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A Comparison of The Klopfer-Kelly and Beck Methods of Rating Intelligence Level From The Rorschach Test

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A COMPARISON OF THE KLOPFER-KELLEY
AND BECK METHODS OF RATING
INTELLIGENCE LEVEL FROM THE
RORSCHACH TEST

being

A thesis presented to the Graduate Faculty
of the Fort Hays Kansas State College in
partial fulfillment of the requirements for
the Degree of Master of Science

by

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TABLE OF CONTENTS

	PAGE
STATEMENT OF THE PROBLEM	1
a. General.	1
b. Specific	1
METHOD OF STUDY	1
RELEVANT LITERATURE	2
a. Rorschach's original method	2
b. Harriman norm for college students.	5
PRESENT METHODS OF INTERPRETATION	5
RESULTS	26
CONCLUSIONS	29
BIBLIOGRAPHY.	31

I. STATEMENT OF THE PROBLEM

The problem in this investigation concerns the Klopfer-Kelley and the Beck methods of interpreting intelligence from the Rorschach Test. Stated generally, the problem is to find which one of these two methods of intelligence interpretation of the Rorschach Test is the more efficient in determining a true intelligence level, or, whether they are equally good.

Specifically the problem concerns the determination of the degree of correlation of the results of each of these two methods with the Wechsler-Bellevue Adult Intelligence Scale.

This problem is concerned primarily with height or degree of intelligence, excluding the type of intelligence.

II. METHOD OF STUDY

The method in this investigation involved the administering of the Rorschach Inkblot Personality Test and the Wechsler-Bellevue Adult Intelligence Scale to approximately forty college students of both sexes. Both tests were administered to each student.

The Rorschach Test of each subject was scored for intelligence by the two methods, the Klopfer-Kelley and the Beck methods. The resulting scores of each method were then correlated with the corresponding scores derived from the Wechsler-Bellevue Adult Intelligence Scale, which was used as the criterion of intelligence.

III. RELEVANT LITERATURE

Rorschach, in his original works, devoted considerable space to the interpretation of the intelligence level. From findings taken from a study made of one-hundred-twenty intelligent normals, he found that protocols of intelligent subjects were characterized by the following characteristics:

1. A large percentage of clearly visualized forms.
2. Many kinaesthetic influences acting in the perceptive process (M or movement).
3. A large number of whole answers.
4. Good conceptive types; W, W-D, W-D-Dd.
5. Optimum rigidity of sequence of mode of apperception. (Orderly)
6. A small percentage of animal responses and increased variability of interpretations.
7. Neither too large nor too small percentage of original responses. ¹

Rorschach found the first component of intelligence to be the ability to perceive clearly visualized forms. The symbol indicating the clearly visualized form was F-plus. The F-plus percentage was the per cent of clearly visualized forms within the total number of form determined responses. The optimum F-plus percentage for normal adults ranged from eighty to ninety-five per cent. Lower F-plus per cent indicated a lower intelligence level.

1. H. Rorschach, *Psychodiagnostics*. Berne, Switzerland: Verlag Hans Huber., 1942. (New York: Grune & Stratton Inc., 1942.)

The F-plus per cent paired with the intelligence level ranged as follows:²

Very Superior	90 plus
Superior	80 plus
Average	70 to 80
Low Average	60 to 70
Morons	45 to 60
Imbeciles	0 to 45

The movement (M) response was found to be present larger in number and better in quality in the records of the individual with a superior intelligence than in the average and lower intelligence levels. The response was scored movement (M) when the substance of the response was seen in motion, or was moving to the individual. The number of (M) responses ranged from two to four in average intelligence; to five or more in the superior range.

The ability to unite small units into a whole was found to be characteristic of the intelligent individual. It was found the subjects of superior intelligence produced seven to ten, or more, whole (W) responses. These were usually of clearly perceived form. (F-plus), or good movement, (M), responses.

Rorschach divided the whole (W) answers into two different groups, the primary and secondary. Examples of the primary answers are: Plate I interpreted as a butterfly or as two angels giving aid to a woman; Plate V, as a bat; Plate IX (inverted) as a volcano.³ Within the primary and

2. Ibid., p. 24.

3. Ibid., p. 37.

secondary divisions, there is further division among the secondary type of answers. Under the secondary type of response were the confabulatory, successive-combinatory, and the simultaneous-combinatory whole responses. The confabulated type of answer produces a single detail, more or less clearly perceived, and is used as the basis for the interpretation of the whole picture, giving very little thought to the other parts of the figure. For example, in Plate I, the small claw-like figures lead many subjects to call the whole figure a crab. In the successive-combinatory whole the individual first interprets a few details and then combines them into a whole answer. The simultaneous-combinatory wholes differ from the successive-combinatory wholes only in the greater rapidity of the associative process.

