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A Concurrent Validity Study of the Acting Out Score of the Hand Test

Arthur Dosch

Western Kentucky University

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Dosch,

Arthur J.

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A CONCURRENT VALIDITY STUDY OF THE
ACTING OUT SCORE OF THE HAND TEST

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Presented to

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Western Kentucky University

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In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Arthur J. Dosch

March 1975

A CONCURRENT VALIDITY STUDY OF THE
ACTING OUT SCORE OF THE HAND TEST

David A. Shield
Director of Thesis

C. Clinton Payne

Harry R. Robe

Approved APRIL 11, 1975
Date

Elmer Gray
Dean of the Graduate College

Approved May 21, 1975
Date

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TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION.....	1
II. REVIEW OF THE LITERATURE.....	4
III. PROBLEM.....	10
IV. METHOD.....	12
Subjects.....	12
Instrumentation.....	12
Procedure.....	16
Analysis.....	17
V. RESULTS.....	19
VI. DISCUSSION AND IMPLICATIONS.....	24
REFERENCES.....	28

LIST OF TABLES

TABLE	PAGE
1. Comparative Figures for High and Low Scoring AOS..... Groups on the Total Hostility Factor of the BD.	20
2. Comparative Figures for High and Low Scoring AOS..... Groups on the General Hostility Factor of the HDHQ.	21
3. Comparison of High and Low Scoring BD Groups on..... the HDHQ.	23

A CONCURRENT VALIDITY STUDY OF THE
ACTING OUT SCORE OF THE HAND TEST

Arthur J. Dosch

March 1975

33 pages

Directed by: David Shiek, C. Layne, and H. Robe

Department of Psychology

Western Kentucky University

In an investigation of the concurrent validity of the Acting Out Score (AOS) of the Hand Test, the AOSs of 32 normal college students were compared with the scores they obtained on two clinically popular self-report criterion measures of hostility and aggression, the Buss-Durkee (BD) and the Hostility and Direction of Hostility Questionnaire (HDHQ). The AOS did not significantly differentiate between high and low scoring groups on either the HDHQ or BD although both criterion measures were found to be significantly related.

CHAPTER I

INTRODUCTION

Personality assessment techniques have taken many approaches and have long been a major tool for clinicians of varied orientations. Mental health professionals frequently predict, diagnose, and establish prognoses in accordance with the results of their clinical assessment procedures (Bergler, 1946; Dana, 1962; Gluck, 1955b). Often these professionals rely on projective techniques in assisting them to reach their decisions. Aware and concerned about their dependence on these methods, many of these professionals have made serious attempts to develop quantifiable, reliable and valid projective assessment procedures.

Authors of projective techniques have employed inkblots, cartoons, vaguely defined pictures, incomplete sentences, play material and drawings as the relatively unstructured, yet standard, stimuli in attempts to elicit data about the individual's characteristic modes of behavior. Such ambiguous stimulus materials supposedly place minimal restrictions upon manner of response, thus allowing the individual's enduring dispositions to determine his reply. This

general assumption underlying all projective testing has been formally stated by Lindzey (1961): "If an individual is presented with a stimulus situation permitting variable responses, the particular responses he emits will reflect his characteristic response patterns and tendencies to respond [p. 146]." Thus confronted with an ambiguous stimulus, the individual is hypothesized to respond in terms of his unique inner needs and way of perceiving his environment.

While traditionally projective techniques are hypothesized to assess responses which relate to deeper personality trends of which the subject is unaware, recent approaches tend to be more behavioristic in their emphasis on response sampling. Of particular interest to researchers in recent years has been the relationship between projective content and manifestations of hostility and aggression, one of the major dynamic forces which the clinician may be called upon to assess (Gluck, 1955b). In this context, the individual's responses to the various ambiguous stimuli are believed to contain elements of both aggression and hostility which will subsequently lead to predictions about his behavior. While investigations with a wide range of projective techniques have been undertaken to demonstrate the validity of this basic relationship, there has been a great deal of diversity in the findings reported (Megargee & Cook, 1966).

