

Rationalists, Fatalists, and the Modern Superstitious: Test-Taking in Introductory Sociology

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As sociologists we are guided by a rational approach to understanding the social world. This rational approach is also evident in the way we test students. But do students approach tests from the same orientation that we take in creating them, or are they influenced by such nonrational orientations as superstitions? To explore this question the authors created and administered the Luck and Superstition Questionnaire to 426 students taking Introduction to Sociology. We found that nearly 70 percent of students indicate some level of test-related superstitious practice. However, we also found that superstitious practice was largely unrelated to religious belief and practice, gender and race, educational performance and grade expectations, and end-of-semester pressures. These results are entirely consistent with Colin Campbell's theory of modern superstition. Superstitious practice in modern society is self-sustaining—not integrated into social institutions or systems of belief—and only “half-believed” by the very practitioners of modern superstition.

Sociology is guided by the rational orientation and empirical methods that are hallmarks of modern Western societies. This rational orientation takes the external world as something to be understood and mastered through the tools of empiricism—systematic observation, description, hypothesis testing, and experimentation. As sociologists we are committed to a rational approach which is often evident in the way we test our students. We believe that students should master the concepts, theories, and relevant applications in the field of sociology. We then proceed to design tests in such ways that measure how much of that material our students have learned. This rational approach to testing students' knowledge is particularly evident in teaching the introductory class. This class, often large, typically is examined through the mechanism of the “objective” test using a mixture of multiple choice, true-false, and matching questions.

In discussing various aspects of teaching introductory sociology, we began to wonder about the extent to which our students hold the same rational model of testing that we do. Do students actually approach tests from the orientation we take in creating them—a test of one's mastery of a field of knowledge, or are they influenced by other nonrational orientations? To explore this question one of the authors informally asked students one day how many of them would not

want to take a test on a Friday the thirteenth. To his surprise approximately 30 percent of students raised their hands. This result prompted us to think about alternatives to the rational orientation with regard to test-taking in introductory sociology.

Our inquiry is guided by the work of sociologist Colin Campbell (1996), who proposes a uniquely sociological theory of superstition in modern society. According to Campbell, unlike superstition in traditional societies, superstitious practice in modern societies is: (1) not integrated into cultural customs and social institutions and consequently is highly individualistic; (2) unrelated to a system of belief and therefore lacks a rationale; (3) usually denied by its practitioners as having any influence on the outcome of events (pp. 155–56). Theories of superstition prior to Campbell's work were largely psychological in nature and assumed that superstitious practice is accompanied by belief in those practices. According to Campbell (1996), Malinowski's (1948) "theory of the gap" is the best known of these theories. Campbell writes:

It is important to note that in Malinowski's theory the activity which anxiety prompts is a "substitute activity," something which occurs in place of the instrumental acts which would be engaged in were there any which the actor considered likely to be effective. The consequences of this substitute activity which can be said to be functional are to be found . . . in the release of anxiety or fear. (p. 154)

Superstitious practice is most frequent in situations where outcomes are crucial to people. Test-taking certainly falls within that category of situations. In our rational approach as teachers, we expect that in anticipation of taking a test students will engage in behaviors which will increase the likelihood of answering questions correctly—strategies for reading, memorization, problem solving, and others. At times when students do experience a gap between these rational strategies and the event they so desire—a grade acceptable to them—what is their response? If they do respond with some substitute activity such as wearing a good-luck piece of clothing, and doing so puts them at ease, do they also believe in the "magic" of the good-luck clothing?

To explain the persistence of superstitious practice in modern societies, Campbell makes use of the notion of "half-belief." The half-belief idea was developed by the psychologist Peter McKellar (1952), who describes it as a norm that governs superstitious belief. Campbell (1996) describes the idea in the following way:

This then is perhaps the most puzzling feature of modern superstition: it involves individuals engaging in practices which they don't believe. . . . Hence the interesting feature of the phenomenon is not merely that superstitious rituals are performed by people who claim not to be superstitious but that an apparently genuine disbelief in the validity of a superstitious practice coexists with actions which would suggest belief in the same practice. (p. 153, 158)

Central to Campbell's explanation of the persistence of superstitious practice in modern societies is the notion of *instrumental activism*. Talcott Parsons