The animal percentage (A%) was the total number of responses divided into the response total designated as animal, or belonging to that group. The animal percentage (A%) ranged from fifty-five per cent in the average level of intelligence. With a decrease of the (A%) below twenty-five per cent there was usually an increase in the variety of categories chosen in the response content. A greater number, or wider variety, of categories chosen outside the human (H), human detail (Hd), animal (A), animal detail (Ad), and anatomy (At) showed the individual to have an average or higher level of intelligence.

The original (O) response was that response appearing only once in one-hundred records. The original per cent (O%) was the percentage of original (O) responses out of the total number of responses. The level of intelligence was shown by the number of good original responses given by the individual.

The sequence of the mode of apperception, or method of attack, was found to be orderly in the average and superior levels of intelligence. To have an orderly sequence the individual would have to start with W, W-D, or W-D-d and follow that same method of attack on at least six or seven of the ten cards.

Harriman,⁴ in a study of one-hundred college students, established norms on the Rorschach Test for college students as follows:

1. Mean number of response to each card was 5.13.
2. Mean F-plus per cent was 78%.
3. Mean A% was 39.3%.
4. Mean number of W was 11.1.
5. Mean number of O was 13.2 good.
6. Mean number of M was 4.28.

IV. PRESENT METHODS OF INTERPRETATION

Present methods of intelligence interpretation on the Rorschach Test follow, in general, Rorschach's original method. They utilize the same factors in their interpretation, but have added certain refinements that have been evolved through the continued attempts to make the interpretation more exact and efficient. This is true in both the Klopfer-Kelley and Beck methods.

A. Klopfer-Kelley Method

In general the Klopfer-Kelley estimate of intelligence utilizes two aspects:

1. The form accuracy level of the responses, which indicates the logical or analytic capacities of a subject, and,
2. The degree of organization and combination of areas and determinants, which indicate the synthetic intellectual capacities.⁵

4. P. L. Harriman, "The Rorschach test applied to a group of college Students," *Amer. J. Orthopsychiat.*, V (1935), 116-20.

5. B. Klopfer, and D. M. Kelley, The Rorschach Technique (New York: World Book Co., 1942), p. 267.

These two aspects are scored in the following factors:

Number and quality of W
 Number and quality of M
 Form accuracy level
 Number and quality of O responses
 Variety of content
 Succession of responses 6

The first scoring factor in the whole (W) response. The whole (W) response is that response in which the different parts of the ink-blot are perceived as a whole.

The Klopfer-Kelley method divides the whole (W) responses into several level or types; the superior (W) responses; the organized popular (W) construction; the unelaborated fairly accurate (W); the inaccurate, unorganized outline (W); and the confabulatory type of (W) response.

The superior (W) construction can be identified by unusual elaborations of the (W) construction. Even though the (W) response is organized along the most obvious and popular lines, refinements in the use of shading and color help establish superiority. All (W) responses of more or less definite form with other determinants such as shading, color, or movement, must be considered as superior (W) constructions. For example, the following response to Card 1: "Two angels flying to heaven with a headless individual between them. There are the wings and their arms holding on to this person."

The organized popular (W) type of response is similar to the superior type of construction but lacking the unusual or special elaboration. It contains average to good form. Lack of elaboration

refers mainly to the unusual and small additional description. Calling Card 1 a "Halloween Mask" would be an example of this type of popular construction.

The unelaborated, fairly accurate outline (W's), are still of a lower level. This type of response is shown when the individual responds by naming the inkblot a bat or butterfly and points out the vague wings and body of an animal without further elaboration.

The inaccurate, unorganized outline (W's) are a very low level of (W) response. Examples are the concept of a bird or butterfly given for each card. There is no further elaboration. In most cases the response does not fit the contour of the blot.

Only (W's) with very good construction, organization, and form indicate an individual of superior intellectual capacities. As few as two or three superior whole responses may be a reliable indication that the individual has superior intelligence. Among subjects with an I. Q. of 100 or less, there are usually no (W) constructions of a higher quality than the organized popular (W). As the intellectual level drops the quality and quantity of the (W) response decreases.

The second scoring factor, movement, is scored (M) when a part or all of the blot is seen as moving. The number and quality of the movement (M) responses are important in finding the intellectual level. The differentiation between the average, higher, and superior level of intelligence can be based on the quantity of (M), the quality of (M), and the degree of strength of obviousness of the stimulus necessary for

seeing (M) in any card. The larger the quantity of (M) seen the less obvious the stimulus necessary for producing (M).

The obviousness of the stimulus necessary for seeing (M) in the ten cards, in order of easiness, according to Klopfer and Kelley, is as follows:

1. Card III
2. Cards II and VII
3. Cards I and IV
4. Cards V, VI, and X

The quantity of (M) is in direct relation with the quality and degree of obviousness. The greater the number of (M) produced, the farther they go beyond the most obvious (M) stimuli, and the more they are indicative of a superior mind.