Although supportive research has been limited, a projective technique that has demonstrated some potential in predicting hostile-aggressive behavior was the Hand Test (Wagner, 1962a). This projective technique was constructed with the specific intent and indicies to predict hostile-aggressive behaviors. The present study investigated this aspect of the concurrent validity of the Hand Test. Specifically, the relationship between the amount of hostility expressed in the Hand Test protocol and the amount of hostility which the subjects displayed on two criterion measures of hostility was investigated.

CHAPTER II

REVIEW OF THE LITERATURE

Numerous researchers, using assorted projective techniques including the Rorschach, the Thematic Apperception Test, the Make A Picture Story, and the Holtzman Inkblot Test have attempted to investigate the relationships between protocol content and aggressive action tendencies (Wittenborn, 1950; Rosenzweig, 1950; Klopfer & Kelley, 1946; Gluck, 1955a, 1955b; James & Mosher, 1966; Megargee & Cook, 1966; Finny, 1955; Wolf, 1957; Young & Higginbotham, 1942; Elizar, 1949). Generally, investigations conducted with these established techniques have produced conflicting and inconsistent results. In their reviews of research concerning the relationship between the hostile content of Thematic Apperception Test and Rorschach protocols and behavioral aggression, Buss (1961) and Hafner and Kaplan (1960) cited not only a substantial number of studies concluding no significant relationship but, also, in a few instances, document investigations in which relationships were shown to be inverse rather than direct. Moreover, Dana (1962) has pointed to projective research shortcomings. In addition to the diversity in reported findings, he has

noted that the use of different test variables, different criterion measures, and lack of replications has made comparisons of efficacy essentially impossible, even among research conducted with the same instruments.

This difficult problem of assessing aggressive behavior has received renewed attention with the introduction of a relatively new projective technique, the Hand Test (Wagner, 1962a). The Hand Test is a semi-structured projective technique utilizing as the structured stimuli pictures of hands in relatively unstructured poses. Thus, the individual is allowed variations, yet his responses are restricted to definable and classifiable descriptions of hand actions and attitudes. It is Wagner's rationale that hands, because of their indispensable role in facilitating the individual's interaction with his environment, provide a highly appropriate medium for the projection of action tendencies. The test consists of ten 3" X 5" cards of which nine contain a single drawing of a hand in an ambiguous position. Similar to the Thematic Apperception Test, the tenth card is blank. The cards are presented to the subject one at a time in a standard order and the subject is asked "What might this hand be doing?" Responses are classified into one of 15 categories according to content. The scoring categories are: Affection (AFF), Dependence (DEP), Aggression (AGG), Acquisition (ACQ),

Active (ACT), Passive (PAS), Tension (TEN), Cripple (CRIP), Fear (FEAR), Description (DES), Bizarre (BIZ), and Failure (FAIL). The frequency of occurrence of variations of these scoring categories provides the summary quantitative scores. The test takes approximately ten minutes to administer and another ten minutes to interpret and score. In addition to the obvious advantage in economy of time, energy, and expense over more conventional projective techniques, Wagner has stated that the instrument's brevity, its minimal need for intellectual effort, and its non-threatening nature make it well suited for testing withdrawn and/or hostile clinical subjects.

The Hand Test has shown promise as a general diagnostic instrument. Wagner has used the technique to differentiate significantly between a known clinical group of 50 schizophrenics and a group of 50 normal college students (Wagner, 1961), between neurotics and a relatively intact group of schizophrenics (Wagner, 1962b), and between neurotic males with marked overt psychosexual problems and a control group of neurotics without pronounced sexual aberrations (Wagner, 1963). Suggesting utility as a general psychiatric screening index, the Hand Test pathology score correlated significantly with staff ratings of pathology for 50 in-patients at a receiving hospital (Wagner, Darbes & Lechowick, 1972).

A unique feature of the Hand Test is a supplementary

scoring aspect, the Acting Out Score (AOS). Derived from five of the 15 basic scoring categories, it has been purported to have special reference to the prediction of overt aggressive behavior as well as to revealing the individual's emotional state (Wagner, 1962b). Concurrent validation of the AOS appears supported but has been essentially derived from comparisons of samples from populations hypothesized to differ with respect to acting-out or overt-aggressive behavior.