(1965) identified instrumental activism as a core value in the West. Instrumental activism is “the belief that all problems can be solved through the application of scientific knowledge and sustained effort to whatever serves as an obstacle to the realization of human desires” (Campbell 1996, p.160). The key feature of this orientation is a commitment to action. It is this commitment to action that Campbell sees as creating a dilemma for individuals who are members of this “cult” of instrumental activism: “members of such societies will find it especially difficult to cope with those situations where they find themselves helpless to ‘do’ anything to influence the outcome of what are, for them, crucial events” (p. 160). In those situations, the dilemma for believers in instrumental activism is a tension between a commitment to action (core value) and a rejection of belief in the power of nonrational actions, such as superstitious practices, to effect a future event: “Either they act in a way which denies their core values but is consistent with their beliefs, or they act in a way which is consistent with those values but is contrary to their beliefs” (p. 161). Thus the student who wears a good-luck piece of clothing is acting in a way consistent with the core value of instrumental activism (they are “doing” something), yet must deny belief in the “magic” of the clothing since it contradicts the belief in rationalism. This would be a half-belief. Superstitious practice in modern society is, according to Campbell (1996), largely ritualistic instrumental activism that “is self-sustaining in the sense that it does not appear to require a justification in terms of accompanying belief” (p. 158). In other words, the commitment to instrumental activism in modern society is so pervasive that its ritualistic expression may exist independent of any rational justification.

In this study we will explore the extent to which students take a rationalist, fatalist, or superstitious approach to test-taking in introductory sociology. A *rationalist* is one who neither believes that luck is a factor in test-taking nor engages in superstitious rituals related to testing. A *fatalist* is one who believes that luck is a factor in all tests but does not do anything about it (i.e., does not engage in superstitious luck rituals). Two versions of the modern superstitious type will be identified. *Half-believers I* are those who both believe that luck is a factor in test-taking and also engage in test-related superstitious luck rituals. *Half-believers II* are those students who do not believe that luck is a factor in test-taking but nevertheless engage in test-related superstitious luck rituals. Following the placement of students into one of these four types, we discuss how other student characteristics are related to this typology of approaches to test-taking in introductory sociology.

Data and Methods

The data for this project are based on a convenience sample of undergraduate students taking Introduction to Sociology from one of the authors during the

1998–99 academic year. Two hundred and sixty-five students in a single class completed the questionnaire in class in the thirteenth week of the fall 1998 semester. In the third week of the spring 1999 semester, 83 students in one class and 79 students in another class completed the questionnaire in class. The total sample size for this study is 426. The sample has the following characteristics: 69.2% were female, 83.6% white; the modal category for anticipated grade for the course was a grade of B (40.7%); approximately two-thirds of the students were freshmen (62.3%); the modal reported G.P.A. category was 2.5 to 3.4 (51.6%).

The questionnaire that was administered contains twenty-two items. There are five types of questions in the instrument (see Appendix for complete questionnaire): (1) test-related superstitious practice questions such as “When taking a test, I try to sit in a lucky seat”; (2) Friday the thirteenth superstitious belief questions, such as “I would prefer not to take a sociology test on Friday the thirteenth”; (3) religiosity and religious practice questions; (4) academic standing questions, including semester hours completed and G.P.A.; (5) demographic questions for race/ethnicity and gender. The questions were developed by the authors except for those on religiosity which are based on the work of Rodney Stark and Charles Y. Glock in their book *American Piety: The Nature of Religious Commitment* (1968).

We conducted a principal components analysis on the general superstition items and the Friday the thirteenth items for the purpose of data reduction and, therefore, greater efficiency in examining questions related to superstition and testing. The results of the principal components analysis indicated a three-component solution using the criteria of eigenvalue ≥ 1 . The three-component solution explained 55% of the variance in the observed data. The items grouped as expected. Items loading highest on the first component were items indicating test-related superstitious practice (items 3–5, 10–12). By summing these six items we created a scale with the following characteristics: mean = 2.91, s.d. = 3.28, alpha reliability coefficient = .82. We have labeled this variable “superstitious practice.” The items loading highest on the second component included all four Friday the thirteenth items plus item 17 (“Others would describe me as superstitious”). By summing these five items we created a scale with the following characteristics: mean = 4.79, s.d. = 2.29, alpha reliability coefficient = .74. We have labeled this variable “Friday the thirteenth superstitious belief.” The two items with high loadings on the third component were items 1 and 2. These are general questions about superstitious belief and superstitious practice, whereas items contributing to the previous two scales refer to specific behaviors and beliefs. Since the alpha reliability coefficient for this two-item scale was low (.44), we decided to treat these items separately in subsequent analyses. Since our sample is not a probability sample, we will not use inferential statistics to generalize

from our sample to the population of undergraduates taking introductory sociology. Thus, the statistical analysis that follows is exclusively descriptive.

