DRIVER SELF-ASSESSMENT IN SPAIN AND THE U.S.A.

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1. Report No. UMTRI-87-11	2. Government Accession No.	3. Recipient's Catalog No.

4. Title and Subtitle	5. Report Date
DRIVER SELF-ASSESSMENT IN SPAIN AND THE U.S.A.	March 1987
	6. Performing Organization Code 022567

7. Author's) Michael Sivak and Jose Soler	8. Performing Organization Report No. UMTRI-87-11

9. Performing Organization Name and Address The University of Michigan Transportation Research Institute, Ann Arbor, Michigan, 48109, U.S.A., and The University of Valencia, Faculty of Psychology, Department of General Psychology, Methodology, and Psychobiology, Valencia, Spain	10. Work Unit No.
	11. Contract or Grant No. CCA-8411/001
	13. Type of Report and Period Covered

12. Sponsoring Agency Name and Address U.S.-Spain Joint Committee for Scientific and Technological Cooperation Paseo del Prado, 28-5.ª Planta, 28014 Madrid, Spain	14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

This study investigated differences in driver self-assessment between Spanish and U.S. drivers. Subjects responded to 14 questions that used five-point semantic scales dealing with driver performance and abilities. Pairs of questions, concerning the same driving-related aspect, differed by asking for a self-assessment on an absolute basis and in relation to the average driver. The subjects in both countries included young, middle-aged, and older drivers of both sexes.

The following are the main findings: (1) A majority of drivers, both in Spain and the U.S., viewed themselves positively on all driving-related scales studied. (2) Cultural differences were present for several semantic scales. Spanish drivers tended to place themselves more frequently in the middle response category than did U.S. drivers. The converse was the case for the positive response categories. (3) In general, U.S. (but not Spanish) drivers assessed themselves more positively when asked for evaluation on an absolute basis than in relation to the average driver. (4) Older drivers tended to assess themselves more positively than younger drivers. (5) Male drivers tended to assess themselves more positively than female drivers. (6) Demographic information can account for up to 21% of the variance of the responses on the semantic scales.

17. Key Words driving, self-assessment, Spain, U.S.A., cross-cultural comparison, driver age, driver experience, psychology	18. Distribution Statement Unlimited

19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 20	22. Price

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ACKNOWLEDGEMENTS

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INTRODUCTION

This is the third in a series of studies being performed as part of a research project on driver risk-taking in Spain and the U.S.A. The first study (Sivak and Soler, 1986a) involved an analysis of factors associated with traffic accidents in the two countries. The second study (Sivak and Soler, 1986b) investigated perception of risk in slide-projected photographs of traffic scenes.

The present study focused on driver self-assessment. Previous studies (Svenson, 1981; McCormick, Walkey, and Green, 1986) have shown that drivers tend to rate themselves as more skillful and less risky than the average driver. The primary objective of the present study was to investigate differences between self-assessment of Spanish and U.S. drivers on semantic scales related to driving ability and performance. Of interest were self-assessments both on an absolute basis and in relation to the "average" driver. The secondary objective was to study age-related differences in driver self-assessment.

METHOD

Questionnaire

The questionnaire consisted of 14 questions (see Figures 1-14). Questions 1-6 (adapted from McCormick et al., 1986) asked subjects to assess themselves on the following semantic scales: unpredictable—predictable, dangerous—safe, tense—relaxed, foolish—wise, inconsiderate—considerate, and irresponsible—responsible. Questions 7-12 dealt with the same six semantic scales as questions 1-6, but this time subjects were asked to assess themselves in comparison to the average U.S. (Spanish) driver. Questions 13 and 14 dealt with driving skills using a bad—good semantic scale. Question 13 concerned self-assessment, while question 14 dealt with the assessment of the majority of U.S. (Spanish) drivers. All 14 questions had five possible response categories.

Subjects

A total of 120 subjects participated in this study. Sixty were tested in Spain and sixty in the U.S.A. There were 20 subjects (10 males and 10 females) in both Spain and the U.S.A. in each of the following three age groups: 19-21 year olds, 35-45 year olds, and 65-75 year olds. The actual ages of subjects in each group are shown in Table 1. The U.S. subjects, who were paid for their participation, came primarily from Ann Arbor, a city with a population of approximately 120,000. The Spanish subjects, who were unpaid volunteers, came primarily from Valencia, a city with a population of approximately 800,000.

Procedure

The questions were always shown in the same order, with Questions 1-6 on the first page, Questions 7-12 on the second page, and Questions 13 and 14 on the third page. The questionnaire was constructed in English, and then translated into Spanish.

Additional information was collected on subject's amount of current annual driving and years of driving experience. The questionnaire took 4-10 minutes to complete.

TABLE 1

AGES OF SUBJECTS

Group	Culture	Sex	N	Min Age	Max Age	Mean Age
Younger	Spain	Males	10	19	21	20.0
		Females	10	19	21	20.4
	U.S.A.	Males	10	19	21	20.0
		Females	10	19	21	19.9
Middle-Aged	Spain	Males	10	36	45	40.0
		Females	10	35	45	40.2
	U.S.A.	Males	10	35	45	39.8
		Females	10	35	45	38.9
Older	Spain	Males	10	65	75	69.3
		Females	10	65	72	68.0
	U.S.A.	Males	10	65	73	69.4
		Females	10	66	74	70.9