In an initial study (Bricklin, Piotrowski, & Wagner, 1963), a typical adult acting-out group consisting of 59 prisoners and 17 hospitalized psychiatric patients was compared to a typical non-acting out group composed of 20 indigents, 20 hospitalized psychiatric patients and 32 normal adults. The researchers found that the AOS significantly differentiated between the two groups. Wagner and Medvedeff (1963), using the AOS to discriminate between 35 identified aggressive and 35 non-aggressive undifferentiated schizophrenics, showed significant differences between the two groups. Attempting to replicate this experiment, Drummond (1966), using more stringent criteria for aggressive behavior, failed to discriminate between aggressive and non-aggressive English undifferentiated schizophrenics. This failure to cross validate the findings of Wagner and Medvedeff should be considered in light of the effects of cross cultural response

patterns. In a normative and comparative study of the Hand Test using normal and delinquent Australian children, Oswald and Loftus (1967) found, in addition to significant differences in acting out behavior between normal and delinquent children (as assessed by the AOS), that there was a significant tendency for the Australian children to produce culturally different response patterns. Such findings would tend to suggest caution in interpretation and expectancies for cross-cultural studies and replications, a problem which has been inherent with many testing instruments.

With juvenile delinquents, Wagner and Hawkins (1964) used the AOS to discriminate between assaultive and non-assaultive delinquent males, correctly categorizing 47 out of the 60 subjects. In a pilot study conducted by Wetsel, Shapiro, and Wagner (1967) using recidivism as the criterion, the AOS significantly differentiated and classified recidivists from non-recidivists, correctly identifying 66% of the delinquents. Azcorate and Gutierrez (1969) significantly discriminated between those juvenile delinquents who acted-out and those who displayed good institutional adjustment. Likewise, Sarbin, Wenk, and Sherwood (1968) successfully discriminated between assaultive and non-assaultive offenders involved in a parole program. In contrast to the majority of concurrent validation studies was an investigation performed by Higdon and

Brodsky (1972). Using normal college students as subjects, the AOS failed to reflect significantly the effects of experimentally induced stress or to correlate significantly with the Wigen's MMPI Hostility Scale which purportedly measures the same construct. Higdon and Brodsky concluded that their results did not add to the empirical framework of the Hand Test. However, they, as well as others (e.g., Murstein & Wiens, 1963), acknowledged the complex nature of the construct of aggression and recognized the possibility (1) that their criterion measure might have been measuring a different construct, or perhaps, a different level of the same construct, and (2) the inability of their assessment technique to measure aggression under the artificial experimental conditions.

CHAPTER III

PROBLEM

The concurrent validity of the Hand Test has generally been supported with respect to its ability to discriminate between pathological populations hypothesized to differ with respect to basic aggressive orientation (Bricklin, Piotroski, & Wagner, 1962; Wagner & Medvedeff, 1963; Wagner & Hawkins, 1964; Wetsel, Shapiro, & Wagner, 1967; Azcorate & Gutierrez, 1969; Sarbin, Wenk, & Sherwood, 1968). However, research concerning systematic validations of the Hand Test's ability to identify individual differences within normal populations was lacking.

In the only published study attempting to validate the AOS with normals, Higdon and Brodsky (1972) were unable to substantiate the Hand Test's discriminative abilities. Moreover, as emphasized by Higdon and Brodsky, "Concurrent validation or comparison of Hand Test scores on tests measuring similar constructs is lacking [1972, p. 363]." While the criterion measure employed in the Higdon and Brodsky study was purported to distinguish between greater and less amounts of hostility within normal college males (Wiggins, 1966), the

criterion's reliability and validity was essentially unsupported by empirical research. The present study was concerned with concurrent validation of the AOS variable of the Hand Test with two clinically popular self-report criterion inventories having supported reliability and validity, using normal college students as subjects (Ss).

CHAPTER IV

METHOD

Subjects

The subjects (Ss) were 32 Western Kentucky University male undergraduates who volunteered to participate in the experiment in order to receive extra class credit or to fulfill requirements for a general introductory psychology course. The Ss were solicited after the second week of classes to allow for initial student adjustments. The mean age for the sample was 20.8 years. The modal education level was freshman. The Ss were predominately single, white, and Baptist by faith.