Results

The typology of student approaches to test-taking was determined using item 1 of the questionnaire, "I think luck is a factor in all tests," together with the scale on superstitious practice. We collapsed the four-category item 1 question into two categories. Persons either "agreeing" or "strongly agreeing" with that statement were combined into a single group labeled "agree," and persons either "disagreeing" or "strongly disagreeing" with that statement were combined into a second group labeled "disagree." The result is that just under half of the students (48.6%) agree with the statement that "luck is a factor in all tests," while just over half (51.4%) of the students disagree (Table 1).

Next we collapsed the superstitious practice scale into three categories. Those persons responding with either "never" or "strongly disagree" to all six items composing the superstitious practice scale were combined into the category we have labeled "none" in Table 1. Close to one-third of our students (32.2%) report never engaging in test-related superstitious rituals. Students in this category have a value of zero on the superstitious practice scale. The second and third groups, which are labeled "little to moderate" and "a lot" in Table 1, were determined using the following definitions: students with values of one to six on superstitious practice were grouped together into the "little to moderate" category, while students with values of seven or more were grouped together into the "a lot" category.

These two cut points on the superstitious scale are not arbitrary. We thought that a student who answered either "rarely" or "disagree" to all six superstitious practice items (which would be a value of six on the superstitious practice scale) is just under the threshold of exhibiting "a lot" of superstitious practice.

Table 1
Cross-Tabulation of Belief in Luck in Test-Taking and Superstitious Practice

		Superstitious Practice			
		None	Little to Moderate	A Lot	Total
Luck is a factor in all tests	Disagree	19.7% (84)	28.2% (120)	3.5% (15)	51.4% (219)
	Agree	12.4% (53)	27.5% (117)	8.7% (37)	48.6% (207)
	Total	32.2% (137)	55.7% (237)	12.2% (52)	100% (426)

This rationale is indirectly supported by the fact that change in the distribution of scores on the superstitious practice scale is greatest at those two points that define these categories: a value of zero ($n = 137$) compared to a value of one ($n = 47$), and a value of six ($n = 29$) compared to a value of seven ($n = 14$). We are confident that the points at which the superstitious practice scale has been collapsed represent meaningful changes in superstitious practice and, thus, meaningful categorical distinctions. Based on this grouping, over one-half of our students (55.6%) report "little to a moderate" amount of test-related luck rituals, while nearly one-eighth (12.2%) exhibit "a lot" of test-related luck rituals (Table 1).

The typology of students regarding test-taking that is presented in Table 2 is derived from the cross-tabulation in Table 1. Rationalists are those students who neither believe that luck is a factor in test-taking nor engage in any superstitious practice related to taking a test. Nearly one-fifth (19.7%) of our students meet those attributes—disagree that luck is a factor in all tests and report no superstitious practice. Fatalists are defined as those students who believe that luck is a factor in test-taking but do not engage in test-related superstitious practice. Nearly one-eighth of our students (12.4%) meet that classification. The remainder of our students—almost seven of every ten (67.9%)—fall within one of the two categories of the modern superstitious. Half-believers I agree that luck is a factor in testing and engage in test-related superstitious rituals. Half-believers II are defined as students who disagree that luck is a factor in testing but who nevertheless engage in some degree of superstitious practice. The results of this typology are both presented for the entire sample and also separately based on time-in-semester when the questionnaire was administered.

