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VEHICLE DAMAGE SCALE FOR TRAFFIC ACCIDENT INVESTIGATORS: AN INVESTIGATION OF ITS USE AND POTENTIAL FOR PREDICTING DRIVER INJURY

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ABSTRACT

This study investigated the degree to which a state highway patrol unit would report valid TAD vehicle damage ratings. It also explored the relationship between TAD severity ratings and degree of driver injury. Such a relationship was compared to other correlations.

The North Carolina State Highway Patrol began using the TAD scale on April 1, 1971. The reports covering the six months of April through September comprised the data set.

It was found that 93 percent of the accident reports involving passenger cars had an acceptable TAD rating. These ratings correlated .45 with degree of driver injuries—higher than any other item routinely collected. The degree of multiple correlation between a selected number of variables with and without TAD was also compared. The degree of multiple correlation without TAD was .10. This was increased to .26 when TAD was added to the variable set. It was concluded that the TAD scale is a useful estimate of crash severity as well as a control variable in future research.

INTRODUCTION

In recent years, much attention has turned to devising a tool that measures vehicular damage as an estimation of crash severity. Various indices and scales have been developed to assist field investigators and researchers. The Abbreviated Injury Scale (AIS), the Vehicle Deformation Index (VDI), and the Traffic Accident Data Project Vehicle Damage Scale (TAD) are some examples.

The purpose of this study was to field evaluate one of these scales; namely, the Vehicle Damage Scale for Traffic Accident Investigators (TAD) as developed by the Traffic Accident Data Project of the National Safety Council. Specifically, two questions were asked: How well will police investigators use and report TAD ratings? Also, if reported what is the relationship between TAD ratings and degree of driver injury? If there is a relationship between injury severity and TAD severity, then such ratings could be used as a measure of crash severity and allow highway administrators and others to compare accident types.

Burke (1970) addressed the question of comparability of accidents in his study of accident costs. Burke attempted to compare accident costs as reported by various states. Were these accidents comparable on the basis of severity? If there is a relationship between TAD and severity, the TAD rating could be used in such comparisons. Or, in other words, as a "control" variable.

Michalski (1968) in a field study of accidents in Oregon found that "the proportion of cars in which injuries occurred in relation to damage ratings is nearly parabolic in form . . . suggesting that incidence of injuries is proportional to the square of damage ratings" (pg. 37).

Olson, Post and McFarland (1969) applied TAD ratings to vehicles crash tested into a barrier and also found that "average vehicle decelerations are directly proportional to: a) the proportion of damaged vehicles . . . in which occupant injuries occurred and b) the square of the vehicle damage rating" (pg. 42).

Rouse and Gendre (1969) conducted a preliminary field evaluation of the rating scale. The objectives of their study were to determine the inter-rater reliability of the scale, the scale characteristics, and the correlation between driver injuries and damage ratings in comparison to reported collision speed and estimated dollar damage.

Concerning the reliability of the scale, Rouse and Gendre found that 17 trained patrolmen "agreed on the type of damage of a vehicle about 80 percent of the time and that their rating of the severity of damage agreed about 90 percent of the time" (pg. 30). The authors concluded that although there were some problems with consistent overestimates or underestimates the inter-rater reliability was high enough to warrant fuller implementation of the scale.

However, when the investigators evaluated the scale in terms of psychological distance between points, they found that the pictures did not fulfill the requirements necessary for an equal-appearing interval scale. However, this is not a serious limitation of the scale's usefulness as both a research and an administrative tool. A scale need not be an equal appearing interval scale to be predictive. In fact, in preliminary analyses by Rouse and Gendre the power of the TAD scale to predict injuries was good. As the authors report, "Damage rating, speed, and cost were found to be significantly correlated with driver injuries . . . " (pg. 31). This present study was an extension of the previously described study.

THE TAD SCALE

The TAD Damage Rating Scale, as it was used in North Carolina, consists of 10 sets of three pictures which allows the patrolman to rate the most common type of damage in terms of a 7-point scale as described below (see Figure 1).

