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ATTITUDINAL AFFECT AND BEHAVIORAL INTENTIONS

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Communication, Cooperation, and Negotiation in Culturally Heterogeneous Groups
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Abstract

To further delineate the conceptual and operational properties of attitude structure, the relationship between affect and behavioral intentions was tested by Campbell and Fiske's (1959) multitrait-multimethod matrix procedure. Involved were measures of affect, behavioral intentions, and a multiplicative function of measures of behavioral intentions and the affect toward the behaviors. The results showed that affect and behavioral intentions are conceptually and operationally distinct constructs, over 80% of the correlations between behavioral intentions -- both directly and the multiplicative function -- and affect accounting for under 30% of the common variance.

ATTITUDINAL AFFECT AND BEHAVIORAL INTENTIONS[1]

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For some time, one of the major views of attitude structure has been in terms of a three-dimensional model, consisting of affect, cognition, and behavioral intentions (e.g., Allport, 1935; Katz & Stotland, 1959; Krech, Crutchfield, & Ballachey, 1962; Triandis, 1964, 1967).

A second major orientation has been in terms of only one dimension: affect (e.g., Thurstone, 1931; Rhine, 1958). In a recent series of papers, Fishbein (1963, 1965, 1966) has considerably extended this model.

According to Fishbein (1963), the attitude toward any object may be found by measuring the probability that the object is associated with various other objects and by measuring the evaluative aspects of the related objects. Stated in algebraic terms, his theory maintains that $A_o = \sum_{i=1} B_i a_i$, where A_o is the attitude toward object "o", B_i is the strength of belief "i" about the object, a_i is the evaluative aspect of B_i, and N is the number of beliefs (p. 234).

Although Fishbein (1965) has maintained that cognition should be treated as a construct independent of attitude, such a formulation

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essentially subsumes it under affect; i.e., as one of the elements to measure in order to obtain an affect score.

He has suggested a similar formulation for behavioral intentions (Fishbein, 1966), especially so when they are measured by such instruments as Triandis' (1964, 1967) behavioral differential (BD). That is, since behavioral intentions are measured on 9-point scales ranging from "I" would to would not perform some behavior toward some person (e.g., invite this person to my club), such statements may be considered belief statements about the stimulus object. The scale score may thus be considered the probability aspect of the belief. According to Fishbein (1966), if one also obtained evaluations of the behaviors, he could then apply Fishbein's (1963) model to predicting the attitude (affect) toward the stimulus person.

Recently, however, some data have been presented that are not fully consistent with Fishbein's (1963) original formulation (e.g., Davis & Triandis, 1965; Kilty, 1967, 1968; Triandis, Kilty, Shanmugam, Tanaka, Vassiliou, 1968). These studies found that cognition and affect are not necessarily closely related and investigated some of the factors that may determine the strength of any such relationship.

To further delineate both the operational and the conceptual properties of attitude structure, it was felt that Fishbein's (1966) hypothesis concerning the relationship between affect and behavioral intentions should be tested in more detail than previously by using Campbell and Fiske's (1959) multitrait-multimethod matrix, a procedure somewhat different than has been used before (Triandis, Fishbein, & Hall, 1964).

Method

Overview

The criterion used in the previous (Kilty, 1967, 1968) studies to determine whether there was a sufficient relationship between affect and cognition to justify conceptualizing the two as equivalent was in terms of the two variables sharing more than 30% of the variance. The procedures in the present study were somewhat similar, in that a correlational analysis was used. The same criterion of a correlation of .45 that was used in the earlier studies was used in the present study. It should be noted that this criterion was generally an underestimate of the correlation needed to account for 30% of the reliable common variance.

In previous studies of this sort (e.g., Kilty, 1968; Triandis et al., 1964), the semantic differential (SD) evaluation factor was used as the measure of affect. In order to use an additional measure of affect inthe present study, Likert scales were also employed. Six stimuli were used: (a) A GERMAN, (b) A NEGRO, (c) A WOMAN, (d) A DISABLED PERSON, (e) A CATHOLIC, GERMAN FEMALE WITH VERY LIGHT-COLORED SKIN WHO SPEAKS POOR ENGLISH AND IS AN UNSKILLED LABORER, and (f) A PROTESTANT, NEGRO, AMERICAN MALE WHO SPEAKS EXCELLENT ENGLISH AND IS A FELLOW STUDENT.