Instrumentation

The Hand Test was administered under the standard instructions as outlined in the Hand Test Manual (Wagner, 1962a). Each S's responses to the 10 stimulus cards were placed in one of the 15 scoring categories in order to compute the Acting Out Score (AOS) by subtracting algebraically the sum of the S's responses falling into the categories of Affection (AFF), Dependence (DEP), and Communication (COM) from the sum of responses in the categories Direction (DIR) and Aggression (AGG)

(Wagner, 1962a). The AOS is based on the hypothesis that the more the "undersocialized" interpersonal action tendencies of AGG + DIR, which represent the individual's disregard and unconcern for the rights of others, exceed the "socialized" action tendencies of AFF + DEP + COM, representing concern and respect for others, the greater the expectancy of overt aggressive behaviors.

While the AOS was stated to reflect differences in the amount of overt-aggressive behavior between different individuals, the variable presents limitations in terms of the legitimacy of employing an interval measurement scale. Because of the complex nature of the dimension involved and the variability and subjectiveness of the Ss responses, there was no indication of either how much or how far apart one individual's response was from that of another. As it was assumed unrealistic to consider that one AOS unit was equal to another AOS unit, the most stringent assumption concerning the nature of the data was that it was ordinal.

One of the concurrent validity measures used in the study was the Buss-Durkee Hostility Inventory (BD; Buss & Durkee, 1957), a self-report questionnaire designed to measure various modes of the expression of hostility. It was a paper and pencil, true-false inventory consisting of 75 items individually devised or borrowed from a variety of sources. Developed

by standard test construction techniques of item analysis, factor analysis and the collection of norms, the items are organized on the basis of Buss and Durkee's rationale into various components of the general construct of aggression-hostility. A global or total hostility value is computed by summing all of the 75 items endorsed in the appropriate directions.

The BD has been shown to correlate significantly with other instruments purported to measure the same construct including the Elizur scoring criteria for hostile content of Rorschach protocols and the Iowa Picture Interpretation Test (Buss, Fisher, & Simmons, 1962), the 15 item Aggression Scale of the Waterhouse and Child Psychological Insight Test (WCA) and Bendig's short form of the Taylor Manifest Anxiety Scale (Sarason, 1962), and a British instrument, the Hostility and Direction of Hostility Questionnaire (HDHQ; Clark, 1970). In addition, using the nine highest and nine lowest scorers on the BD out of a sample of 115 males, Knott (1970) was able to discriminate significantly between Ss subjected to artificially induced hostility using rate of retaliation, number and intensity of shocks administered to a confederate of the experimenter as his criterion. Similarly, Liebowitz (1968) obtained a significant positive correlation between Ss ability to role-play aggression (as assessed by four judges) and total BD

scores.

The other concurrent validity measure used in the study was the Hostility and Direction of Hostility Questionnaire (HDHQ). Developed by Caine, Foulds and Hope (1967), the HDHQ was "designed to sample a wide range of possible manifestations of aggression, hostility or punitiveness [Philip, 1968, p. 283]." The rationale for this instrument lies in the theoretical approach to hostility of Foulds (1965) who relates different manifestations of hostility to different forms of psychiatric disorders. The HDHQ consisted of 51 true-false items from the Minnesota Multiphasic Personality Inventory (MMPI) which were arranged into subscales which measure different aspects of hostility. By summing the individual subscales a General Hostility factor was obtained.

Validation of the instrument has been attempted indirectly and is based on two assumptions. First, "that psychotics have more aggression than neurotics, who in turn have more aggression than normals [Caine, Foulds & Hope, 1967, p. 9]", and secondly, with regard to direction of hostility, that paranoid patients would be extrapunitive as compared to neurotics who would be intropunitive. These assumptions have received some support by investigations examining clinical and normal populations assumed to differ with respect to amount and direction of hostility (Philip, 1968; Foulds, 1967). Support for

the HDHQ as a measure of hostility has also been obtained from component analysis (Mayo & Bell, 1971). Although developed within a British population, the effects of cross-cultural factors may be ruled out as the HDHQ has been shown to correlate significantly with a psychometrically similar American instrument, the BD (Clark, 1970).

