

## Are Young Male Drivers More Overconfident than Older Male Drivers?

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This research examines whether young male drivers are more overconfident in their driving ability than older male drivers. Participants were employees, aged 18 to 39, who attended a one-day safe-driving course ( $N=183$ ). They assessed their own driving compared to the average driver using 5-point scales of safety-oriented driving, skillful driving, and overall driving, with the results based on the sum of two scales. Their driving abilities were also observed by an instructor in the passenger seat. Overconfidence was measured first by whether they assessed their own driving as being better than average, and then by whether their assessment was better than the observed assessment. A questionnaire indicated that the drivers were overconfident in safety-oriented driving and overall driving. Only young experienced drivers showed overconfidence in skillful driving. The results of an observational study indicated that young drivers, and young experienced drivers in particular, were more overconfident. The young drivers' overconfidence and the methods for measuring overconfidence are discussed.

**key words:** overconfidence, young male drivers, safety-oriented driving, skillful driving, observational study

This study examines whether young male drivers are more overconfident than older male drivers. There are two findings. One is that the majority of drivers, male drivers in particular, rate their driving skill as better than the average driver (Svenson, 1981; Dejoy, 1992; Groeger & Brown, 1989; Matsuura, 1999). Another is that young novice drivers have low confidence just after obtaining their driver's license, but their confidence increases rapidly thereafter, and they evaluate their skill as being as good as the average driver after two or three years of driving (Dejoy, 1989; Hatakka, 1998; Matsuura, Ishida, & Ishimatsu, 2002; Spolander, 1982, 1983).

The second result indicates that young novices may also be overconfident. However, considering the first result together with the second one suggests that the young may not be too overconfident compared to older drivers. Some studies indicate age

differences in overconfidence. Finn & Bragg (1986) and Matthews & Moran (1986) reported that young male drivers were more overconfident than older male drivers in accident risk and driving ability. Maycock & Forsyth (1997) found that young drivers were more overconfident than older drivers in driving skill. However, they also reported that older drivers were more overconfident than young drivers in avoiding risky situations and in cautious driving.

There are two methods for measuring a driver's overconfidence; one is self-evaluation of one's own driving ability compared to the average driver, the other is a comparison of driving ability between self-evaluation and observation. Almost all studies of drivers' overconfidence have been conducted by the first method (Matsuura, 1999). The logic of the method is that if a large portion of participant drivers who are presumably average assess their driving

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driving course at the training center (Fig. 1). The instructors observed the participants' driving skills and safety-oriented driving styles to determine whether they drove skillfully and safely obeyed traffic rules. A total error score was given to each participant. The driving abilities that were observed included safety checks, positioning, signaling, speed, and car control. These abilities could not be separated into skillful driving and safety-oriented driving, and therefore only one driving ability score was used in the observed driving scale. The scale was obtained by subtracting the total error score from 30 (see Table 3). This conversion was made because the error score was inversely proportional to the driving ability score.

### Overconfidence

Overconfidence was measured by two methods, self-evaluation of one's own driving compared to the average driver and a comparison between the self-evaluation and observation. If a large portion of the participant drivers in the self-evaluation method are considered to be average drivers and they self-evaluate their own driving as better than the average driver, they are presumed to be overconfident as a group. The participant drivers in this method should be compared to a similar group of drivers. If the participant drivers include inexperienced drivers who are supposedly worse than average, as in this study, the driving ability of similar inexperienced drivers

should be used for the comparison. However, it is possible to conclude that inexperienced drivers are overconfident if they self-evaluate their own driving as being as good as or better than average drivers. If respondents consider that they drive as well as the average driver, their mean driving score would reach nine points on the safety-oriented driving scale and the skillful driving scale. Thus, whether the mean of the scale is nine or not is tested in these cases in order to examine their overconfidence.