RESULTS

The distributions of responses to the 14 questions are shown in Figures 1 through 14. These figures contain the aggregate data for each country.
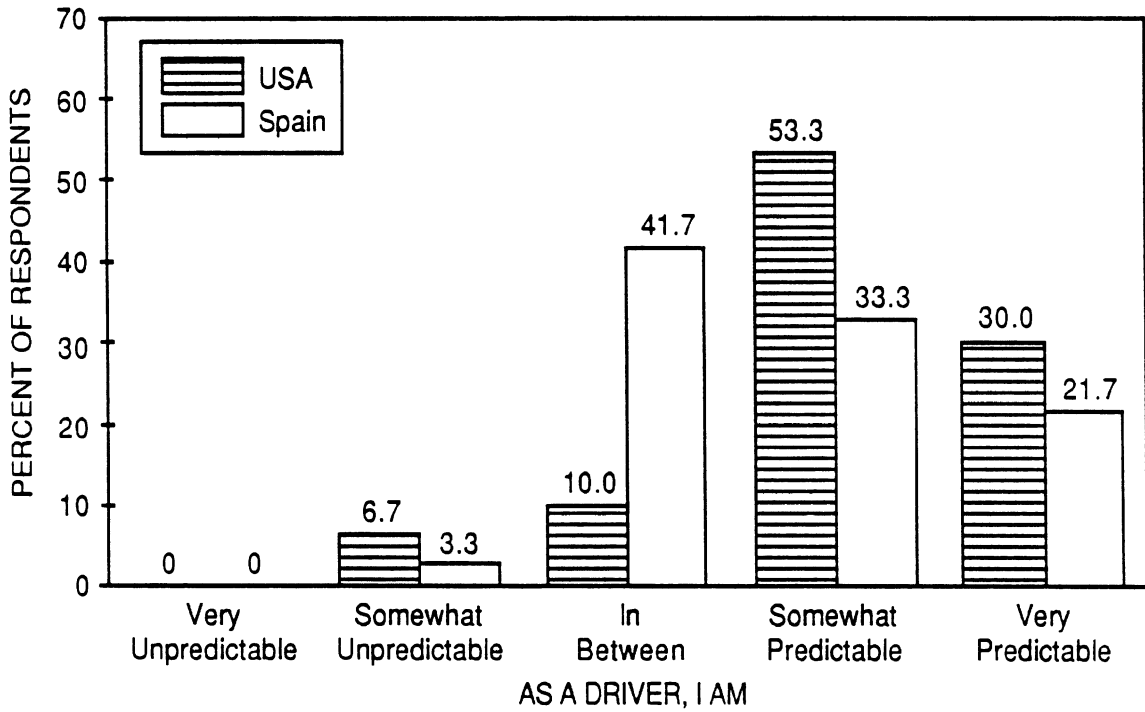

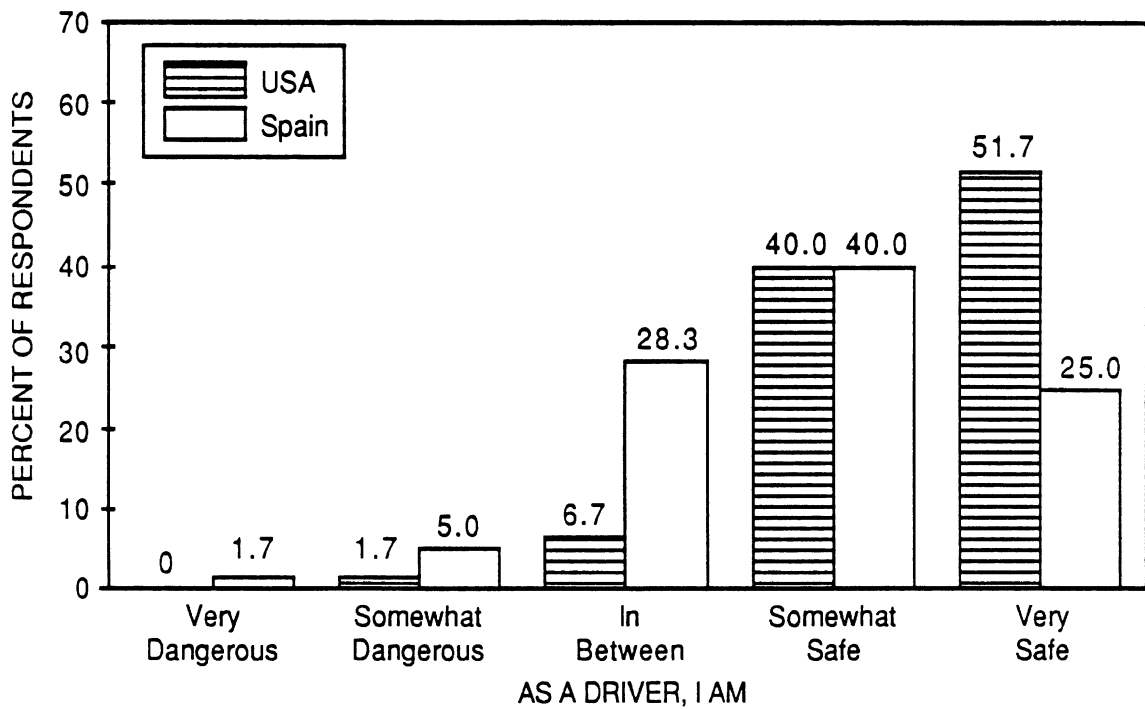Figure 1. Distributions of responses on the unpredictable—predictable (absolute) scale.