Procedure

The two criterion measures, the BD and HDHQ, were administered in a group setting. Ss received folders containing either first the BD followed by the HDHQ or the HDHQ followed by the BD. The order of administration of the two instruments was randomly determined. Standardized instructions were printed on the front of each instrument. Both instruments were scored according to the established criteria. The General Hostility factor of the HDHQ was computed for each S and the scores dichotomized as either falling above or below the computed sample mean of 17.03. In a similar fashion the total hostility factor for the BD was computed for each S and scores dichotomized as either falling above or below the sample mean of 31.60.

The Hand Test was administered individually to each of the Ss by a trained examiner. Ss were tested during scheduled periods during which normal school routine prevailed. Each administration was audio-taped after which the S's responses

were transcribed onto summary sheets and categorized by each of two graduate students who served as judges. Judges followed the Hand Test Manual for categorizing instructions. Each worked independently of the other and neither had knowledge of the experimental hypotheses or Ss scores on the criterion measures. Rater reliability was maintained by using a procedure by which, in the event of disagreement between the two trained judges, the disputed response was submitted for interpretation to two additional judges, with the majority consensus accepted. Using the scored protocols, the AOS was computed for each S and scores dichotomized as falling either above or below the sample median of 1.5.

Analysis

The relationship between high and low AOS categories and criterion measures was plotted in two separate 2 X 2 contingency tables between the AOS and the HDHQ and between the AOS and the BD. A chi square procedure was used to test the null hypotheses that (1) there was no significant relationship between scores in terms of hostile content on the AOS of the Hand Test and the total hostility score of the BD and (2) that there was no significant difference between scores in terms of hostile content on the AOS of the Hand Test and the General Hostility factor of the HDHQ. To assess whether the criterion instruments measured the same or similar constructs, it was

secondarily hypothesized that there was no significant relationship between scores in terms of hostile content on the total hostility score of the BD and the General Hostility factor of the HDHQ. As expected frequencies in the chi square analyses were small, Yates' correction for continuity was applied. In all cases an alpha level of .05 was adopted.

CHAPTER V

RESULTS

The comparative figures for high and low scoring AOS groups on the BD are given in Table 1. A nonsignificant X^2 of .00 at the .05 level of confidence upheld the hypothesis that there was no relationship between scores in terms of hostile content on the AOS of the Hand Test and the total hostility score of the BD. In the high AOS group the BD ranged from 16 to 50; in the low AOS group the variation was from 16 to 48. Assuming that 50% of the cases (16 Ss) could be correctly classified by chance alone, the AOS permitted a correct classification of 47%, less than chance.

The hypothesis of no significant difference between scores in terms of hostile content on the AOS of the Hand Test and the General Hostility factor of the HDHQ was accepted. Comparison of high and low scoring AOS groups on the HDHQ yielded a nonsignificant X^2 of .125 at the .05 level of confidence (Table 2). In the high AOS group the HDHQ ranged from 9 to 31; in the low AOS group the HDHQ ranged from 7 to 25. The AOS correctly classified only 56% of the cases (6% beyond

TABLE 1

Comparative Figures for High and Low Scoring AOS
Groups on the Total Hostility Score of the BD

	High BD (>31.6)	Low BD (<31.6)	Total
High AOS (<1.5) N=15	7	8	15
Low AOS (>1.5) N=17	9	8	17
	16	16	32

$\chi^2 = .00; p > .05$

TABLE 2

Comparative Figures for High and Low Scoring AOS Groups
on the General Hostility Factor of the HDHQ

	High HDHQ (>17.03)	Low HDHQ (<17.03)	Total
High AOS (<1.5) N=15	8	7	15
Low AOS (>1.5) N=17	7	10	17
	15	17	32

$$\chi^2 = .125; p > .05$$

expectancy).

Subsequent comparison of high and low scoring BD groups on the HDHQ (Table 3) yielded a X^2 of 8.031 ($p < .01$). The BD correctly classified 78% of the cases (28% beyond expectancy).