An individual of superior intelligence would have five or more (M's) produced predominantly on Cards V, VII, and X. The average level of intelligence would produce three to five on Cards I and IV, and some on II, VII, and IX. Low intelligence produces zero to two on Cards III and II.

In the evaluation of form (F), the third scoring factor, not only the pure form (F) but also the (F) elements implied in the movement (M), shading (K), and color (C) must be considered.

According to Klopfer and Kelley pure form (F) responses fall into three levels, as follows:

- | | |
|----------|--|
| (F-plus) | Exceptionally clear cut form. The response fits the blot closely. An example would be to call Card 1 a face of a Fox. |
| (F) | The form is accurate but not as good, clear cut, and well defined as in the (F-plus) response. It is an average and popular type of form. An example would be to call Card II the heads of two bears pressed together. |

(F-minus) The form is very poor and very vague. The substance of the response does not fit that particular part of the blot from which it was named. Naming Card 1 as a piece of coal would be an example.

Records which contain a large amount of (F-plus) indicate a superior level of intelligence. A superior level of intelligence would produce up to ninety-five per cent (F-plus) responses out of the total number of pure (F) responses. If the form is generally average with few (F-plus) or (F-minus) responses that I. Q. is about average.

If the individual has ten per cent to twenty per cent (F-minus) with the rest of the (F) on the popular level, a borderline area between deficiency and dull normal is suggested. If more than fifty per cent of all form responses are less accurate than the popular (F) a feebleminded level is in evidence.

The original response (O) is mostly dependent on quality for aid in interpretation, although quantity is an included factor. The form accuracy of the original (O) response is very important. A superior level is indicated when the individual produces from twenty to thirty per cent (O) of good form. The low average level of intelligence will produce from zero to twenty per cent (O).

The variety of content is usually represented by the animal (A) percentage. If twenty-five per cent of the total number of responses is outside the animal (A), human (H), anatomical (At), and geographical (Geo), then a superior level of intelligence is indicated. The number of animal (A) responses out of the total, the (A%), is indicative of the level of intelligence. Records showing forty to fifty per cent (A) might

indicate a lower level of intelligence. The feeble-minded individual might have as high as one-hundred per cent (A) responses. The record showing twenty per cent (A) response would indicate a greater variety of content and a higher or superior level of intelligence.

B. The Beck Method

The Beck method utilizes the same factors in the interpretation of the intellectual level as Klopfer-Kelley and Rorschach, but with the addition of certain refinements. The scoring factors used are as follows:

- Number and quality of W
- Total level of Z
- Number and quality of M
- Variety of content (A%)
- F-plus percentage, or, the form accuracy level
- Response total
- Quality and quantity of O

Beck states: "The Rorschach Test projects degree or height of intelligence, in two factors - whole percepts (W) and organization (Z)." ⁷

The quantity of (W) is an index to the intellectual level of the individual. The higher the intelligence level of an individual, the more (W) he can produce.

The strength of the stimulus producing (W) in the ten cards varies. Cards III, IX, and X are about of equal strength, and are the most difficult cards on which to form a whole (W) response, according

7. S. J. Beck, Rorschach's Test (New York: Grune & Stratton., 1944), p. 10. Vol. 1.

to Klopfer-Kelley and Beck. Only individuals of a most superior intelligence can produce good (W's) on cards III, and IX, and X. Next in line of difficulty are cards II and VIII. Card VII is intermediate between the difficult and the easy group. Cards I, IV, V, and VI show (W) responses of significant statistical frequency and are more common in regard to production of the (W) response. They are the cards on which persons of low or low average intelligence form the bulk of their whole (W) response.

There are differences in the quality of (W). The poorer quality (W), additive (W), and the easily seen inaccurate (W) are the result of a low level of intelligence. This quality in relation to the card from which the (W) response originates is an index to the intellectual level.

The organization (Z) score is a most important factor. It is an addition and refinement over the traditional method of interpreting intelligence. It involves the same factor that the Klopfer-Kelley and Rorschach method merely made note of in their methods. The Klopfer-Kelley method includes this organizational activity in its interpretation but does not score it numerically in the same fashion that the Beck method does.

In each response the individual meaningfully organizes the units within each blot without including the entire blot. In organizing the units the individual employs the same activity that brings about the

(W) response, although the response is not (W). This is the organization (Z) score response. Each response such as this receives a certain organization (Z) credit, and the sum of all the organization (Z) scores in a Rorschach record is the measure of the individual's (Z) activity. The (Z) score total is in direct relation to the intellectual capacity of the individual. The higher the organization score total, the higher the intellectual level of the individual.