Figure 2. Distributions of responses on the dangerous—safe (absolute) scale.
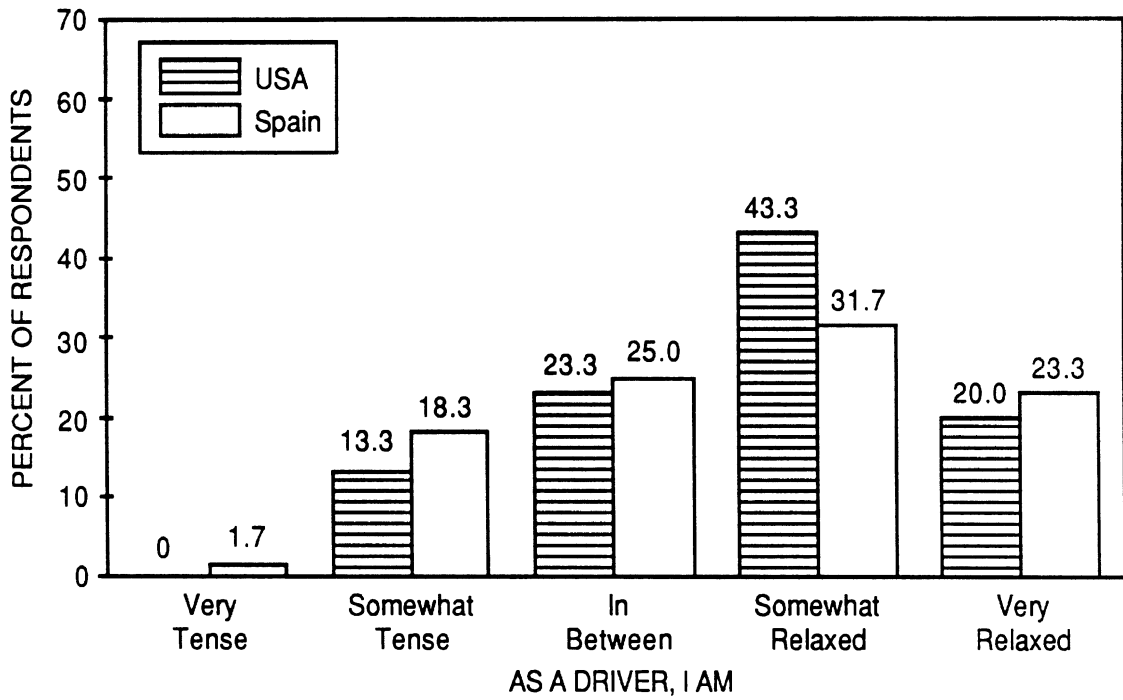
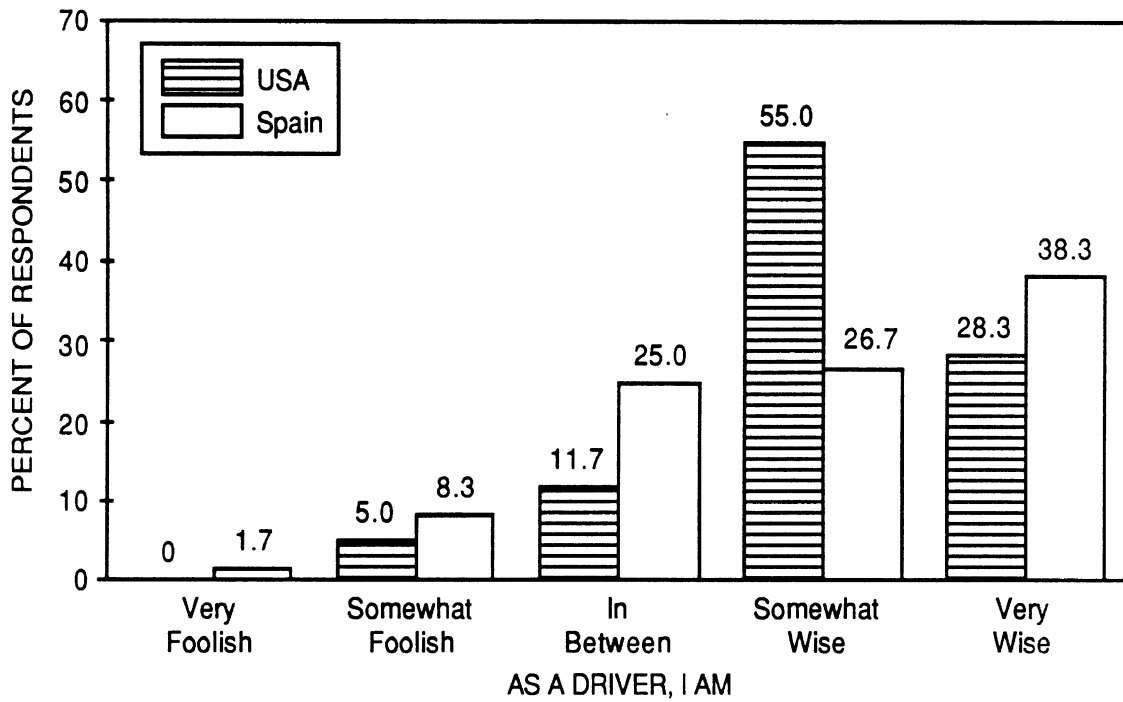Figure 3. Distributions of responses on the tense—relaxed (absolute) scale.

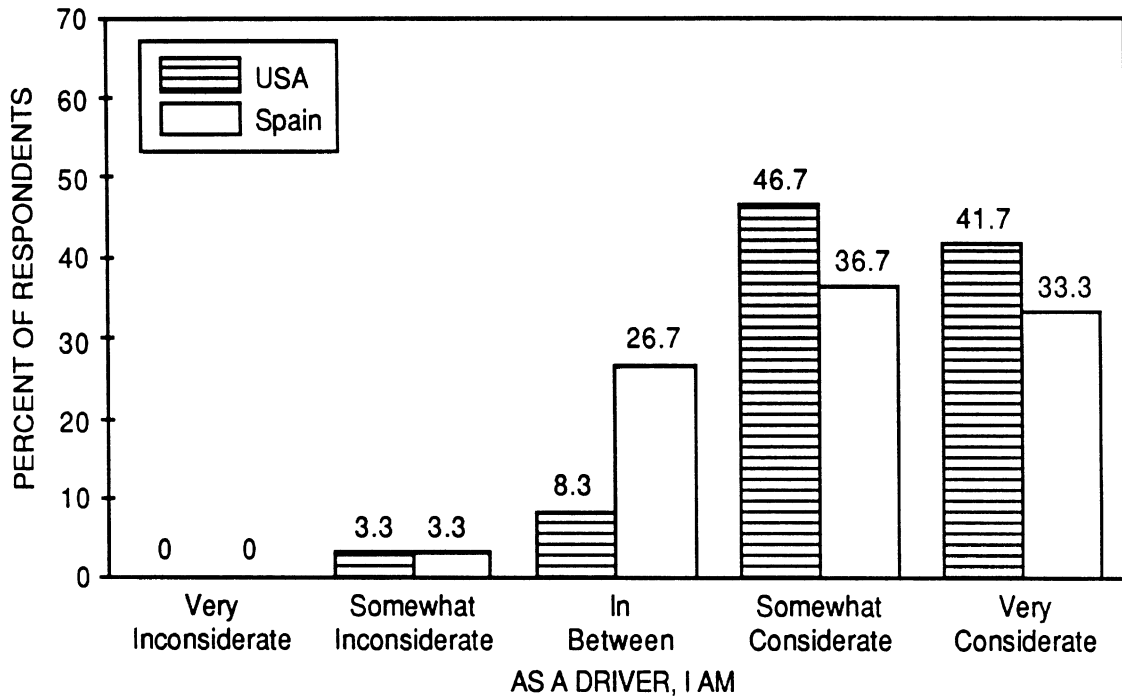Figure 4. Distributions of responses on the foolish—wise (absolute) scale.