Both the self-evaluated and observed driving ability scores were converted to T scores with a mean of 50 and a standard deviation of 10 for the second method. The transformation was performed to place the two driving scores on a common scale, making it easier to compare the values to determine whether a driver (or a group of drivers) is overconfident. A driver was presumed to be relatively overconfident when the T score of his self-evaluated driving was greater than that of his observed driving ability.

## RESULTS

### Self-evaluation by the drivers

Table 1 presents the mean and standard deviation of each self-evaluated driving scale. One-sample *t* tests were conducted to examine whether respondents evaluated their driving as better or worse than the average driver, *i.e.* more or less than 9 points for safety-oriented driving and skillful driving scales and more or less than 18 points for the overall driving scale. The results indi-

**Table 2** Overconfident assessment of own drivings in the four groups

Group	Safety-oriented driving		Skillful driving		Total (Overall driving)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Young inexperienced ( <i>n</i> =79)	9.78	1.96**	8.76	2.74	18.54	3.83
Young experienced ( <i>n</i> =21)	8.86	1.77	10.29	2.10*	19.14	2.74 <sup>+</sup>
Older inexperienced ( <i>n</i> =32)	9.34	1.54	8.09	1.89*	17.44	2.42
Older experienced ( <i>n</i> =51)	9.61	1.76*	9.22	1.35	18.82	2.50*

*Note.* Asterisks (\*) indicate the mean is significantly different from test value.

Test value =9 for safety-oriented driving and skillful driving, and =18 for overall driving.

<sup>+</sup> *p* < .1, \* *p* < .05, \*\* *p* < .01.

cated that the participant drivers were as a group overconfident in safety-oriented driving and overall driving. The score for safety-oriented driving was significantly greater than 9 ( $t=4.09, p<.001$ ), and the percentage of drivers who rated their driving as more safety-oriented (10 to 15 points) was 43.2%, higher than the 22.4% of drivers rated as less safety-oriented (3 to 8 points). The overall driving score was significantly greater than 18 ( $t=2.12, p<.05$ ) and the percentage of drivers who rated their driving as better than average (i.e. 19 to 30 points) was 44.8%, greater than the 31.7% of drivers rated as worse than average (6 to 17 points). The respondents assessed their driving as being as skillful as the average driver.

The correlation coefficient between the self-evaluation of safety-oriented driving and that of skillful driving was small but significantly greater than 0 ( $r=.19, p<.05$ ).

**Group differences in self-evaluations**

Participant drivers were classified into four groups in terms of age (young, aged 18 to 24; older, aged 25 to 39) and experience (inexperienced, under 45,000 km of total distance driven; experienced, equal or over 45,000 km of total distance driven). The four groups consisted of a young inexperienced group (Group 1,  $n=79$ ), young experienced group (Group 2,  $n=21$ ), older inexperienced group (Group 3,  $n=32$ ), and older experienced group (Group 4,  $n=51$ ).

Self-evaluations compared to the average driver and overconfidence tendencies differed among the four groups (Table 2). The drivers in group 1, young inexperienced drivers, assessed their driving as better than average for safety-oriented driving. They may actually drive more carefully and follow the road rules better than average drivers. Thus, this evaluation does not necessarily indicate overconfidence. The drivers in group 2, young experienced drivers, assessed their driving as better than average for skillful driving. This evaluation may indicate overconfidence since their skillful driving ability may not actually be better