The traits in the multitrait-multimethod matrix, then, consisted of the person stimuli, while the methods were the various instruments. This included treating each BD factor as a separate method.

Subjects

The subjects were 30 white male and female students in an introductory course in social psychology. All were volunteers and received a payment of $1.50 for their participation.

Questionnaire

The questionnaire itself may best be considered as consisting of four distinct sections. The first part contained four Likert-type attitude scales, all adapted from Shaw and Wright (1967). Each scale was 14 items long, and each item was responded to on a 5-point agree-disagree scale. The scales were (a) the "Attitude toward the German People Scale" (pp. 397-398); (b) the "Attitude toward the Negroes Scale" (pp. 363-364); (c) the "Open Subordination of Women Scale" (pp. 458-459) and the "Chivalry Scale" (pp. 459-461); and (d) the "Attitude toward Disabled People Scale (Form A)" (pp. 480-483). It was not possible, of course, to obtain Likert scales for the two complex stimuli.

In the second section, subjects rated each of the person stimuli on ten 3-point SD bipolar scales. These scales composed two factors: "affect" (e.g., good-bad, clean-dirty) and "belief" (e.g., probable-improbable, likely-unlikely).

Subjects rated the six stimuli on 25 BD scales in the third section. These scales consisted of five representative scales from each of the five most commonly found factors (Triandis, 1964, 1967), most of which had been used in a previous and somewhat related study (Triandis et al., 1964).

In the last section, the 25 BD scales were used as the concepts to be rated on the ten SD scales presented earlier. The evaluative SD scales were used as the measure of the evaluative aspects of the beliefs, as required by Fishbein's formulation.

To control for order effects, the four questionnaire sections were distributed in all possible combinations, approximately equal numbers of subjects receiving each of the 24 possible combinations. Within the

two sections where the stimuli were rated over the SD and BD scales, the six stimuli were presented in a single random order, as were the 25 BD scales when they were rated on the SD scales. All SD and BD scales were in a random order, approximately half the scales reversed in direction to control for response styles. The 56 Likert items were presented in a fixed random order without regard to specific scale.

Reliability

Since most of the instruments have a fairly constant reliability across concepts, the reliabilities will be presented here rather than in the matrices. The SD has a reliability of approximately .85 (e.g., Osgood et al., 1957), and the BD has a reliability of .92 (e.g., Triandis et al., 1964; Triandis, 1967). The multiplicative function of behavioral intentions and the evaluations of the behaviors according to Fishbein's (1966) hypothesis has an estimated reliability of .78. The split-half reliabilities (after correction by the Spearman-Brown formula) for the Likert scales were (a) for the German scale..80; (b) for the Negro scale .83; (c) for the Woman scale .76; and (d) for the Disabled Person scale .81.

Scoring Procedures

The Likert items, SD evaluations, and BD scales were summed respectively on 1-5 point, 1-8 point, and 1-9 point scales, the higher number reflecting a more favorable attitude.

Since the BD scales and SD evaluations of the behaviors were not of the same length (especially since the SD scores were based on five scales), these scores were standardized before multiplication. All scales within a factor were multiplied with the respective evaluation of the behavior, and these scores were summed by factor, according to Fishbein's (1963) equation.

No other scores were standardized, since all scores were then simply correlated.

BD Factors

Since any specific BD factor structure is dependent on the stimuli employed (Triandis, 1967), the scales were factored separately by concept, using the principal axis method with varimax rotation to simple structure. The resulting number of factors for the concepts varied from three to six. Because the various factor structures are of some importance in interpreting the results, the factors (with a representative scale) for each concept will now be presented.

For A GERMAN, a six factor solution controlling 63% of the variance was obtained: Factor I: Formal Equality (invite to club); Factor II: Marital Acoeptance (marry); Factor III: Gaming (win game when this person is my competitor); Factor IV: Superordination (teach); Factor V: Formal Acceptance (admire character); Factor VI: Subordination (not treat as subordinate).