Figure 5. Distributions of responses on the inconsiderate—considerate (absolute) scale.
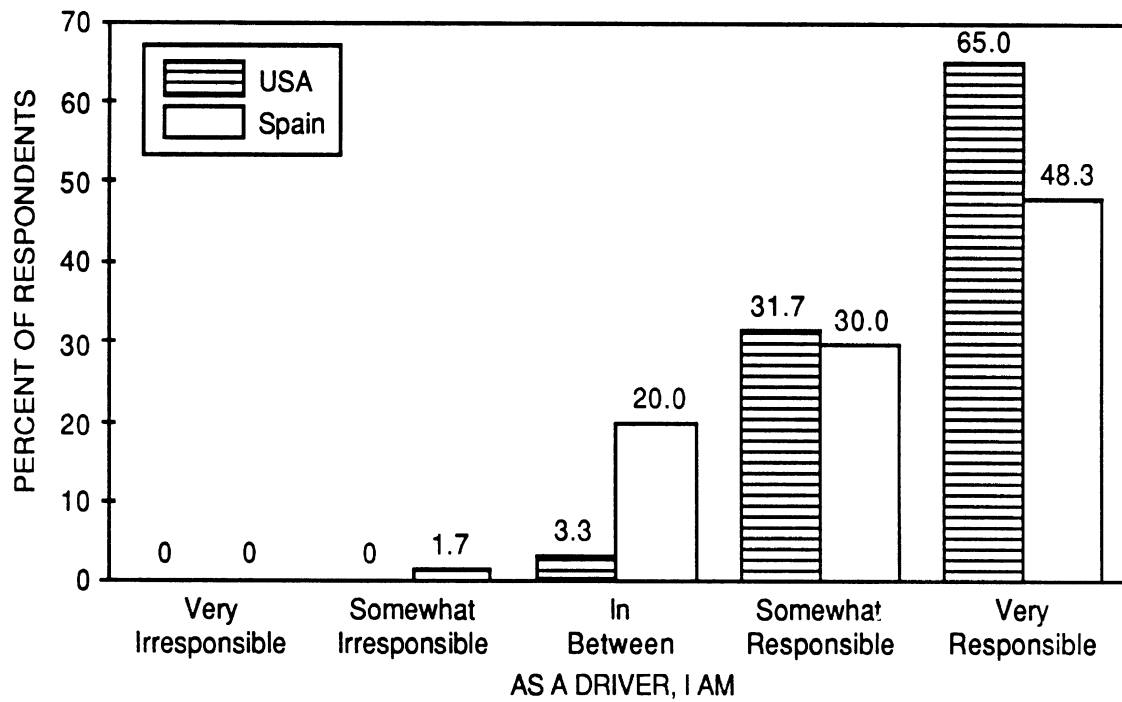

Figure 6. Distributions of responses on the irresponsible—responsible (absolute) scale.
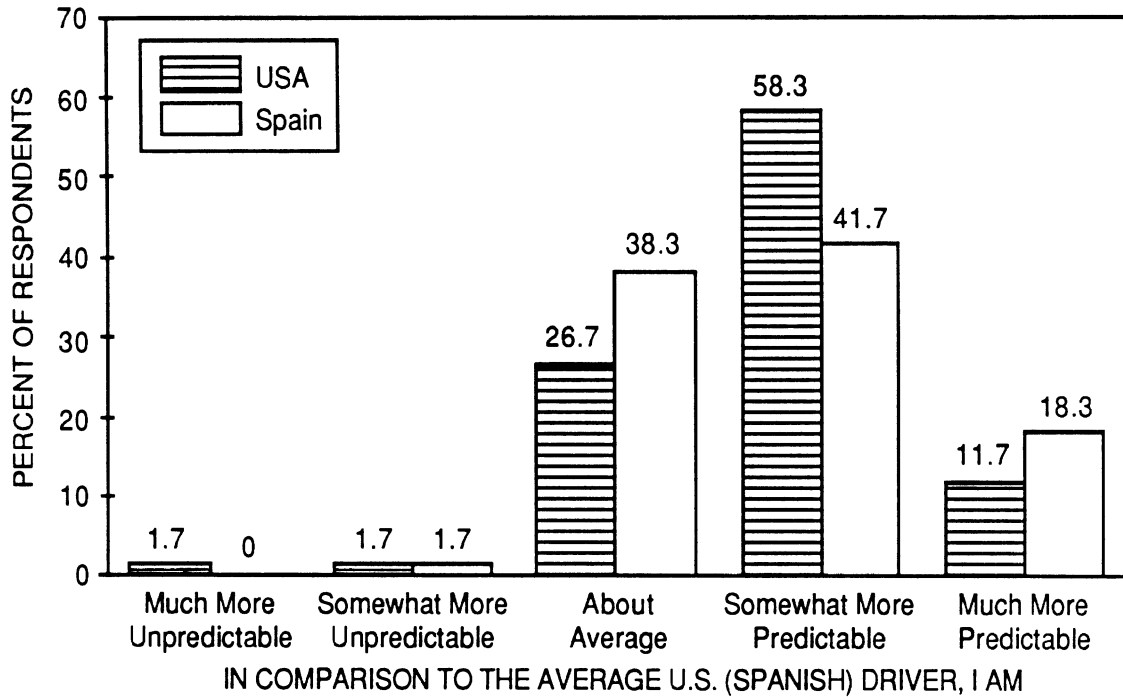
Figure 7. Distributions of responses on the unpredictable—predictable (relative) scale.