Our reaction to the results in Table 2 has been, from the beginning, one of both surprise and concern. First, we simply did not expect either the rate of super-

Table 2
Typology of Introductory Sociology Students Regarding Test-Taking

Typology	Percentage of Students		
	Total Sample $n = 426$	Week 3 Sample $n = 161$	Week 13 Sample $n = 265$
Rationalist	19.7%	28.6%	14.3%
Fatalist	12.4%	6.8%	15.8%
Half-believer I	36.2%	26.7%	42.0%
Half-believer II	31.7%	37.9%	27.9%

stitious practice to be as high or the rate of rationalism to be as low as Table 2 indicates. Secondly, the rate of the rational approach to test-taking at the end of a semester is only half of what it is at the beginning of the semester (28.6% vs. 14.3%), while the overall rate of superstitious practice actually increases slightly (64.6% vs. 69.9%). The results presented in Table 2 clearly show an interaction effect between student type and time-in-semester. This interaction effect will be addressed in detail after discussing some bivariate results.

Our first step to understanding student orientations to test-taking was to examine whether this typology is related to key characteristics of students (items 18–22) and religiosity and religious practice (items 13–16). Of these nine items, two were strongly associated with the typology: expected grade for the class (item 20) and frequency of attending worship service (item 16). We determined strength of association using the chi-square value—an overall measure of difference between observed cell frequencies and cell frequencies expected under the hypothesis of no association. We also evaluated the individual cell measures of discrepancy between the observed value and the expected value for each cell. These measures, expressed as z-scores, allowed us to pinpoint within the cross-tabulations where association was strongest and where it was weakest.

The chi-square value for the cross-tabulation of the typology with expected grade for the course was 32.20. An examination of the cell z-scores revealed two distinct patterns. In the first pattern, the observed cell frequencies exceeded the expected for grades of A and B, while the observed cell frequencies for C, D and F fell below the expected. This pattern describes both the rationalists and half-believers II. The opposite pattern describes fatalists and half-believers I. Observed frequencies for grades of A and B fell below the expected, while the observed frequencies for C, D, and F were greater than the expected. One way of summarizing these differences is to compare percentages of students expecting either an A or B. Those percentages are as follows: rationalists (82.1%), half-believers II (75.6%), half-believers I (65.6%), and fatalists (56.6%) (Table 3).

In comparing grade expectation across three additional variables in Table 3, it appears that grade expectation has a clear and strong association with whether a student does or does not believe that luck is a factor in all tests, but is not associated with either test-related superstitious rituals or superstitious belief. Thus, it appears that the meaning of “luck” in the context of item 1 of the questionnaire (“I think luck is a factor in all tests”) refers to chance and uncertainty in such things as how exams are written, how they are graded, and how well one prepares rather than to the meaning of luck in the sense of a superstitious belief. Rationalists and half-believers II report, therefore, greater confidence in their ability to get a desirable grade perhaps because they have had greater success in the past in taking tests and are therefore less likely to attribute luck to their success. The fatalists and half-believers I, on the other hand, are students who perhaps

Table 3
Analysis of Typology of Student Approaches to Test-Taking

Typology	% Expecting A or B	Luck Is a Factor in All Tests	Supersititious Practice (average)	Friday 13th Superstitious Belief (average)	Attends Worship Service	
					Weekly	Never or 1/yr.
Rationalist	82.1%	Disagree	0	2.6	19.0%	44.0%
Fatalist	56.6%	Agree	0	3.9	7.5%	66.0%
Half-believer I	65.6%	Agree	4.8	5.8	8.5%	43.1%
Half-believer II	75.6%	Disagree	3.7	5.4	7.5%	50.0%

have been less successful in the past at taking tests and are, therefore, more likely to conclude that chance plays a part in all tests.

In a second bivariate comparison, we examined the association between the typology and frequency of worship service attendance (item 16). The chi-square value for this comparison was 21.56. In this case, the pattern of differences between rationalists and fatalists is clear. For rationalists, observed cell frequencies for the category "every week" were well above the expected, while the observed cell frequencies for each of the other four categories of worship service attendance were below the expected. For fatalists, observed cell frequencies were below the expected for the categories "every week," "nearly every week," and "at least once per month" while they were above the expected for the remaining two categories. No clear pattern was evident for the half-believers. In other words, worship service attendance is not related to superstitious practice. Overall, rationalists were more than twice as likely as any of the other three groups to attend worship service every week (19% vs. 7.5% for fatalists, 8.5% for half-believers I, and 7.5% for half-believers II). The fatalists were the least frequent worship service attendees with 66% either never attending or attending only once a year. This compares to 44% for rationalists, 43% for half-believers I, and 50% for half-believers II (Table 3).