TABLE 3
 Comparison of High and Low Scoring
 BD Groups on the HDHQ

	High HDHQ (>17.03)	Low HDHQ (<17.03)	Total
High BD (>31.6) N=16	12	4	16
Low BD (<31.6) N=16	3	13	16
	15	17	32

$$X^2 = 8.031; p < .01$$

CHAPTER IV

DISCUSSION AND IMPLICATIONS

Consistent with the findings of Higdon and Brodsky (1972), the results of this study did not support the conclusion that the Hand Test AOS variable measures hostility or aggression in the same manner as the BD or the HDHQ. While previous research has shown the AOS to be of some use in discriminating between pathological populations which characteristically exhibit high levels of aggressive-hostile behavior (Azcorate & Guitierrez, 1969; Wagner, 1962b; Brodsky & Brodsky, 1967; Wetsel, Shapiro & Wagner, 1967; Sarbin, Wenk & Sherwood, 1968), the present study failed to provide the clinician with justification for using the AOS as a valid index for assessing aggressive tendencies with normal populations, at least within the context of the specific population and measures used.

While there are no obvious explanations for the findings of this study, several hypotheses may be offered as to why the present results failed to establish significant relationships between the AOS and the other measures of hostility and/or aggression. Limitations imposed by the present experimental

design did not allow for control of social desirability of responses. The BD and HDHQ were self-administered in a private environment in which the S remained anonymous. In contrast, the AOS required direct interpersonal interaction with the examiners. As emphasized by Higdon and Brodsky (1972), Ss may have felt constrained to suppress the oral expression of hostility, particularly as the AOS "seems to be optimally sensitive to the subjects immediate psychological state [Wagner, 1962a, p. 26]." This contention is supported by the successful falsification of Hand Test protocols by Ss participating in a study conducted by Singer and Dawson (1969) who concluded that such falsifications could have resulted "because the Hand Test's interpretive rationale is based on content of responses of which Ss, to a large extent, were aware [p. 69]." If such is the case, the presence of an examiner might well influence the respondent's tendency to "fake good" in the testing situation. Socially desirable response sets generated from this source might be controlled by making the Hand Test self-administered. With minimal modification and difficulty, Hand Test instructions could be audio-taped and subjects provided with prearranged sets of stimulus cards. The subject's responses could be audio-taped or, perhaps, even written.

Not only may the present study be unable to measure hostility and/or aggression under the conditions provided by the

design and equipment, but criterion measures may assess either a different aspect or level of the complex construct of aggression. Thus the failure of the AOS to discriminate between high and low scoring groups on either the BD or HDHQ would not be surprising as both instruments are very similar in construction and item content. While the BD and HDHQ are two of the best existing measures of the construct of aggression, they are obviously limited. Behavioral criteria of aggression would appear more beneficial and further research in the area is sorely needed.

A pertinent factor which influenced the experimental outcome as well as being a significant weakness of the Hand Test itself, was the problem of classifying Ss' responses into the "objective" scoring categories. Both the author and scorers consistently experienced the same difficulties encountered by Oswald and Loftus (1967) in making the distinction between responses falling into the scoring categories of DIR, COM or ACT. A response such as "Pointing the directions" may be interpreted as an interpersonal response "involving a presentation, or exchange of information (COM) [Wagner, 1962a, p. 5]" or an interpersonal response "involving influencing the activities of dominating, or directing others (DIR) [Wagner, 1962a, p. 5]." In computing the AOS the distinction is critical as COM and DIR are opposing scoring variables. The Hand Test

manual is of no help. While different scorers may agree, their interpretations remain subjective. The process of asking for clarification from the S often adds little (e.g. "Pointing the directions to a man."), and in view of the possibility of influencing his expression of hostility, is questionable. Before Wagner's contention concerning the AOS can be validated, a more meaningful scoring criteria needs to be constructed.

Wagner's basic assumption that the projective medium of hands reflects the tendency of the individual "to act out in an aggressive way of any kind [Wagner, 1962a, p. 26]" was not supported. Obviously, the validity of the Hand Test does not rest on this study. Much more extensive research with this instrument is needed as well as correction of structural deficiencies. However, for the present, caution should be exercised in interpretations made on the basis of the AOS, particularly with normal populations.

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