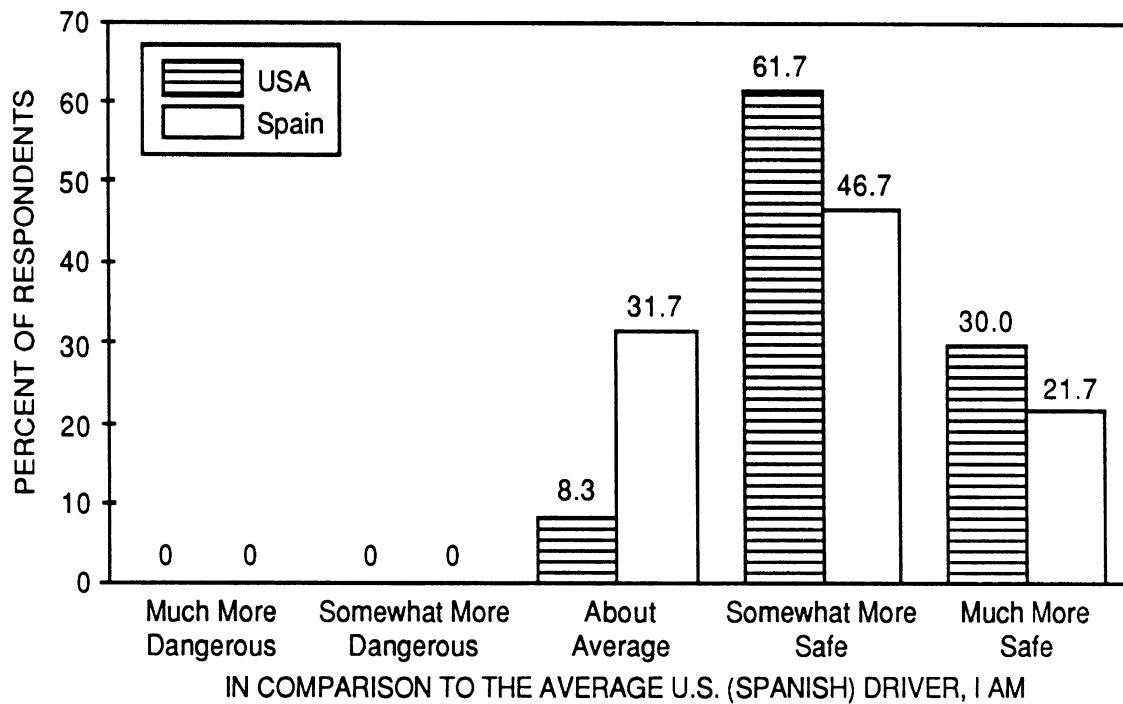Figure 8. Distributions of responses on the dangerous—safe (relative) scale.
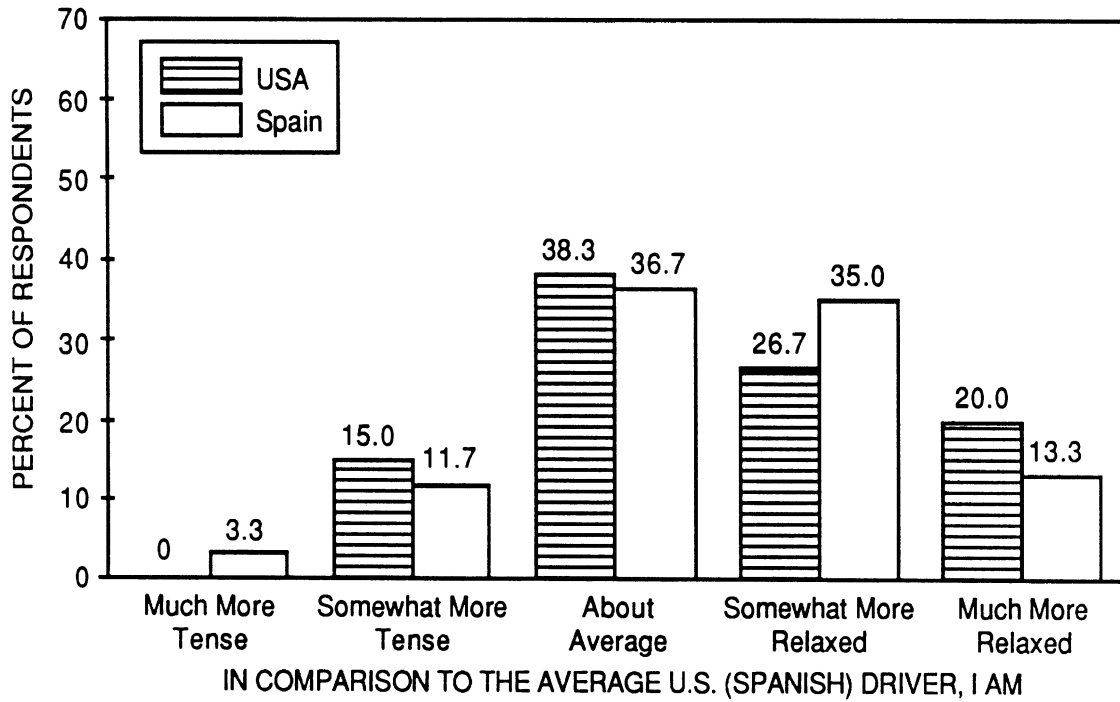
Figure 9. Distributions of responses on the tense—relaxed (relative) scale.
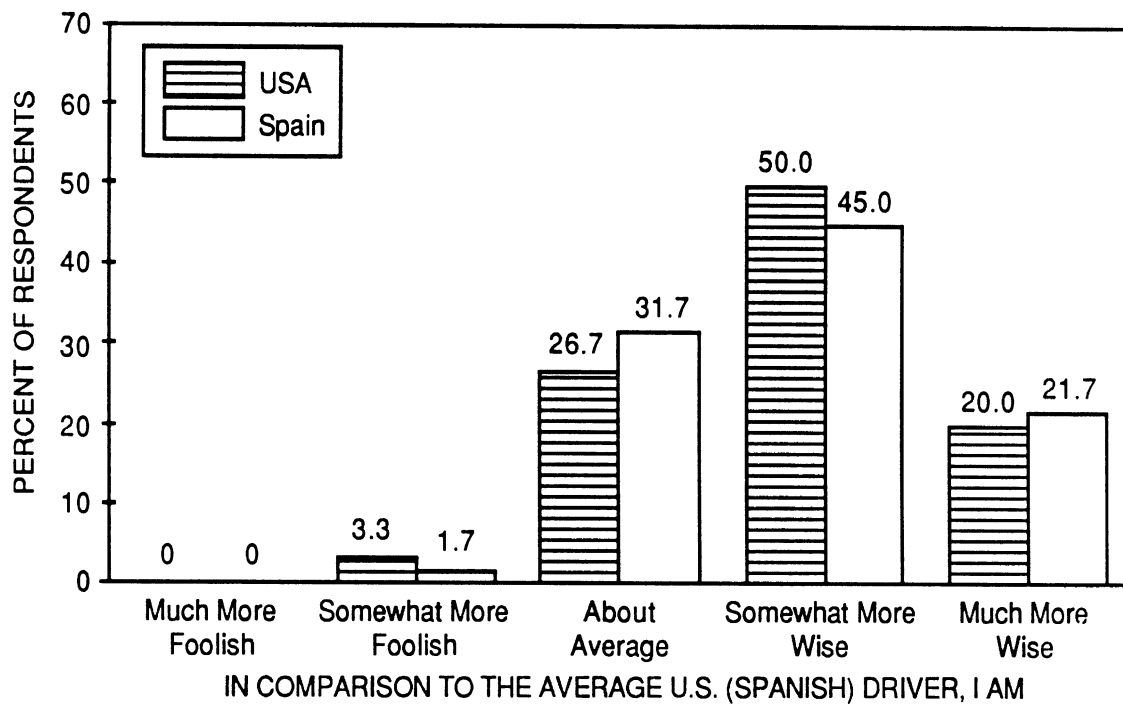
Figure 10. Distributions of responses on the foolish—wise (relative) scale.