This assessment of the typology of student approaches to test-taking reveals two distinct processes. First, students do have different expectations for success, and these expectations are associated with how one views the role of luck in testing. The greater one's expectations for success, the less likely one will regard luck as a factor in tests. This relationship is independent of test-related superstitious practice or superstitious belief. Second, religious practice appears to be related to success as a student only among those who do not engage in test-related superstitious rituals. Those who attend worship service most frequently are also

the most successful as students, while those who attend least are also the least successful.

A third process that we will now address briefly is the apparent interaction effect of student approaches to test-taking with time-in-semester. The difference in the frequency of the typology at the third week compared to the thirteenth week as shown in Table 2 is due almost entirely to an increase in students agreeing with the statement "Luck is a factor in all tests." In week three, 33% (33.4%) of students agreed with that statement. In week thirteen, the percentage agreeing was almost fifty-eight (57.7%). The rate of superstitious practice increased only slightly (64.6% compared to 69.9%). This increase was entirely in the category "a lot." In week three, 8% of students practiced "a lot" of test-related superstition, while in week thirteen, nearly 15% did so. Thus, the large increase in student perceptions of the role of luck in testing is mostly independent of change in superstitious practice.

Discussion

Throughout this paper we have made the assumption that the superstitious practice reported by our students is mostly, if not entirely, of the modernist form—the half-belief. Since we did not ask students directly whether they actually believe in the "magic" of the practices they engage in, we have no empirical way of testing our assumption. What we do know from our analysis, however, is that superstitious practice among our students is largely independent of religious belief and practice, of gender and race, of educational performance and expectations, and of end-of-semester pressures. These results are entirely consistent with Campbell's theory of modern superstition. Superstitious practice in modern society is self-sustaining—not integrated into social institutions or systems of belief. Our analysis supports Campbell's explanation of the persistence of superstition in modern society as a consequence of the pervasiveness of the value of instrumental activism. Test-taking may evoke feelings of helplessness in students. Consequently, what students may do is to mimic instrumentality in the form of a superstitious action such as sitting in a lucky seat during an exam. According to Campbell (1996), "Such acts are to be considered expressive or ritualistic in the sense that they are rendered stereotypical in form so that they 'carry' symbolic meaning. Hence their significance lies in the fact that they 'say something' rather than 'do something.'" (p. 162). It is having the sense of 'doing something' about one's situation that is so central to the modernist personality.

Our results indicate that those students we have labeled rationalists are the most successful in the rational environment of higher education, and the most integrated into the institution of religion. We have also seen, however, that this student type is not constant over the course of a semester. As the semester wears on, the rate of a rational approach to test-taking drops by 50%. At the same time the rate of the fatalist approach more than doubles while the overall rate of superstitious

practice increases only slightly. All of the increase in superstitious practice is in the "a lot" category, which increases from 8% to 15% of students by the end of the semester. Thus, to answer the question which initiated this research—*Do students actually approach tests from the orientation we take in creating them, a test of one's mastery of a field of knowledge, or are they influenced by other nonrational orientations?*—we would have to answer "yes" and "no." While almost seven in ten students indicate some form of superstitious practice, superstitious practice is not related to success in the classroom. In other words, test-related superstitious practice and rational strategies for success in testing are not mutually exclusive. This result is consistent with Campbell's explanation of the persistence of superstition in modern societies.

What these data have revealed to us is the importance of student perceptions of the role of luck or chance in test-taking. Students' predictions of their own success in class are associated with the extent to which they perceive luck to play a part in the outcome of a test. Those students who agree with the statement that "Luck plays a part in all tests" are less likely to expect an A or B for the class than students who disagree with that statement. What now is of most concern to us as instructors is that the percentage of students agreeing with that statement increased from approximately 33% of students in the beginning of a semester to 58% of students by the end of a semester. So rather than seeing an increase in the confidence of students with regard to test-taking, we actually witnessed a substantial decrease. Is there something inherently wrong about our rational approach to testing in the large introductory sociology course?

Conclusion

We started this project with concern that our students were being influenced by superstitious beliefs with regard to test-taking. Paradoxically, however, we have found that our concern should not be with whether students take a superstitious approach to test-taking but rather with how we approach test-giving. In our rational approach as instructors, we believe that students should be able to demonstrate knowledge of the field of sociology by responding to questions written and presented in an "objective" format. This is especially the case in the large introductory classes.