Basically, the vehicle damage scale includes several pages of photographs of automobiles damaged in crashes. There is a separate page for each of the common impacts that investigators are likely to encounter. (The codes are shown in Table 1.)

In order to rate damage on a vehicle, the user must select the proper page of photographs and then attempt to match the damage on the subject vehicle with one of the photographs appearing on the page. On each of the pages in the damage rating section, there is a code for each point of impact: F.C., L.P., R.F.Q., etc., and three photographs (in some cases 3 two-view sets of photographs), showing automobiles damaged in crashes. For example, the "F.C." page is shown in Figure 1.

Damage in the top photographs is minor and generally limited to dents and gouges in body sheet metal and trim. The damage rating corresponding to these photographs is "2."

The second photographs, or sets of photographs, show automobiles that have been moderately damaged, with considerable crumpling of body sheet metal, but little or no distortion of the basic structure or frame. The damage rating in this case is "4."

In the photographs at the bottom of each page, vehicles are severely, but not totally damaged. Sheet metal is severely distorted, torn, or crumpled; the basic structure of the car is distorted somewhat and there is usually some penetration of the passenger compartment. The damage rating is "6."

The use of ratings 2, 4, and 6 allows the investigator who is unable to match damage on the subject vehicle with any of the standards to use a value greater than or less than the standard. In such cases the ratings 1, 3, 5, 7 may be used for damage less than or greater than that pictured. For example, a rating of "3" would correspond to damage greater than the "2" picture but not as severe as the "4."

Severity Scale FC - Front End Damage
Concentrated Impact

This scale is applicable to damage to midsection of front of subject vehicle resulting from a collision with a tree, utility pole or other narrow fixed object.