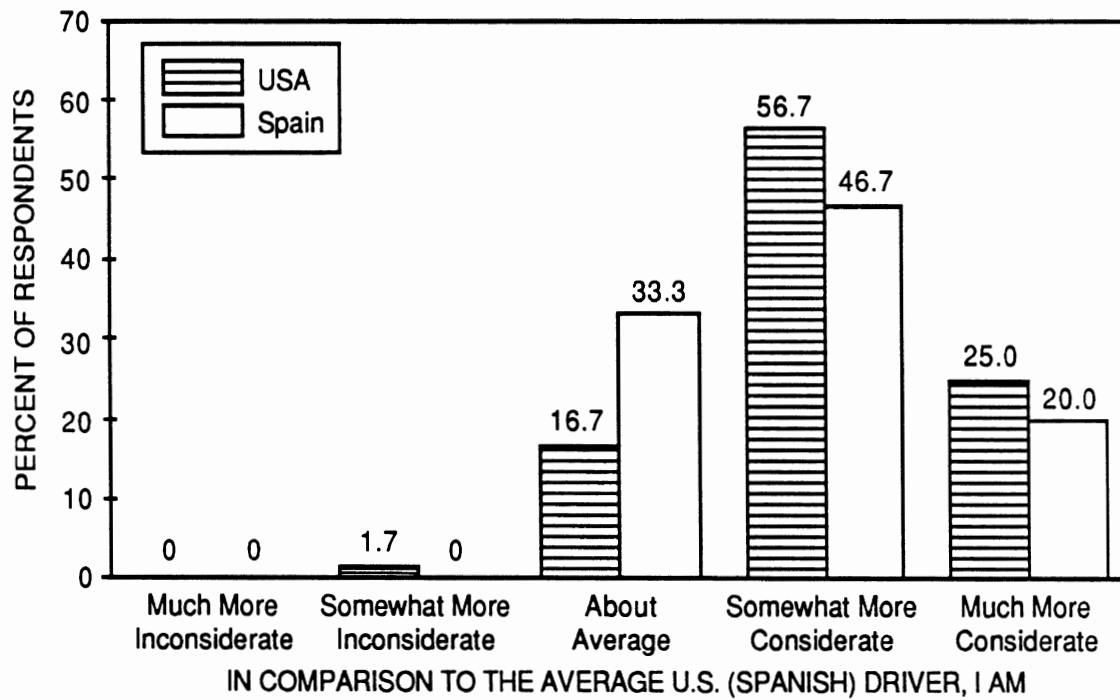Figure 11. Distributions of responses on the inconsiderate—considerate (relative) scale.
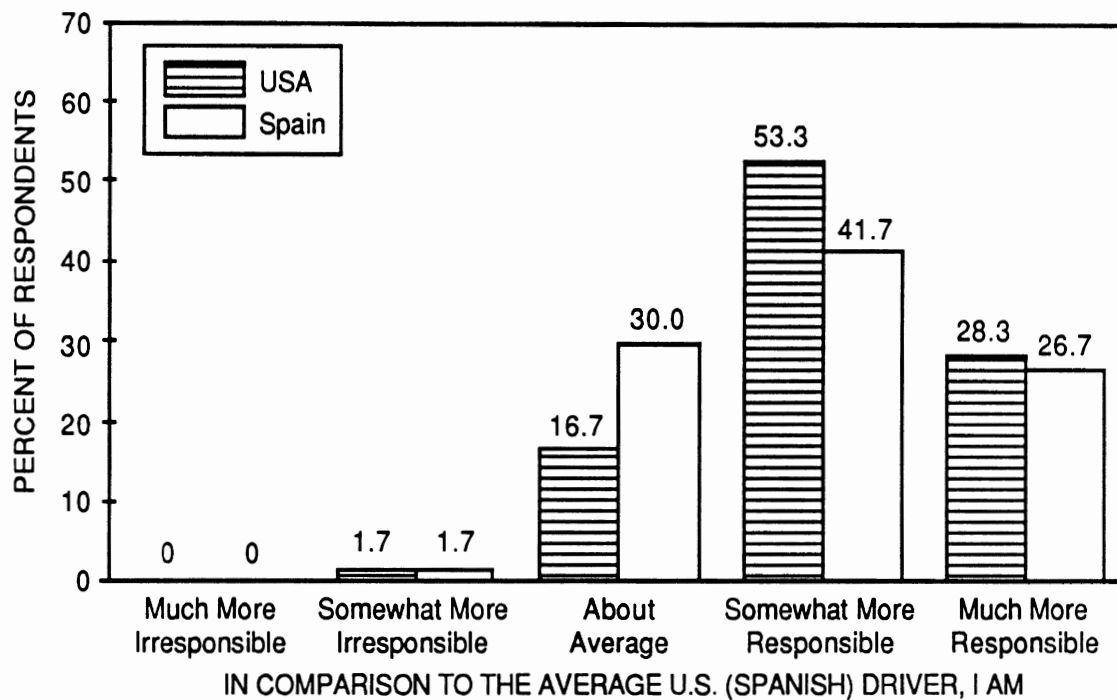
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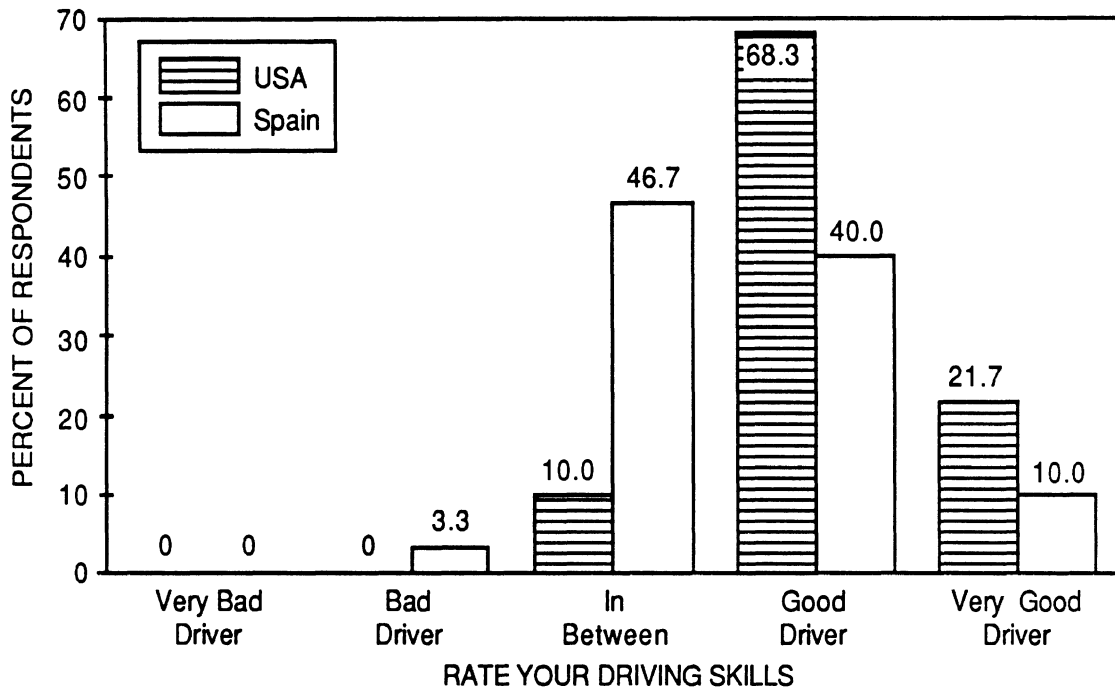
Figure 13. Distributions of responses on the driving-skills (absolute) scale.
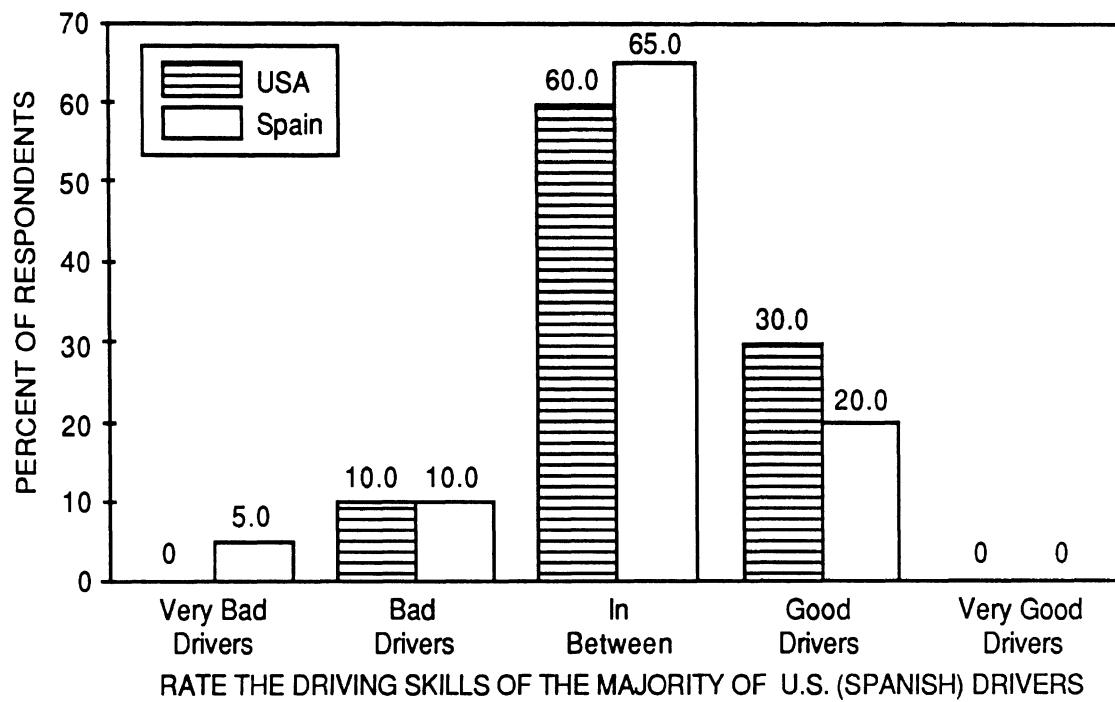
Figure 14. Distributions of responses on the driving-skills scale concerning the majority of drivers.

