5	Comprehension IV	GC,JR
.287	4,5	Discrimination of form	JR
.287	4,6	Comprehension II (houses,bks)	GC
.287	5,3	Definitions	V,VF
.287	5,4	Copy square	VM
.312	6,1	Vocabulary	V,VF
.326	5,5	Pict. sim and diff.	JR
.379	6,4	Number concept	AR
.384	4,4	Picture identification	GC, JR

*Indicates items in which the mean "Pass" score was higher than the "Fail" score, (the slow reactors did better than the fast reactors.)

Of the 35 items, eight showed significant assertion differences between passers and failures, and another five items showed significant differences in the p. 10 range. On all but six items, the passers had better scores than those who failed. The six items on which the less assertive subjects did better are starred in Table 4.

The items of the Binet were classified into Verbal, Verbal Fluence (V, VF), General Comprehension (GC), Judgment and Reasoning (JR), Visual Motor (VM), Memory and Concentration (MC), Arithmetic Reasoning (AR). (Valett, 1965.)

DISCUSSION:

The finding that the teacher ratings of assertion is significant correlated to the observer measures of assertion is important.

The observers noted in fifteen minutes the same behaviors that the teachers had been seeing over the previous ten months. This indicates that assertion is a relatively stable characteristic which children bring to all situations.

The teacher and observer ratings of assertion were based on such "positive" behaviors as asking for information, directing others, and sticking with a task while the Beller measure of assertion was of the legitimate destructive type. We had assumed that legitimate destructive assertion was a part of the general class of assertive behaviors, and this was borne out in the significant correlations between the Beller task and the other two measures of assertion.

Since the style of assertive behavior is a stable characteristic of the child, it becomes important to determine its actual relationship with cognitive performance. We had predicted that assertion and cognitive performance would be related since learning, and all

cognizant performances are dependent upon some sort of assertion. Assertive behaviors as measured by Beller task rating were found to be significantly related to total intelligences, as measured by form L-M of the Stanford-Binet. The observers ratings were not significantly related to intelligence. (The more assertive children were the more intelligent children.) Therefore, the ability to master one's environment, to explore it, and to assert one's self physically on it teaches one about the environment. The measure of intelligence is a reflection of how much one has learned about the environment and of how well one is able to respond appropriately to the environment.

In order to determine which type of questions significantly reflected the difference between assertive and non-assertive children, a point biserial correlation was done for each item of the Binet, as reported in Table 4. The items which differ the most between passers and failures of the item, in terms of their Beller score, were those items in which the information comes about through interaction with the environment (very much like the items the teachers rated). They are not the items which one can learn by rote, such as memorizing digits or remembering stories or items that one can copy at the time of the test, such as triangle folding and putting a rectangle together. (An exception to this is that copying a square was among the significant different items, but this will be discussed later.)

The items least affected were those at years IV-6 and at years VII and VIII. At these years, children of all levels of assertion passed or failed all the items so that a correlation was practically nonexistent. This was not true, though, at year IV where all the failers of items were those children who did not knock over the tower. Thus, some of these were significantly related. Among the items which significantly differentiated the children

were the discrimination of form, matching various geometric shaped forms. This may give us the reason why copying a square was also significantly different. The low assertive children cannot discriminate forms and if they can't match forms, they can't copy forms, which is a more difficult task.

If one abstractly leaves aside the least discriminating items, those from .028 and .097 then we can look at those where there is low discrimination (.112-.204) and high (.225-.387). Of twelve, the low discriminator items, seven are classified as judgment or reasoning, and only one is classified as general comprehension. Among the high discriminators are all the verbal, verbal fluency items, and the one arithmetic reasoning item. There are also five judgment reasoning items but three are double-classified as general comprehension. Three of these items are general comprehension. Thus the items most affected fall under all the classifications, but the fact that all the verbal items for these years are included is important. Why is vocabulary, picture or verbal, affected by assertion? The only arithmetic reason item is included, indicating that number concepts are affected by assertion. In terms of later intelligence testing and school learning, these are the kinds of behaviors that are tapped. If one can't verbalize or count, one does not do well on tests; intelligence or school. These items tap the kind of information that one is likely to pick up from interaction with the environment. Vocabulary, definitions, and picture identification all result from previous interaction with the environment and interest in what is happening to the self. To learn vocabulary or uses of things, the child usually has to ask "why does" type questions. The failer of these items were rated low. Discrimination of form, copying a square, and