A four factor solution acccunting for 56% of the variance was found for A NEGRO: Factor I: Formal Acceptance (treat as equal): Factor II: Marital Acceptance (not marry); Factor III: Gaming (win game); Factor IV: Respect (admire ideas).

For A WOMAN, four factors accounted for 55% of the variance: Factor I: Friendship (accept as intimate friend); Factor II: Marital Acceptance (not marry); Factor III: Subordination (be commanded by); Factor IV: Formal Acceptance (work with).

Six factors controlled 65% of the variance for A DISABLED PERSON: Factor I: Marital Acceptance (not marry); Factor II: Respect (admire ideas); Factor III: Low Social Distance (not exclude from

neighborhood); Factor IV: Gaming (win gam); Factor V: Formal Acceptance (be partners with in athletic game); Factor VI: Work Acceptance (work with).

For A CATHOLIC, GERMAN FEMALE WITH VERY LIGHT-COLORED SKIN WHO SPEAKS POOR ENGLISH AND IS AN UNSKILLED LABORER, a six factor solution accounted for 66% of the variance: Factor I: American Superordination (permit to do me a favor); Factor II: Marital Acceptance (not marry); Factor III: Respect (work for); Factor IV: Gaming (win game); Factor V: Low Social Distance (not exclude from neighborhood); Factor VI: Formal Acceptance (not prohibit from voting).

A three factor solution controlled 47% of the variance for A PROTESTANT, NEGRO, AMERICAN MALE WHO SPEAKS EXCELLENT ENGLISH AND IS A FELLOW STUDENT: Factor I: Formal Acceptance (invite to club); Factor II: Marital Acceptance (not marry); Factor III: Gaming (win game).

Results

Since there were 68 variables in the complete multitrait-multimethod matrix, it will not be presented in full. Rather, a multimethod matrix will be presented for each concept.

Before continuing to an examination of these tables, a few words should be said concerning the notation used in them. The concepts are presented in the same order as in the Method section. L and SD refer, respectively, to the Likert scales and the SD evaluations of the stimuli. The BD factors are numbered BD_1, BD_2,...BD_n, and are in the orders that were presented earlier. The BDa variables refer to the scores derived on the basis of Fishbein's (1963) model, and the factors are presented in the same order as before.

In the actual matrix, there were almost 2,300 correlations. To control for chance effects, the significance level was set at the .001 level.

The Multimethod Matrices

A GERMAN. The multimethod matrix for A GERMAN is given in Table 1. As may be seen, none of the correlations between the BD and the affect measures surpassed the .45 level, the BDa scores being little improvement over the simple BD factor scores. Correlations between the BD factors and the respective BDa scores were all quite high.

It may be noted, too, that some of the BD factors were intercorrelated beyond the criterial level. For example, BD_2 (Marital Acceptance) and BD_5 (Formal Acceptance) correlated .48. The behaviors involved in these two factors, though, are partly overlapping, since, by way of illustration, one generally admires the character of a person whom he would marry.

The factor structure for any given concept will tend to be somewhat idiosyncratic. Any given factor may not emerge since the same behaviors do cluster somewhat differently depending on the characteristics of the stimulus person. In the case of the simple stimuli, in particular, cross-loading of behaviors should be expected, due simply to the nebulous and general qualities of the concepts. Some overlap, then, should be expected, but, in most cases, the overlap was not extreme for A GERMAN.

More extreme intercorrelation is evident for the BDa scores (extending also into the correlations between BD and BDa scores),

Table 1

Multimethod Matrix for A GERMAN

	L	S	BD_1	BD_2	BD_3	BD_4	BD_5	BD_6	BD_1a	BD_2a	BD_3a	BD_4a	BD_5a
S	.65												
BD_1	.36	.30											
BD_2	.42	.38	.44										
BD_3	-.04	-.03	-.10	-.04									
BD_4	.27	.15	.27	.45	-.15								
BD_5	.34	.25	.42	.48	-.02	.39							
BD_6	.07	.15	.23	.06	.04	-.07	-.02						
BD_1a	.32	.34	.88	.41	-.07	.25	.44	.30					
BD_2a	.37	.45	.50	.79	-.08	.48	.51	.14	.60				
BD_3a	-.01	.10	-.04	.07	.80	-.06	.08	.07	.08	.11			
BD_4a	.30	.34	.30	.39	-.12	.35	.44	.03	.40	.60	.06		
BD_5a	.36	.37	.43	.42	.01	.36	.83	.02	.52	.60	.21	.58	
BD_6a	.16	.28	.07	.17	.10	.03	-.02	.60	.20	.21	.26	.18	.02