Cultural differences in distributions of responses were examined by performing a chi-square test on the cell frequencies for each question. The results of these analyses are presented in Table 2.

TABLE 2

Chi-square tests for cultural differences
in the distributions of the responses.

Scale	χ^2
Predictable (Absolute)	19.89‡
Safe (Absolute)	15.61‡
Relaxed (Absolute)	2.75
Wise (Absolute)	11.21†
Considerate (Absolute)	11.04†
Responsible (Absolute)	13.64‡
Predictable (Relative)	4.81
Safe (Relative)	18.22‡
Relaxed (Relative)	3.75
Wise (Relative)	4.79
Considerate (Relative)	9.25
Responsible (Relative)	7.18
Driving Skills (Absolute)	27.26‡
Driving Skills (Majority)	8.32

†Significant at $p < 0.05$.

‡Significant at $p < 0.01$.

Table 3 presents the results of a series of analyses of variance, investigating the effects of culture on the mean responses. The responses for these (and all subsequent analyses) were coded by assigning numbers 1 through 5 to the five response categories, from the most "negative" to the most "positive" response category.

TABLE 3

Analyses of variance, investigating cultural differences on responses.

Scale	Mean Rating		F
	Spain	U.S.A.	
Predictable (Absolute)	3.73	4.07	4.83†
Safe (Absolute)	3.82	4.42	16.02‡
Relaxed (Absolute)	3.57	3.70	0.51
Wise (Absolute)	3.92	4.07	0.78
Considerate (Absolute)	4.00	4.27	3.24
Responsible (Absolute)	4.25	4.62	8.01‡
Predictable (Relative)	3.77	3.77	0
Safe (Relative)	3.90	4.22	6.88‡
Relaxed (Relative)	3.43	3.52	0.22
Wise (Relative)	3.87	3.87	0
Considerate (Relative)	3.87	4.05	1.99
Responsible (Relative)	3.93	4.08	1.17
Driving Skills (Absolute)	3.57	4.12	21.89‡
Driving Skills (Majority)	3.00	3.20	2.74

†Significant at $p < 0.05$.

‡Significant at $p < 0.01$.

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Table 4 shows the results of t-tests for correlated samples on the differences in self-assessment on an absolute basis (Questions 1 through 6) and on a relative basis (Questions 7 through 12).

TABLE 4

Comparison of self-assessment on an absolute and a relative basis.
(Positive difference indicates that the absolute assessment
was more positive than the relative assessment.)

Scale	Spain			U.S.A.		
	Difference between absolute and relative self-assessment	t	p	Difference between absolute and relative self-assessment	t	p
Predictable	−0.03	−0.28	0.78	0.30	2.46	0.02
Safe	−0.08	−0.80	0.43	0.20	1.99	0.05
Relaxed	0.13	1.21	0.23	0.18	2.10	0.04
Wise	0.05	0.43	0.67	0.20	2.19	0.03
Considerate	0.13	1.38	0.17	0.22	2.27	0.03
Responsible	0.32	3.02	<0.01	0.53	5.90	<0.01

Table 5 presents the results of a series of multiple regressions, using the responses as the dependent variable and the demographic information as the independent variables. (Only demographic information that was significantly correlated with the dependent variable was entered into the regression analyses.) Since age group and years of driving experience were significantly correlated with each other (r = 0.82), no more than one of these two variables was used in a given regression. If both of these variables were correlated with the dependent variable, then two multiple regressions were performed, one with each of the two variables included. In such a case, Table 5 shows the results of the regression that accounted for more variance.

TABLE 5

Multiple regressions of responses on demographic information.
(Entries are beta weights significant at the 0.05 level.)

