ARABIC STUDENTS' PROBABILITY JUDGMENTS

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Arabic women students at our university have a relatively conservative cultural background that includes religious proscriptions against gambling. Do probabilistic situations evoke the same everyday or school-based intuitions as have been found in other cultures? In a survey consisting of four probability questions, percent correct was surprisingly similar to results from Fischbein's (1997) study. However, selection of incorrect choices indicated a different distribution of intuitions in the Arabic students.

A SURVEY OF ARABIC WOMEN'S PROBABILISTIC THINKING

A survey investigating Arabic women students' probabilistic judgments consisted of four questions, each presented on a separate page, with a standard English version on the left side and an Arabic translation[1] on the right side. Previous research has shown that Western students' responses to the questions often involve erroneous everyday intuitions (i.e., perceptions or judgments that are direct and appear to be self-evident). Additionally, Fischbein and Schnarch's (1997) study of students at five age levels indicated that incorrect responses to some problems increase with students' age.

The left column of Table 1 gives nutshell descriptions of the four probabilistic situations presented in this study. The middle column shows percent of correct responses on each question by Arabic women students—surprisingly similar to results in the third column showing performance of college students training to be math teachers (Fischbein & Schnarch, 1997). Interestingly, one might ask whether the difference in performance on the lottery problem is due to differences in mathematical background or familiarity with lotteries. Additionally, the distribution of incorrect responses was not the same as in Fischbein's study, indicating a different set of erroneous intuitions in the Arabic group.

What is more likely…	Arabic Women Students	Math Teacher Trainees
after four previous coin flips came up heads?	92	94
in a lottery: (1,2,3,4,5,6) or (39,1,17,33,8,27)?	69	78
in rolling two dice: (5 and 6) or (6 and 6)?	7	6
deviation from base rate (9 / 15) or (27 / 45)?	1	0

Table 1: Percent Correct on Four Standard Probability Questions

References:

Fischbein, E., & Schnarch, D. (1997). The evolution with age of probabilistic, intuitively based misconceptions. *Journal for Research in Mathematics Education, 28*(1), 96-105.

[1] Translations by Nour Al Hashimi & Wafa Hashim, Zayed University mathematics majors.