NOTE: $N = 80$; $r = .35$, $p < .001$

which generally followed the pattern for the BD intercorrelations. Since the affect measures were usually positive for the intercorrelating scores, the increase in correlation would seem due to the positive evaluations. This, of course, would tend to invalidate the BDa measures.

A NEGRO. Table 2 gives the multimethod matrix for A NEGRO, the results similar to those just presented. For the correlations with the Likert scale, the BD_1 factor exceeded the .45 criterion, as did the BD_1a measure. The correlation for the BD_1a score, though, was considerably less than that for the BD_1 score. Similar results may be seen for the BD and SD correlations, although the BD_4a-SD correlation surpassed its counterpart.

Most of the correlations were less than the criterion, and the BDa scores generally did not correlate with the affect scores much more than the standard BD scores did. The correlations between the BD and BDa scores were again quite substantial; intercorrelations of the BD measures followed the previous pattern. Such factors as Formal Acceptance and Respect were correlated, factors that have previously been found not to be completely independent (cf. Triandis, 1967).

A WOMAN. As may be seen in Table 3, the correlations for A WOMAN were generally consistent with the previous results. The correlation between the L and SD measures, however, was quite low. Since the Likert scale for this concept was a composite of two scales, it may be measuring a different sort of affect than the SD evaluations of A WOMAN.

Table 2

Multimethod Matrix for A NEGRO

	L	SD	BD_1	BD_2	BD_3	BD_4	BD_1a	BD_2a	BD_3a
SD	.51								
BD_1	.68	.57							
BD_2	.37	.22	.29						
BD_3	-.24	-.06	-.16	-.14					
BD_4	.34	.41	.45	.18	-.07				
BD_1a	.54	.59	.82	.18	-.14	.41			
BD_2a	.39	.34	.32	.73	-.24	.20	.40		
BD_3a	-.22	.05	-.15	-.04	.79	.02	.00	-.02	
BD_4a	.32	.52	.51	.16	-.06	.79	.60	.33	.12

NOTE: N = 80; r = .35, p < .001

Table 3

Multimethod Matrix for A WOMAN

	L	SD	BD_1	BD_2	BD_3	BD_4	BD_1a	BD_2a	BD_3a
SD	.34								
BD_1	.11	.20							
BD_2	-.22	-.12	.13						
BD_3	.26	.18	.29	-.09					
BD_4	.10	.42	.33	-.20	.38				
BD_1a	.22	.36	.79	.00	.36	.43			
BD_2a	-.03	.13	.14	.80	.04	.04	.20		
BD_3a	.30	.32	.25	-.03	.85	.34	.49	.17	
BD_4a	.25	.54	.32	-.12	.37	.79	.63	.16	.52

NOTE: N = 80; $r = .35$, $p < .001$

For the correlations with the SD evaluation, the BD_4a score surpassed the criterion and also surpassed the correlation for its counterpart. Although the BDa correlations were all somewhat higher, none of the other correlations exceeded the criterion.

A DISABLED PERSON. The multimethod matrix for A DISABLED PERSON may be seen in Table 4. The results again pointed out the low level of correlation between the measures of behavioral intentions and affect. Only two correlations with the SD scores surpassed the criterion (for BD_5 and BD_5a).

Intercorrelations between the BD measures were similar to those previously described, the highest correlations being between the BD factors and the respective BDa scores.

First complex stimulus. The two complex person stimuli are most representative of the sort of stimuli generally used with the BD, in addition to their giving the most stable factor structures. The multimethod matrix for the first, A CATHOLIC, GERMAN FEMALE WITH VERY LIGHT-COLORED SKIN WHO SPEAKS POOR ENGLISH AND IS AN UNSKILLED LABORER, is given in Table 5.