Scale	Beta Weight†				% Variance Accounted
	Country	Gender	Age/ Experience‡	Current Annual km	
Predictable (Absolute)	−0.09		*0.29*		11.3
Safe (Absolute)	−0.24		*0.28*		18.7
Relaxed (Absolute)§					
Wise (Absolute)			0.29		8.2
Considerate (Absolute)§					
Responsible (Absolute)			*0.26*		6.6
Predictable (Relative)§					
Safe (Relative)	−0.18		*0.14*		7.2
Relaxed (Relative)		−0.23			5.3
Wise (Relative)			0.27		7.2
Considerate (Relative)			0.23		5.3
Responsible (Relative)			0.24		5.9
Driving Skills (Absolute)	−0.40	−0.25			22.0
Driving Skills (Majority)			0.25		6.1

†Negative beta weights for culture and gender indicate that Spanish subjects and female subjects assessed themselves less positively; positive beta weights for age/experience indicate that older/more experienced subjects assessed themselves more positively.

‡Either age group or years of driving experience was used, depending on which one led to a greater amount of accounted variance. If years of driving experience was used, the entry is in *italics*.

§None of the beta weights were significant.

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Two questions dealt with assessment of "driving skills." One of these questions asked for a self-assessment, while the other asked for an assessment of the majority of drivers. To investigate the differences in these two assessments, t—tests for correlated samples were performed for the aggregate data, and separately for each culture. The results of these analyses are in Table 6.

TABLE 6

Driving Skills: A comparison of self-assessment and assessment of the majority of drivers.

Sample	Mean		t
	Self-Assessment	Assessment of the Majority	
Aggregate	3.84	3.10	9.00‡
Spain	3.57	3.00	4.48‡
U.S.A.	4.12	3.20	9.02‡

‡Significant at $p < 0.01$.

The relationship between the responses to the global question on "driving skills" (Question 13), and the responses to more specific questions (Questions 1 through 6) and demographic information was investigated by another multiple regression. The variables entered into this regression were significantly correlated with the responses on the "driving skills" question. The results are shown in Table 7.

TABLE 7

Multiple regression of driving-skills (absolute) assessment.

Scale/Variable	Beta Weight	S.D.	p
Predictable (Absolute)	0.19	0.08	0.02
Safe (Absolute)	0.27	0.08	<0.01
Relaxed (Absolute)	0.22	0.07	<0.01
Culture	−0.25	0.08	<0.01
Gender	−0.22	0.07	<0.01

$r^2 = 0.41$

DISCUSSION

Overall Pattern of Responses

A majority of subjects, both in Spain and in the U.S.A., viewed themselves positively on all driving-related scales studied. This finding is in agreement with previous studies, both in relation to driving (Svenson, 1981; McCormick et al., 1986) and other abilities (Brown, 1986; Regan, Gosselink, Hubsch, and Ulsh, 1975).

Cultural Differences in Responses

The distributions of responses in Spain were different from those in the U.S.A. on six out of seven questions using self-assessment on an absolute basis (predictable, safe, wise, considerate, responsible, and driving skills). The distributions were different on one out of six questions using self-assessment in relation to the average driver (safe). For the significantly different distributions, Spanish subjects tended to place themselves more frequently in the middle response category, while the U.S. subjects tended to place themselves more frequently in the positive categories. (There was no difference in the distribution of responses for the question dealing with driving skills of the majority of drivers.)

Only a slightly different picture emerges when means of response distributions are compared. (A difference in the distributions of responses is not a sufficient condition for differences in mean responses, and vice versa.) Analyses of variance showed that cultural differences between mean responses were present for five of the seven questions that showed differences in the distribution of responses. For all five of these questions, U.S. subjects rated themselves more positively than did Spanish subjects. (The Spanish and U.S. subjects, in addition to being drawn from different cultures, differed in other aspects, such as the size of the city of domicile, and recruitment for the study. Consequently, it cannot be excluded that the presumed cultural effects are due to differential sampling.)

Absolute vs. Relative Self-Assessment

U.S. subjects assessed themselves more positively when asked for evaluation on an absolute basis than in relation to the average driver. This was the case for all six scales that were administered in both modes (predictable, safe, relaxed, wise, considerate, and responsible). Spanish subjects showed this effect only for one scale (responsible). This finding could be the result of differential perception of the average driver in Spain and in the U.S.A. (whether veridical or not). Alternatively, Spanish subjects might have interpreted the "absolute" questions on a more "relative" basis than did U.S. subjects. Finally, it is also possible that Spanish drivers might have a stronger need to be more like other drivers.

Age Effect

The age of the subject (or the amount of driving experience) was, in general, a significant factor in self-assessment. (As expected, age and years of driving experience were highly correlated.) Specifically, middle-aged and older drivers tended to assess themselves more positively than did younger drivers.

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Gender Effect

The gender of the subject had an effect on two questions: relaxed (in relation to the average driver), and driving skills (on an absolute basis). In both cases, females assessed themselves less positively.

Predicting Driver Responses from Demographic Information

Multivariate analyses revealed that demographic information can account for a substantial amount of variance in responses to three scales (all on an absolute basis): Culture and gender accounted for 22% of the variance on the driving-skills scale, and culture and years of driving experience accounted for 19% on the safe scale and 11% on the predictable scale.

Predicting Global Driving-Skills Assessment from Assessment on Specific Questions

Responses on the driving-skills scale can be predicted relatively well from the responses on three absolute scales (predictable, safe, and relaxed), and from culture and gender. These five variables can account for 41% of the variance of the responses on the driving-skills scale.

Self-Assessment vs. Assessment of Others

Drivers in both countries assessed themselves more positively on driving skills than they did the majority of drivers. Furthermore, in both countries the mean rating for the majority of drivers was close to the middle (neutral) category.

Validity of the Self-Assessment

The ultimate question of interest is the relation of driver self-assessment to actual driver performance. The present data, along with preliminary data from an ongoing German study that uses the same questionnaire (Tränkle, personal communication), suggest that the responses to the absolute scales used in this study have a high degree of validity. In general, U.S. drivers assessed themselves more positively than did Spanish drivers, with an indication that German drivers assess themselves in-between U.S. and Spanish drivers. This ordering is consistent with the ordering of traffic accident rates in these three countries, with U.S. accident rate per km traveled being the lowest, followed by Germany and Spain (International Road Federation, 1984). Obviously, in addition to potential differences in drivers, many other parameters are different in these countries, including roadways, vehicles, and seat-belt use. Nevertheless, the correspondence between the self-assessment and accident rates is intriguing and deserving of further study.

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