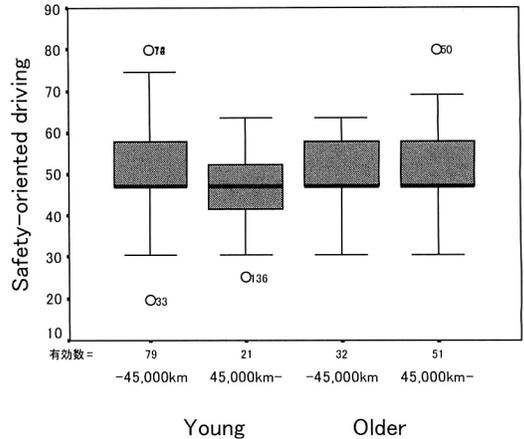


Figure 2 Self-assessment of safety-oriented driving in the four groups

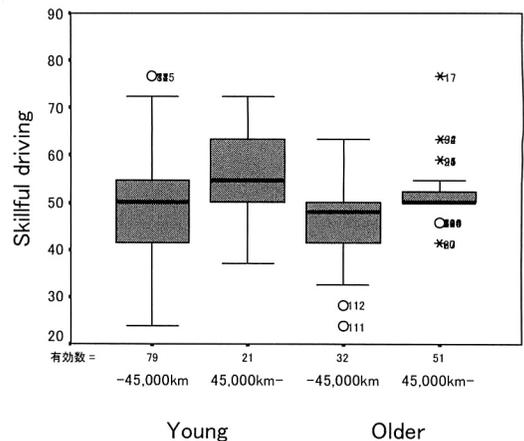


Figure 3 Self-assessment of skillful driving in the four groups

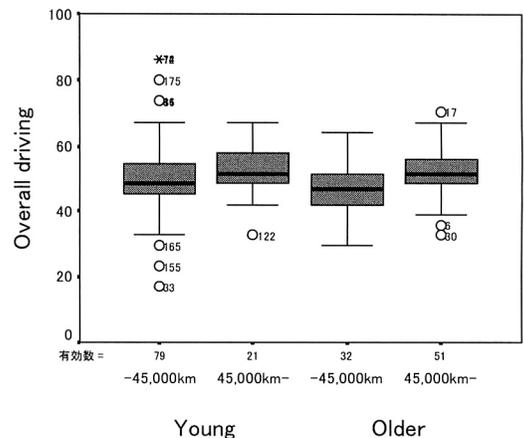


Figure 4 Self-assessment of overall driving in the four groups

than average. The drivers in group 3, older inexperienced drivers, assessed their driving as worse than average for skillful driving. This evaluation is probably correct, considering their poor skills compared to average drivers. The drivers in group 4, older experienced drivers who are supposedly average drivers, assessed their driving as better than average for safety-oriented driving and overall driving. These assessments appear to suggest overconfidence.

We examined the comparisons among the four groups for self-evaluations of each component of driving to clarify the characteristics of young drivers. A two-way ANOVA with age and experience (total distance driven) as the explanatory variables and with each self-evaluated driving skill as a dependent variable was conducted for each component of driving with multiple comparisons by the Scheffe method for the four groups. The ANOVA for self-evaluation of safety-oriented driving revealed a marginal age  $\times$  experience interaction ( $F(1, 179)=3.88, p=.05$ ), indicating that the experienced drivers in the young driver groups (Group 2) rated their driving as less safety-oriented than inexperienced drivers (Group 1), as illustrated in Fig. 2. Multiple comparisons indicated no significant difference among the four groups ( $F(3, 179)=1.62, p=.19$ ). Figure 3 illustrates that young or experienced drivers assessed their driving as more skillful than older or inexperienced drivers in self-evaluated skillful driving ( $F(1, 179)=5.55, p<.05$ , and  $F(1, 179)=12.92, p<.001$ ). Multiple comparisons revealed that young experienced drivers (Group 2) regarded their driving as more skillful than older inexperienced drivers (Group 3) and young inexperienced drivers (Group 1), with  $p<.05$ . Experienced drivers (drivers in Group 2 and Group 4) assessed their driving as marginally better than inexperienced drivers (Group 1 and Group 3) in self-evaluated overall driving ( $F(1, 179)=3.55, p=.06$ ) (Fig. 4). Multiple comparisons indicated no significant difference among the four groups.