Beck lists several reasons why the organization score should be included. He states:

The organization (Z) factor has certain virtues not inherent in (W). For one thing it takes account of much (Z) activity that (W) misses. Second, since it is not scored in discrete units, as is necessary in the case of (W), it makes it possible to take account of intermediate values and continuous distributions, and is thus a more flexible measure. Third, it is an index of the intellectual energy as such, irrespective of the kind of intelligence that S uses, something that does influence (W). Thus, (Z) is a more accurate representative of the intelligence function per se.⁸

Beck made a quantitative treatment of Rorschach responses in which the subjects combined the test figures into larger units. He found that there was an organizing W activity in which the responses were not W. A total of 2,215 responses were obtained from a group of very superior persons and examined for this organizing activity. There were four types of organization responses occurring with sufficient frequency to allow the establishment of a sigma value for each kind in the ten figures. These are:

8. Ibid., p. 12.

- (a) Wholes
- (b) Adjacent details seen in a relation to each other
- (c) Distant details so seen - distant details being any two or more that are separated, whether by white space or by other solid details
- (d) White spaces organized with fill in elements.⁹

A response is scored organization, or Z, when two or more portions of the figure are seen in relation to one another, and when the meaning perceived in the combination, or in any of the component portions, obtains only from the fact of this organization.¹⁰

In scoring Z, the rules are:¹¹

1. All W is Z
2. Any two or more component elements of a figure may be organized into relationship. The unit may then consist of two or more D, D with Dd, Ds or Dds, or any combination of these.
3. The meaning reported by S must belong to the larger organized material.
4. All Z must be in responses determined in part at least by form. Responses determined entirely by color, C, or by light values, Y, cannot be Z.
5. The portions organized need not necessarily be external to each other, since subjects will sometimes analyze and resynthesize a figure or detail.
6. Mere presence of contours between two details is not ipso facto evidence of Z. Certain portions of the figure are thus broken up by contours but are frequently selected as units without any Z activity.
7. When two or more kinds of Z occur in the same response, the one of higher value is credited.
8. In those precision alternatives that need to be scored, Z is credited only once.
9. In those descriptive-area responses that are just sufficiently more than description to be scorable, Z is not scored. In all responses, the burden of proof is on the response before it can be scored Z.

9. S. J. Beck, Rorschach's Test (New York: Grune & Stratton, 1944), p. 58, V.1.

10. Ibid., p. 59.

11. Ibid., p. 59.

The numerical values assigned to each kind of Z in each figure are stated in the table below. Beck derived these from the sigma values found in his original study.¹²

Organization (Z) Values in the Ten Figures

Figure	Type of Organization (Z)			
	W	Adj. Det.	Dist. Det.	Solid with S, Ds
1.	1.0	4.0	6.0	3.5
2.	4.5	3.0	5.5	4.5
3.	5.5	3.0	4.0	4.5
4.	2.0	4.0	3.5	5.0
5.	1.0	2.5	5.0	4.0
6.	2.5	2.5	6.0	6.5
7.	2.5	1.0	3.0	4.5
8.	4.5	3.0	3.0	4.0
9.	5.5	2.5	4.5	6.0
10.	5.5	4.0	4.5	6.0

The organization total varies directly as the level of intelligence. The highly superior individual is apt to have a (Z) score of 80 or 100. The individual with high or superior intelligence will have a (Z) score total of 45 or more. The average range will be between 30 and 45 in the (Z) score total. Feebleminded individuals are apt to have as little as 10, 5, in (Z) total.

As in the Klopfer-Kelley method, the Beck method also utilizes the (F-plus) per cent or the form accuracy level as a factor in interpretation of intelligence. The greater the intellectual capacity of the individual, the higher his (F-plus) percentage. The maximum should be 85 to 90 per cent. The minimum should be 60 per cent. The higher the intelligence potential of an individual the closer to the maximum percentage he should approach.

12. Ibid., p. 208.

The variety of content shows intelligence throughout its range and through the animal (A) percentage. The intelligent individual will have a greater range of responses, more of the responses being outside the animal, human, anatomical, and geographical groups. The range is confined mainly to the animal and human groups in the individuals of lower intelligence. This range within the variety of content is partially expressed through the animal (A) percentage. The animal percentage is the per cent of animal responses out of the total number of responses within the content.

The individual of low intelligence will have few different categories and a high animal (A) percentage, 50 per cent or even higher as the intelligence level drops below the average. The percentage of animal forms varies inversely as the intelligence level. Some of the feebleminded individuals have 100 per cent animal (A) responses.

The number and quality of movement (M) responses is a determining factor in the intelligence interpretation. The superior individual will have five or more movement (M) responses. They will be usually the first responses to a card, and of good form. As the intelligence level drops, so does the number and quality of the (M) response. The individual with average or low average intelligence will produce from two to four (M) responses. The quality of these responses will most likely be average, with the response appearing in the middle or toward the last in that particular group of responses.

Another important factor in the interpretation of the capacity of the individual is the number and quality of the original (O) responses.