Two limitations of the present research that we intend to correct in future applications of the Luck and Superstition Questionnaire are: (1) measuring actual belief in superstitious practice and (2) measuring the accuracy of student predictions of their own academic success. The first can be accomplished by the addition of a question asking students whether they actually believe in the magic of the superstitious rituals they practice. The second can be accomplished by including a unique student identifier in the questionnaire that would then allow the researcher to connect the actual grade earned in class with the grade the student expected.

Methodological modifications will also be necessary to test further both Campbell's theory of modern superstition as well as the relationship between student perceptions of luck in testing and actual success in test-taking. First, data from introductory social sciences courses such as sociology need to be compared with data from introductory classes in the physical sciences. Second, panel design studies need to be conducted wherein the same students are asked about luck, superstition, and testing both early in the semester and late in the semester. And thirdly, comparisons between introductory classes and upper-division classes need to be carried out. Making these comparisons will allow us to test the stability and generalizability of the results we have described in this paper.

APPENDIX: LUCK AND SUPERSTITION QUESTIONNAIRE (LSQ)

1. I think luck is a factor in all tests.
(A) Strongly agree (B) Agree (C) Disagree (D) Strongly disagree
2. Before taking a test, I try to do something that will bring me luck.
(A) Strongly agree (B) Agree (C) Disagree (D) Strongly disagree
3. When taking a test, I try to sit in a lucky seat.
(A) Always (B) Sometimes (C) Rarely (D) Never
4. When taking a test, I wear a good-luck piece of clothing.
(A) Always (B) Sometimes (C) Rarely (D) Never
5. When taking a test, I bring a good-luck charm with me.
(A) Always (B) Sometimes (C) Rarely (D) Never
6. I would prefer *not* to take a test on Friday the thirteenth.
(A) Strongly agree (B) Agree (C) Disagree (D) Strongly disagree
7. I usually look at the calendar and circle Friday the thirteenth.
(A) Strongly agree (B) Agree (C) Disagree (D) Strongly disagree
8. My friends and I usually talk about the fact that it is Friday the thirteenth.
(A) Strongly agree (B) Agree (C) Disagree (D) Strongly disagree
9. I think Friday the thirteenth is just a normal day where good and bad things can happen.
(A) Strongly agree (B) Agree (C) Disagree (D) Strongly disagree
10. When taking a test, I walk a lucky route to the classroom.
(A) Always (B) Sometimes (C) Rarely (D) Never
11. There are certain people I try not to talk with before a test because they give me bad luck.
(A) Strongly agree (B) Agree (C) Disagree (D) Strongly disagree
12. There are certain things I would not do before a test because they would give me bad luck.
(A) Strongly agree (B) Agree (C) Disagree (D) Strongly disagree

13. In regard to my religious commitment, I would describe myself as
(A) Very religious (B) Somewhat religious (C) Slightly religious (D) Not at all religious
14. In regard to my parents' religious commitments I would describe them as
(A) Very religious (B) Somewhat religious (C) Slightly religious (D) Not at all religious
15. I pray
(A) A least once a week or more (B) Once in a while (C) Rarely (D) Never
16. How often do you attend worship services?
(A) Every week (B) Nearly every week (C) At least once a month (D) Once a year (E) Never
17. I think others who know me would describe me as a superstitious person.
(A) Strongly agree (B) Agree (C) Disagree (D) Strongly disagree
18. How many semester hours have you completed?
(A) 0–30 (B) 31–60 (C) 61–90 (D) 91–120 (E) 121+
19. What is your Grade Point Average (GPA) in college (report high school GPA if you do not yet have a college GPA)?
(A) 3.50–4.00 (B) 2.50–3.49 (C) 1.5–2.49 (D) 0.5–1.49 (E) less than 0.5
20. What grade do you anticipate getting in this course?
(A) Grade of A (B) Grade of B (C) Grade of C (D) Grade of D (E) Grade of F
21. What is your racial/ethnic status?
(A) Black (African American) (B) Asian (C) White (D) Hispanic (E) Other
22. What is your gender?
(A) Female (B) Male

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