picture similarities and differences, and perhaps number concepts require analysis of the whole field into separate parts, which is a form of assertion. To discriminate forms, one must search the whole field noting similarities and differences between the sample and field items. The child can retain the sample, but in this instance if it were retained, it was probably miscoded, since we also know that these children cannot copy a form (square). The failers of these items probably have difficulty encoding these more abstract forms.

Similarities and differences require comparison of two pictures on the same page. It is possible that children failed this item because they did not see any difference between the forms, but it is also possible that they reported similarities between items on a functional basis. Examples of this would be saying that the table and the chair are the same or that the train and the wagon are the same because they belong together or they are both toys. It is impossible to say whether or not this is true because we did not question the children on why they gave their answers, we only scored them right or wrong. But the fact is that low assertive children did get more of these items wrong. If low assertive children cannot match forms, and can't tell if items look the same or different, it would follow that the low assertive children would do poorly on vocabulary and verbal items because vocabulary is also a matching item. A word is matched with a concept, but before the matching occurs, the concept must be clearly differentiated from others.

The low assertive children may be functioning at a lower level of abstraction or on a concrete level in the verbal and general comprehension

areas but not in the judgment and reasoning area. Perhaps judgment and reason do not require the same thought processes as do verbalization and comprehension.

At this time, we cannot say with certainty why some items are greatly affected by assertion and some not at all, but we have been able to offer some hypothesis for further testing. Since ability to assert one's self is very much related to the cognitive process, further studies should be done to determine exactly what process is affected, how and why.

In addition, if one could "free" the low assertive children through some technique, would this increase their cognitive abilities?

BIBLIOGRAPHY

Becker, W., Consequences of different kinds of parental discipline. In M. L. Hoffman and Lois Hoffman (Eds) Review of Child Development Research: I. New York: Russel Sage Found., 1964.

Beller, E. K., and Haeberle, A. W., Dependency and the Frustration-Aggression Hypothesis II. Paper presented at the 32nd Annual Meeting of the Eastern Psychological Association, 1961.

Brown, R., Social Psychology. New York: Free Press, 1965.

Bruner, J., Toward a Theory of Instruction. Cambridge: Belknap Press, 1966.

Erikson, E., Childhood and Society. New York: Morton, 1955.

Hunt, J. McV. Intelligence and Experience. New York: Ronald Press, 1961.

Kohlberg, L., A cognitive-developmental analysis of Children's Sex-role concepts and Attitudes. In E. Maccoby (Ed.) The Development of Sex Differences. Calif.: Stanford Univ. Press, 1966.

Miller, G., Galanter, E., and Pribaum, K. Plans and the Structure of Behavior. New York: Henry Holt and Co., 1960.

Patterson, G., Littman, R., and Bricker, W. Assertive behavior in Children: A step toward a theory of aggesssion. Monographs of the Society for Research in Child Development, 1967, 32, No. 5 (Serial No. 113)

Piaget, J., The Origins of Intelligence in Children. New York: Norton, 1963.

Sanford, F., Psychology: A Scientific Study of Man. 2nd Edition. California: Wadsworth, 1965.

Sears, R.R., Maccoby, E., and Levin, H. Patterns in Child Rearing. Illinois: Row, Peterson & Co., 1957.

Valett, A Clinical Profile for the Stanford-Binet Intelligence Scale. L-M. Published by Consulting Psychologists Press.

White, R., Motivation reconsidered: The concept of Competence. Psychology Review, 1959, 66, 297-333.

White, R., Ego and Reality in Psychoanalytic Theory. Psychology Issues. 1963, No. 11.