The very superior individual will produce 30 per cent, and higher, original (O) responses. These will be of good form. The per cent of original (O) responses varies directly as the intellectual capacity of the individual. The individual of low intelligence will produce very few, and the form will be very poor.

The response total shows capacity of the individual by the total or quantity of responses for the ten cards. The individual with a higher intellectual capacity will produce a greater number of responses. He has a wider range of interests and knowledge. Individuals of lower intelligence have fewer interests and therefore produce a smaller number of responses because of this lack of available categories.

In summary, both the Klopfer-Kelley and the Beck methods interpret the same factors in their interpretation of the intellectual capacity. The interpretation of each factor by both methods varies slightly. Concerning the whole (W) response, Beck differs slightly with the Klopfer-Kelley method in that in the superior and average levels the individual must have greater (W) quantity to qualify for that particular level. Klopfer and Kelley state the individual must have seven to ten whole (W) responses to be classified in the superior level. Beck states that there must be ten or more whole (W) responses to be classified in the superior level. Beck, for the average level, calls for seven to nine whole (W) responses. The Klopfer-Kelley method states there must be two or three of superior construction plus others of average or popular construction.

Concerning the movement (M) response, there is a small difference. Both methods call for approximately the same quantity of (M), but the Klopfer-Kelley method states that some cards are more difficult than others on which to produce (M) responses.

The main and most important difference is the addition of the organization (Z) score by Beck. This organization is noted in the Klopfer-Kelley method, but is not scored in any definite form. Beck scores the organization (Z) score and can arrive at a definite score that can be included in the interpretation.

The (F-plus) per cent, animal (A) per cent, and the original (O) per cent are the same in both methods. They agree on the quantity and quality of the responses in the different factors. The following table is a summary of both methods:

TABLE I

Klopfer-Kelley	(SUPERIOR) or 3	Beck
W	7-10 of superior const. plus others of average or better.	10 plus, on cards III, IX, and X and must be of good quality.
M	5 plus, on cards V, VII, X, and some on cards I, IV	5 plus, with originality and good quality.
F+	90 to 95%	90 to 95%
A%	0 to 20%. 25% outside of H, Hd, A, Ad categories.	0 to 20%
O%	25 to 30% and plus of good quality	25 to 30% plus, and of good quality
Z		45 plus
(AVERAGE) or 2		
W	2 or 3 of superior const. plus other of popular type.	7 to 9 on cards I, IV, V, VI, and some on II and VIII.
M	3 to 5 on cards I and IV and some on II, VII, and IX.	5 plus
F+	80 to 90%	80 to 90%
A%	20 to 30%	20 to 30%
O%	20 to 30%	20 to 30%
Z		25 to 40
(LOW AVERAGE) or 1		
W	4 to 6 on cards I, IV, V, and VI.	No W's higher than the organized popular W's.
M	1 to 2 on card III, or on II, VII, and IX	2 to 4
F+	70 to 80%	70 to 80%
A%	35 to 40% plus	35 to 40% plus with small range in category.
O%	0 to 20%	0 to 20%
Z		10 to 25

V. ILLUSTRATION OF METHOD AND INTERPRETATION

The level of intelligence for the forty cases ranged from a low I. Q. of 99 to a high I. Q. of 133. This range of intelligence was divided into three levels; superior, average, and low. The superior level ranged from an I. Q. of 120 to an I. Q. of 129. The average level ranged from an I. Q. of 110 to an I. Q. of 119. The low level ranged from an I. Q. of 100 to an I. Q. of 109.

The three levels were given point ratings. The superior level was designated by three points, the average by two, and the low level by one point.

Each separate factor used in the interpretation, such as (W), type of (W), (M), and etc., was rated as superior (3), average (2), or low (1), depending on the actual level of the factor as rated by each of the methods. The total number of points for all the factors was then divided by the number of factors used in the interpretation, by each method. The resulting score placed the individual in a superior level between 2.5 and 3.5, and the average level between 1.5 and 2.4, or a low level between .5 and 1.4. Any point between 2.5 and 3.4 indicated a superior (3) level of intelligence. Any point between 1.5 and 2.4 indicated an average (2) level of intelligence. The low (1) level of intelligence was indicated by any point falling between .5 and 1.4.