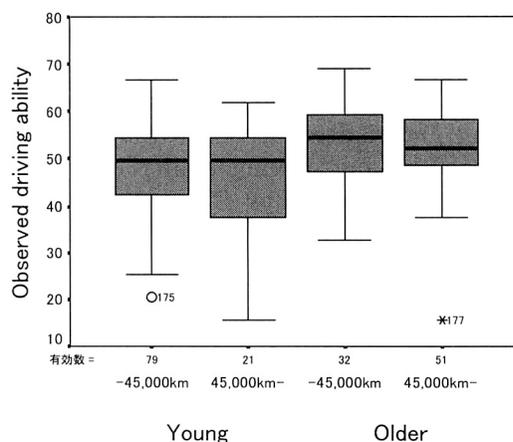
Correlations between self-evaluations of

**Table 3** Means and standard deviations of observed driving error and driving ability

Item observed	Number of items	Observed errors	
		<i>M</i>	<i>SD</i>
Safety check	8	4.49	2.44
Positioning	6	2.75	1.84
Signalling	4	1.45	1.24
Speed	6	0.96	1.21
Car control	7	0.79	1.00
Others	3	1.45	1.27
Total	34	11.89	4.12
(Driving ability)	34	18.11	4.12)

*Note.* The range of the total error score was between 4 and 26. The driving ability score with a mean ( $=18.11$ ) was obtained by subtracting the total error score from 30, after which the range of the driving ability score was between 4 and 26, the same as that of the total error score.

safety-oriented driving and skillful driving also differed among the four groups. The correlations were only significant in the young inexperienced group ( $r=.31, p<.05$ ) and older experienced group ( $r=.28, p<.05$ ). This suggests that drivers in the two groups who considered themselves to be more skillful also tended to consider themselves to be more safety-oriented. Drivers in the other two groups demonstrated no significant correlations ( $r=.00, r=-.01$ ).



**Figure 5** Instructor-observed driving ability in the four groups

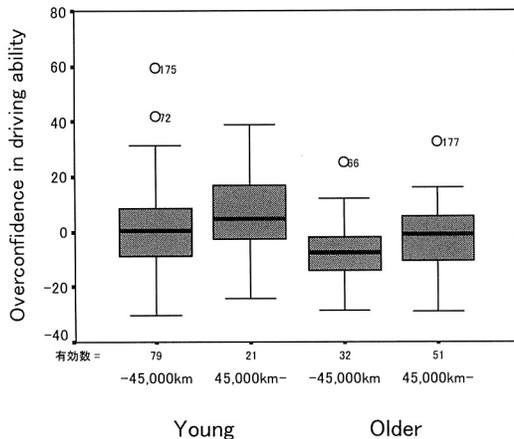


Figure 6 Overconfidence in driving ability in a comparison of self-assessment with instructor assessment

### Observed driving ability

The components of driving ability observed by the instructors included safety checks, positioning, signaling, speed, and car control. The mean errors of each driving item are provided in Table 3. Each error score was summed for a total error score, and it was then converted to a driving ability score by subtracting it from 30.

A two-way ANOVA with age and experience (i.e. total distance driven) as explanatory factors and with observed driving ability as the dependent variable was conducted with multiple comparisons by the Scheffe method for comparisons among the four groups. The ANOVA revealed a significant age effect, indicating that young drivers exhibited driving ability inferior to that of older drivers ( $F(1, 179)=15.63, p<.001$ , see Fig. 5). Multiple comparisons revealed that young experienced drivers (Group 2) were rated as having driving ability inferior to that of the older groups (Group 3 and Group 4,  $p<.05$ , respectively).

### Comparison of driving ability between self-evaluation and observation

We compared T scores of a driver's self-evaluated driving ability and the observed driving ability to examine whether the driver was overconfident. The same analysis as described above was conducted for compari-

sons among the four groups. Figure 6 indicates that the young groups were more overconfident than the older groups ( $F(1, 179)=14.23, p<.001$ ), and experienced groups were more overconfident than inexperienced groups ( $F(1, 179)=5.75, p<.05$ ). Multiple comparisons indicated that young drivers, and young experienced drivers in particular, displayed greater overconfidence than older inexperienced drivers.