The correlation between the BD_5 and SD scores exceeded the criterion, although its counterpart (the BD_5a and SD scores) did not. In general, too, there was less intercorrelation for the BD factors and for the BDa scores than before. The largest correlations, as usual, occurred between the BD and BDa measures.

Second complex stimulus. The correlations for A PROTESTANT, NEGRO, AMERICAN MALE WHO SPEAKS EXCELLENT ENGLISH AND IS A FELLOW STUDENT, were also consistently low, as shown in Table 6. In this

Table 4

Multimethod Matrix for A DISABLED PERSON

	L	SD	BD_1	BD_2	BD_3	BD_4	BD_5	BD_6	BD_1a	BD_2a	BD_3a	BD_4a	BD_5a
SD	.52												
BD_1	.31	.26											
BD_2	.20	.09	.24										
BD_3	.10	.02	-.14	.18									
BD_4	.09	-.08	-.14	-.03	.15								
BD_5	.41	.51	.48	.33	-.03	-.10							
BD_6	.26	.28	.44	.36	.04	-.11	.49						
BD_1a	.34	.32	.47	.16	-.21	-.13	.45	.44					
BD_2a	.18	.28	.26	.73	.14	-.08	.34	.40	.35				
BD_3a	-.04	-.10	-.25	.04	.65	.10	-.06	-.04	-.30	-.15			
BD_4a	.14	.00	-.08	-.02	.13	.78	-.21	.00	.04	.06	.07		
BD_5a	.45	.52	.41	.29	.01	-.12	.80	.52	.56	.56	-.19	-.02	
BD_6a	.28	.36	.39	.32	.07	-.12	.42	.82	.52	.62	-.20	.08	.69

NOTE: $N = 80$; $r = .35$, $p < .001$

Table 5

Multimethod Matrix for First Complex Stimulus

	SD	BD_1	BD_2	BD_3	BD_4	BD_5	BD_6	$BD_1{}^a$	$BD_2{}^a$	$BD_3{}^a$	$BD_4{}^a$	$BD_5{}^a$
BD_1	.26											
BD_2	.25	-.01										
BD_3	-.27	-.20	-.24									
BD_4	.02	.00	.07	.17								
BD_5	.46	.35	.12	-.39	-.05							
BD_6	.08	.67	-.14	-.11	-.14	.23						
$BD_1{}^a$	.32	.75	.02	-.10	.08	.19	.57					
$BD_2{}^a$	.29	.15	.80	-.28	-.01	.16	.04	.23				
$BD_3{}^a$	-.02	.02	-.21	.72	.25	-.21	.03	.22	-.04			
$BD_4{}^a$	.14	-.02	.03	.13	.83	.05	-.12	.16	.06	.35		
$BD_5{}^a$	.41	.41	.09	-.34	-.02	.82	.30	.37	.28	-.09	.02	
$BD_6{}^a$	.14	.60	-.08	-.01	-.03	.13	.82	.77	.11	.22	.03	.24

NOTE: $N = 80$; $r = 35$, $p < .001$

Table 6

Multimethod Matrix for Second Complex Stimulus

	SD	BD_1	BD_2	BD_3	BD_1a	BD_2a
BD_1	.40					
BD_2	.09	.26				
BD_3	-.02	-.04	-.19			
BD_1a	.56	.81	.24	-.06		
BD_2a	.22	.32	.73	-.30	.40	
BD_3a	.18	-.03	-.03	.78	.10	-.04

NOTE: $N = 80$; $r = 35$, $p < .001$

case, though, the correlation that did exceed the criterion was for the BD_1a measure and was considerably larger than the BD_1-SD correlation.

Correlations between factors were almost nonexistent, primarily only the BD and BDa scores correlating.

A Comparison across Concepts

To use the multitrait-multimethod approach effectively, correlations among the traits for the same measures must also be taken into account (Campbell & Fiske, 1959).

The traits (or person stimuli) were not all independent in this experiment. The complex stimuli, it may have been noticed, involved three of the simple stimuli, and the simple stimuli may additionally overlap. A woman, for example, may be a disabled person, as may a Negro; for that matter, there are Negro and German women. Overlap should thus be expected.

Any overlap across traits, though, should vary according to the similarity of the stimuli; e.g., there should be more overlap between the first complex stimulus and A GERMAN or A WOMAN than for A DISABLED PERSON.