The following case, No XXVII, will be used as an example of interpretation by the two methods. The responses and scores made by this case are as follows:

- | | | | |
|------|----|---|---------------|
| I. | 1. | Looks like an animal skull with eyes and nose opening. | W Fp A Z 4.0 |
| | 2. | A halloween mask. | W Fp Ob Z 1.0 |
| | 3. | Two old long nosed women on each side. | D Fp H |
| | 4. | Form of a human body in mid-section | D Fp H |
| II. | 1. | Two bears with their noses together. | W Fp A Z 3.0 |
| | 2. | A cross section of a spinal column. | W Fp At Z 4.5 |
| | 3. | Resemblance of a pin point. | D-d Fp Ob |
| | 4. | A couple of thumbs sticking up. | d Fp Hd 0 |
| | 5. | Couple African natives. | Dd-d Fp Hd |
| III. | 1. | A couple dancing jitterbugs. | W M H Z 3.0 |
| | 2. | Leg of an animal. | D F- Ad |
| | 3. | Bow tie formation. | D Fp Ob |
| IV. | 1. | An undersea fish, or crawdad head. | D Fp A |
| | 2. | A cloud formation, the different shades. | Dd-d Ch Cl |
| | 3. | A microscopic slide with clusters of cells. | D-d Ch At |
| V. | 1. | A bat. | W Fp A Z 1.0 |
| | 2. | Rear end of a donkey. | Dd-D F- Ad 0 |
| | 3. | Head of a snail. | D Fp Ad |
| | 4. | Small formation of a devils head. | Dd-d Fp Hd |
| VI. | 1. | The cat in the comedy, the one always out in the alley. | D Fp A |
| | 2. | I see a hooded figure. | Dd-D Fp H |
| | 3. | I see the head of a Chinese | D-d Fp Hd 0 |
| | 4. | A design, Indian design. | D Fp Ob |

VII.	1.	A baboon, with the mouth open.	D F- Ad	
	2.	Portions of a cottontail, both legs of him.	D Fp Ad Z 1.0	
	3.	I see a doll face.	Dd-d Ch Hd	0
VIII.	1.	A bear.	D Fp A	
	2.	Two people standing here.	Dd-d Fp H	0
	3.	See a dog's head.	Dd-d Fp Ad	
	4.	Backbone and ribs of something	Ds-d Fp At	
	5.	The whole thing looks like a pattern designed for a dress.	W Fp Art Z 4.5	
IX.	1.	There is a bust of a man.	D Fp Hd	
	2.	I see a face in there too.	D Fp Hd	
	3.	I see the head of an anteater.	Dd-D Fp A	0
	4.	A "Buck Rogers" gun.	Dd-d F- Ob	
X.	1.	I see some more of the spinal column and nerve neurons.	D-d Fp At	
	2.	A four speed governor.	D-d Fp Ob	
	3.	Head of a ram.	D-d Fp Ad	
	4.	An old gossip.	Dd-D F-Hd	
	5.	I see a couple of clouds.	D Fp Cl	
	6.	A couple of crickets.	D Fp A	
	7.	A flying deer.	D-d M A	
	8.	A tobacco worm.	Dd-d Fp A	0
	9.	Roots of a young tree.	Dd-D F- Fl	
	10.	A body.	Dd-d Fp H	
	11.	A French poodle.	Dd-D Fp A	

Summary rating according to Klopfer-Kelley Beck

No. of W is 7	$\frac{3}{3}$	3	$\frac{3}{3}$	3
No. of superior W is 5				
No. of M is 2		1		1
A% is 39%		2		2
F plus per cent is 86%		2		2
O% is 15%		2		2
Z score is 22				2
		<hr/>		<hr/>
		2/10/2.0		6/12/2.0

The resulting ratings for both methods are 2.0, and fall between 1.5 and 2.4. This places them in the average (2) level. The actual I.Q. for this particular is 124, which is also in the average (2) level for the group used. This case shows a close relationship.

The second example case, No. III, is an example of a subject with a particularly high intelligence level. The I. Q. was 133. This case shows disagreements in that neither method of interpretation, by the quantitative method, places this individual in the intellectual level to which he belongs. The responses and scores for this case are as follows:

- I. 1. A figure that resembles a bat. The legs, and odd shaped head. Legs are extended. W Fp A Z 1.0
- II. 1. Two animals that look like tigers, standing on their front legs with their heads together and their tails in the air. Heads are red as if they had been in a fight. There are several blood stains on their bodies. Their bodies are bulky and legs are short. W Fp A Z 4.5
- III. 1. Two figures, a combination of a bird and a man. Standing on their legs and wings are extended to a basket between them. W Fp H Z 5.5

2. Two red spots, some sort of animal like a monkey suspended by his tail. D Fp A
3. The middle red spot is a bow tie. D Fp Ob
- IV. 1. A skin rug made from an animal, a short stubby tail but quite large in diameter. The hind legs are very heavy and powerful. The rear portion is smaller and not so muscular. The head was long and slender and perhaps had two tusks covered with fur or skin. W Fp A Z 2.0
- V. 1. An insect, with small head and large wings. There are two feelers on the head and tail is split. On the end of the wing are two feelers. It must be slow flying creature. W Fp A Z 1.0
- VI. 1. This is an end view of two wall shelves. The design on the end of the shelf is rather rough, and there is a face on the side view of the shelf. The face has a rough, long, and protruding chin. The upper portion is where the shelf hangs on the wall and the design is delicate and unattractive. W Fp Ob Z 3.5 0

VII. 1. Two small children in the costume of a white rabbit, costume is made of white towel. Each figure has an arm tied and the other is free. The free one is abnormally short for a child. The two figures are facing each other and they are laughing at each other for being tied in the bag.