## DISCUSSION

We examined drivers' overconfidence using two methods. One method, self-assessment of the driver's own driving in comparison with average drivers, investigated overconfidence in safety-oriented driving, skillful driving, and overall driving abilities. The other method, a comparison of driving ability between self-evaluation and observation, examined overconfidence in overall driving ability.

The first method could not determine whether an individual driver was overconfident, but it could indicate whether drivers as a group were overconfident. An important factor in this method is that the participant drivers should be similar to the comparison drivers. For example, if they are average drivers, then the comparison drivers should also be average drivers. We compared four groups of drivers in this paper (young inexperienced drivers, young experienced drivers, older inexperienced drivers, and older experienced drivers) with average drivers. The three groups other than older experienced drivers (aged 25 to 39 with total distance driven over 45,000 km) were considered to have poorer driving ability than the average driver.

The second method, which compared self-evaluations of overall driving ability with the instructor's evaluations while driving in a course, examined the overconfidence of an individual driver as well as a group of drivers. The driving components to be self-evaluated in this method should be identical or at least correspond to the driving components to be observed. For example, if partici-

pant drivers self-assessed their skillful driving ability, then driving behavior related to skill should be observed by the instructor. The self-evaluation scale of driving components in this research consisted of safety-oriented driving and skillful driving, which were described in general terms. In contrast, the driving components evaluated by the instructor were based upon concrete driving behavior. We regarded the driving components of both self-evaluation and the instructor's evaluation as similar since the observed driving behavior reflected safety-oriented driving and skillful driving.

We defined the overconfidence score by the T-score of the self-evaluated driving ability score—the T-score of the observed driving ability score instead of by the self-evaluated driving ability score—the observed driving ability score since the scales of self-evaluation and observed evaluation were not identical. The self-evaluated driving ability score—observed driving ability score would have been used as the overconfidence score if the same scale was used. Further, use of the T-scores enabled us to determine relatively which group of drivers was more overconfident than the other groups of drivers.

The results for the first method, self-assessment in comparison with the average driver, indicated that the participant drivers, particularly older experienced drivers, who were considered to be near average despite being somewhat younger than the average driver, were overconfident in safety-oriented driving and overall driving but not overconfident in skillful driving. These results are consistent with those reported in other studies (Svenson, 1981; Dejoy, 1992; Groeger & Brown, 1989; Matsuura, 1999), except for the result that the drivers were not overconfident in skillful driving. They may have been found not overconfident in skillful driving as a result of their rating themselves as less skillful because they knew their driving skill would be evaluated by the instructor after the self-assessment. They may have considered it socially un-

desirable to provide a self-assessment that was better than the instructor's evaluation.

The result that young experienced drivers self-assessed their own driving as more skillful than the average driver was in agreement with previous studies (Matsuura et al., 2002; Matthews & Moran, 1986; Maycock & Forsyth, 1997). This result may indicate that they are overconfident, since their skillful driving ability was considered to be, at most, as good as the average driver (Evans, 1991; Summala, 1987).

The results for the second method, the comparison of overall driving ability between self-evaluation and observation, indicated that young drivers, and the group of young experienced drivers in particular, exhibited the greatest overconfidence tendency of the four groups. They were not only relatively but also absolutely overconfident, since the four groups of drivers as a group exhibited overconfidence, as indicated in Table 1.

Finally, why did young experienced male drivers reveal a greater overconfidence in driving skill, with relatively better self-assessments than the instructor's evaluations? It has been reported that young male drivers tend to increase their assessments of their own driving skills rapidly after obtaining a license and that they tend to assess themselves as being as good as the average driver after two or three years of driving (Dejoy, 1989; Hatakka, 1998; Spolander, 1982, 1983). However, this study indicated that they did not develop safety-oriented driving abilities with driving experience, the same result as in a previous study (Hattaka, 1998). This probably led to a lower observer assessment and greater overconfidence. In conclusion, male drivers under 40 years old, and younger somewhat experienced drivers in particular, displayed overconfidence in their driving ability.

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