The correlation, for instance, between the SD scores for A GERMAN and the first complex stimulus was .64, while it was only .40 for A DISABLED PERSON and this complex stimulus. For the other concepts, the overlap was of the same order, and part of this relationship may be due to the positive evaluations of all the person stimuli.

The same sort of phenomena occurred for the BD scales. The correlation between the Marital Acceptance factors for A NEGRO and the second complex person stimulus was .70, while for A GERMAN and this stimulus it was only .30. The BDa scores that correlated across concepts were similar. The correlation for the BDa Marital Acceptance scores for the previous two stimuli was .81. A number of the BDa correlations were somewhat larger than the BD correlations.

The Likert scales correlated least across concepts, which might be most expected. The items for each scale were considerably different -- moreso, at any rate, than the BD and SD items.

There was also a small amount of inconsistency in the matrix (i.e., items correlating in a fashion that would tend to reduce the discriminant validity of the methods). For example, the correlation between the Friendship factor for A WOMAN and the Respect factor for A DISABLED PERSON was .54. These two factors, though, have been found before to be related (Triandis, 1967; Triandis et al., 1964), and the stimuli are not mutually exclusive.

Due to the size of the matrix, some inconsistency should be expected. Most of what occurred, as shown, was due to the lack of complete independence between the concepts and between the BD factors. In general, the less similar were the traits or the less idiosyncratic the factor structures, the less was the overlap.

Discussion

Fishbein's (1966) hypothesis that behavioral intentions may be employed as an indirect measure of affect, in a manner similar to his treatment of cognition (Fishbein, 1963), was not supported by these data. Of 20 correlations between Likert and BDa scores, only one surpassed the criterion of .45. There were 29 correlations between SD and BDa scores, of which five (or 17%) exceeded the criterion.

These results may additionally be contrasted with the same number of correlations for the BD factor scores. Of the 20 possible correlations with the Likert scores, one exceeded the criterion, and, of 29 correlations between SD and BD scores, three (10%) were greater than .45.

The BDa scores correlated with the affect measures slightly more than the BD measures did, but over 80% of the correlations were within the criterion. When the complex stimuli alone are considered, only one of nine correlations for both the BD and BDa measures surpassed the criterion. There was also the least cross correlation for these stimuli.

It should be noted, too, that the correlations between the BD measures and Likert scores were less than for the BD and SD scores for the simple stimuli. This may partly be due to the decreased similarity between the instruments, which is not the case for the correlations between the BD and SD measures.

At any rate, the hypothesis was not supported. Behavioral intentions and affect would appear to be both conceptually and

operationally distinct constructs--more consistently so than affect and cognition.

Kilty (1968) has shown that the relationship between affect and cognition is not as simple and direct as has been thought. Depending on such factors as the type of concept, the relationship can be manipulated. For affect and behavioral intentions, this does not appear to be the case. Type of concept, number of beliefs, etc., did not play an important part in the present results. The relationship was consistently low.

For that matter, the BD and BDa scores were highly related, the highest relationships in the matrix. It would appear that the BDa measures simply reflect the variance in the BD measures.

Kilty (1968) also raised the issue of the method of correlations i.e., correlating by subject produced considerably higher correlations than correlating by concept. Yet, either way, the level could be manipulated, depending on various conditional factors. Although there were too few concepts used in the present experiment to correlate by subject, the overall low level of correlation would imply that a by-subjects analysis would result in the same sort of low correlations. The relations between behavioral intentions and affect do not appear to involve any conditional variables.

To summarize, attitude structure might better be conceptualized as consisting of two general components: affect-cognition and behavioral intentions.

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13. ABSTRACT

To further delineate the conceptual and operational properties of attitude structure, the relationship between affect and behavioral intentions was tested by Campbell and Fiske's (1959) multitrait-multimethod matrix procedure. Involved were measures of affect, behavioral intentions, and a multiplicative function of measures of behavioral intentions and the affect toward the behaviors. The results showed that affect and behavioral intentions are conceptually and operationally distinct constructs, over 80% of the correlations between behavioral intentions -- both directly and the multiplicative function -- and affect accounting for under 30% of the common variance.

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