W M H Z 3.5

VIII. 1. Two animals, two muskrats on either side. Each one is standing on a mound of dirt. The animals have the body of a rat, long tail and four legs. They are peering over a mound of dirt. Could be a rock of some sort as it is not the color of ground.

D M A Z 3.0

IX. 1. Two figures, women, each has another person on their back. The persons being carried are children wearing masks, very hideous. The ladies are bent over as if carrying a heavy load. They are walking away from each other and the ground is red clay.

W M H Z 5.5 0

- X. 1. Some sort of sea animal, a lobster with a number of legs and pinchers.
2. Heads of imaginary persons, no arms or legs, they are facing each other and blowing something up.
3. Poodle dogs with heads in the air as if howling. Legs extended and hair needs trimming.

D Fp A

D M Hd

Dd-d Fp A

4. dogs, lying down and resting. Dd-d Fp A
5. Insect trying to bite the figure without arms and legs. D Fp A Z 4.0
6. Skins that bugs have shed. D F- A
7. Two odd shaped insects facing each other with their mouths open, have three legs. Look angry. D Fp A
8. Candle in candelstick holder and three legged insects are guarding it. D Fp Ob Z 4.0
9. The green animals are caught in a lobster's pinchers. The small animal is trying to free itself. D M-FM Z 4.0

	Rating according to <u>Klopper-Kelley</u>	<u>Beck</u>
No. of W is 8	3	3
No. of sup. W is 8	$\frac{3}{3}$	$\frac{3}{3}$
No. of M is 5	3	3
A% is 60%	1	1
F plus % is 93%	3	3
O% is 10%	1	1
Z score is 46		3

5/11/2.2

6/14/2.3

The individual showed an actual I.Q. of 133 on the Wechsler-Bellevue Adult Intelligence Scale, which would place him in the superior (3) level. The Klopper-Kelley and Beck methods place him in the average (2) level.

The third case, Case No. XIV, is an example of a subject with a low intelligence level. In this case there is also disagreement between the level of intelligence as determined by the Wechsler-Bellevue and the level as determined by the Klopper-Kelley and Beck methods. The responses and scores for this case are as follows:

- | | | | | |
|-------|----|---|--------------|----|
| I. | 1. | Looks like a bat in the middle. | D Fp A | |
| | 2. | A butterfly too. | D F A | |
| II. | 1. | Two bears kissing each other. | W M A Z 4.0 | |
| | 2. | Two little sheep sucking from a bottle with a nipple on it. | W M A Z 4.0 | |
| III. | 1. | Looks like a butterfly. | D Fp A | |
| | 2. | Two men tipping their hats to each other. | W M H Z 3.0 | |
| | 3. | The two red things look like birds falling through the air. | D M A | 0 |
| IV. | 1. | Looks like it could be the hide of a tiger. | W Ch A Z 2.0 | |
| | 2. | Looks like a fish. | D Fp A | |
| V. | 1. | Looks like a bat. | W Fp A Z 1.0 | |
| VI. | 1. | Looks like two pelts sewed together. | D Fp A | |
| VII. | 1. | Looks like a dog cut in half, two of them. | D Fp A Z 1.0 | |
| | 2. | Some sort of insect. | D F- A | |
| VIII. | 1. | Couple of rats on something, sneaking up. | L M A | |
| | 2. | A bunch of bones or ribs of some animal. | D Fp At | |
| IX. | 1. | A chicken embryo still in the sack. | C Ch At | 0- |
| X. | 1. | Two owls right there. | D F- A | |
| | 2. | Some darn sea animals. | D F A | |
| | 3. | A couple of high-powered dogs right there. | Dd-d Fp A | |
| | 4. | Looks like a wishbone right there. | D-d Fp At | |

Rating according to <u>Klopfer-Kelley</u>	<u>Beck</u>
No. of W is 5	$\frac{2}{2}$
No. of sup. W is 2	$\frac{2}{2}$
No. of M is 5	3
A% is 80%	1
F plus % is 75%	1
O% is 10%	1
Z is 15	1
5/8/1.6	6/9/1.5

This individual has an I. Q. of 100 on the Wechsler-Bellevue Adult Intelligence Scale, which would place him in level (1). The Klopfer-Kelley and Beck methods place him the average (2) level. If there had been a close relationship between it and the Beck and Klopfer-Kelley scores, his rating would have been below 1.5.

In most cases involving a superior or high I. Q. there was a relatively close relationship between the Wechsler-Bellevue I. Q. and the Rorschach I. Q., but it was not so close for individuals in the lower I. Q. levels. There was a tendency for the Rorschach score to give a higher rating to these cases than the Wechsler-Bellevue score.

VI. RESULTS

As previously stated forty Rorschach tests were administered. Each Rorschach test was scored and interpreted for intelligence twice, once by the Klopfer-Kelley method and once by the Beck method. The Wechsler-

Bellevue I. Q.'s and the quantitatively interpreted Klopfer-Kelley
and Beck scores are as follows:

<u>Case</u>	<u>K-K score</u>	<u>Beck score</u>	<u>W-B actual I.Q.</u>
1.	2.2	2.5	128
2.	2.2	2.5	128
3.	2.2	2.3	133
4.	2.0	1.5	111
5.	2.0	1.5	115
6.	1.1	2.0	117
7.	3.0	2.0	127
8.	2.5	2.5	117
9.	1.7	.75	114
10.	2.0	3.0	125
11.	1.1	.75	119
12.	2.7	2.0	128
13.	2.1	1.0	123
14.	1.6	1.5	99
15.	2.1	1.5	124
16.	2.2	2.5	127
17.	1.7	2.0	125
18.	1.7	1.0	116
19.	1.7	1.0	116
20.	2.0	2.0	117
21.	1.5	1.0	116
22.	1.1	2.0	100
23.	1.1	.75	99
24.	2.2	1.5	125
25.	2.5	2.5	126
27.	2.0	2.0	124
28.	2.7	3.0	12
29.	2.0	2.5	123
30.	2.5	2.0	124
31.	1.7	1.5	117
32.	2.0	1.5	113
33.	1.0	.75	114
34.	2.2	2.5	128
35.	2.2	3.0	119
36.	1.7	.75	115
37.	2.7	2.6	132
38.	2.2	2.5	127
39.	1.7	2.0	125
40.	2.0	1.5	115

Correlation coefficients were computed between the Klopfer-Kelley and the Wechsler-Bellevue, the Beck method and the Wechsler-Bellevue, and the Klopfer-Kelley and the Beck method. The results of these computations are as follows:

Klopfer-Kelley and W-B

r .62
PEr .04
t 6.197

Beck and W-B

r .57
PEr .07
t 5.20

Klopfer-Kelley and Beck

r .47
PEr .008
t 3.28

In order to find the reliability of the correlations the following formula was followed:¹³

$$R_{rr} = R_{23} - \frac{R_{12}R_{13}(1-R_{23}^2 - R_{12}^2 - R_{13}^2 - 2R_{12}R_{13}R_{23})}{2(1-R_{12}^2)(1-R_{13}^2)}$$

Substituted into the formula, the formula reads as follows:

$$R_{rr} = .47 - \frac{(.57)(.62)(1 - .47^2 - .57^2 - .62^2 - 2(.57)(.62)(.47))}{2(1 - .57^2)(1 - .62^2)}$$

$$R_{rr} = .120$$

The formula for finding the standard error of the difference between two correlations is as follows:¹⁴

$$SE_d = \sqrt{\frac{2-2R_{rr}}{N-3}} = \sqrt{\frac{2-2(.129)}{37}} = .127$$

The (t) score was found by dividing the standard error of the difference by the actual difference. This was found to be .36. This (t) score of .36 was found to be not significant at the .05 level.

13. Q. McNemar, Psychological Statistics. New York: John Wiley Wiley & Sons, Inc., 1949., p. 124.

14. Ibid., p. 125.

The correlation between the Klopfer-Kelley method and the Beck method was also computed by the coefficient of contingency. The results are as follows:

Klopfer-Kelley

c .52

Corrected c, .65

Beck

c .53

Corrected c, .66

Klopfer-Kelley and Beck

c .41

Corrected c, .50

The corrected contingency coefficients compare closely with the correlation coefficients when they are corrected for the number used in the correlations.

VII CONCLUSION

The Klopfer-Kelley and Beck methods of intelligence interpretation were correlated with the Wechsler-Bellevue Adult Intelligence Scale. Both correlation coefficients were found to be significant. The significance of the difference was then computed. It was found that the obtained difference between the correlation coefficients for the Klopfer-Kelley and Beck methods was not significant.

The conclusion reached from these computations is that the Klopfer-Kelley and Beck methods of intelligence interpretation from the Rorschach Test are equally good when the interpretations are made by a quantitative method.

This conclusion is subject to certain limitations. The Rorschach Test and the Wechsler-Bellevue Tests were given and scored by one individual, allowing a subjective element to enter into the study. Efforts were made to keep this at a minimum by scoring and interpreting the Rorschach tests without previous knowledge of the actual I.Q. of the case. This subjective element was also counteracted by using the quantitative method of interpreting the Rorschach tests. The conclusion is limited also in that a small number of cases were used and these cases were taken from a college group, which has an intelligence level above that of the normal population. However, as conducted, this study shows that there is no difference between the Klopfer-Kelley and Beck methods of interpreting intelligence from the Rorschach Test by a quantitative method.

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