Damage Rating

FC-1

FC-2

FC-3

FC-4

FC-5

FC-6

FC-7

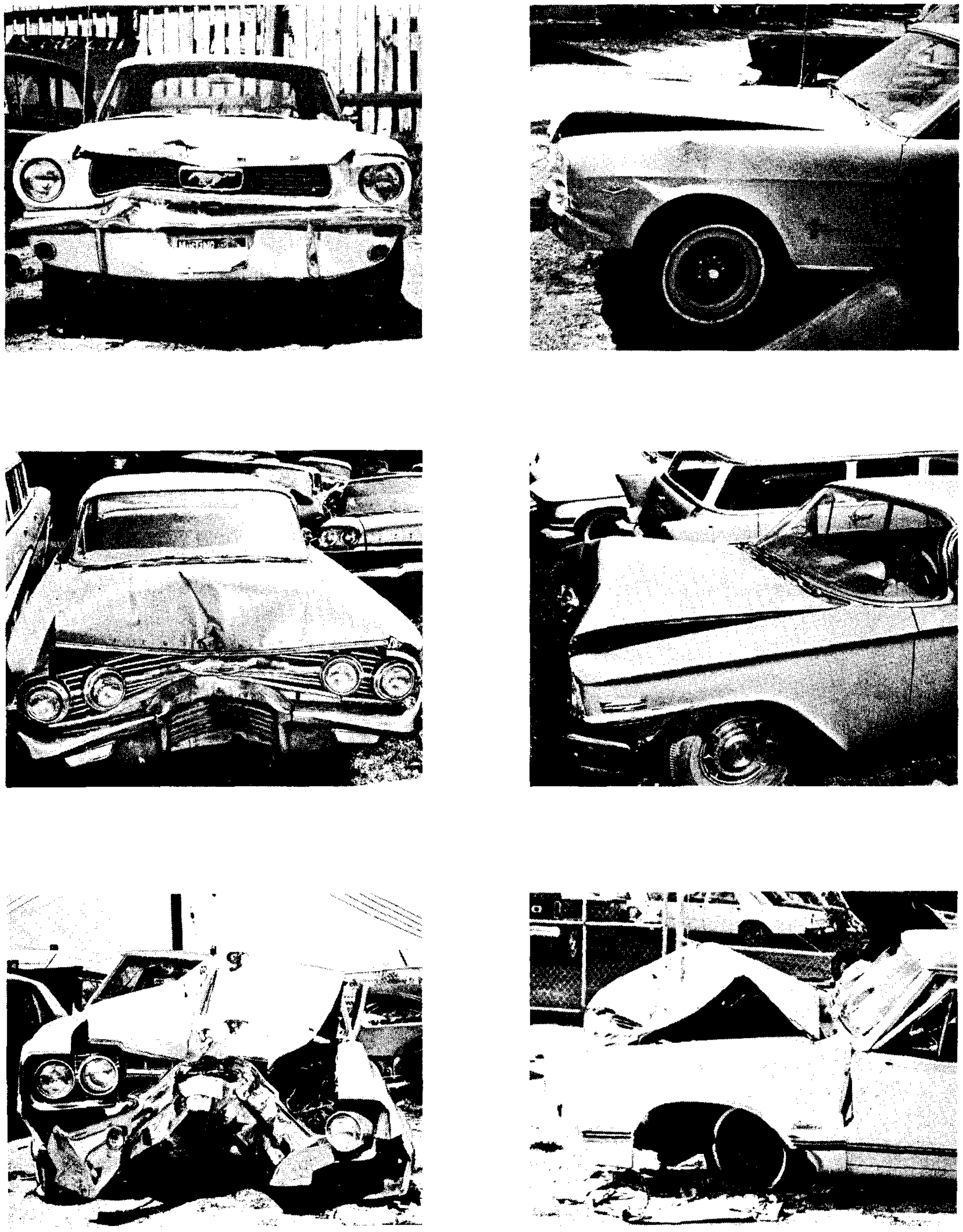

Figure 1. Example of "FC" page from TAD manual as it was used in this study.

Table 1. Vehicle crash categories with manual and acceptable code designations.

Type of Damage	Manual Code	Accepted Codes
Front Distributed: Damage Extends Across Front of Vehicle	FD	DF
Front Concentrated: Damage Due to Collision With Narrow Object	FC	CF
Front Left/Front Right: Damage to Front Corner Due to Partial Contact	FL/FR	LF/RF
Back Distributed: Damage Extends Across Back of Vehicle	BD	DB,RD,DR
Back Left/Back Right: Damage to Rear Corner Due to Partial Contact	BL/BR	LB,RL,LR/RB,RR
Back Concentrated: Damage to Back Due to Collision With Narrow Object	BC	CB,RC,CR
Left/Right Side: Damage Due to "Sideswipe"	LSS/RSS	SLS,SSL,SRS,SSR
Left/Right Back Quarter: Damage Due to An Angle Impact	RBQ/LBQ	BRQ,BQR,RQB,QRB,QBR, BLQ,BQL,LQB,QLB,QBL
Left/Right Passenger Compartment	LP/RP	PL,PR
Left/Right Front Quarter	LFQ/RFQ	RQF,FQR,FRQ,QFR,QRF, LQF,FQL,FLQ,QFL,QLF
Right/Left Top: Damage Due to Roll Over	R&T/L&T	LT,TL,RT,TR

REPORTING OF RATINGS AND INTERNAL CONSISTENCY

Method

In the spring of 1971 the North Carolina State Highway Patrol inaugurated the state-wide use of the TAD scale. The Patrol, with assistance of the Highway Safety Research Center staff, trained each accident investigator in the use of the scale. On April 1, 1971, patrolmen began reporting TAD vehicle damage ratings. North Carolina was the first state in the nation to use TAD ratings on a permanent basis.

The subsequent analyses of the ratings were addressed to three questions: With what frequency and accuracy will the Patrol report TAD ratings? Second, what is the internal consistency of the ratings? That is, do the ratings agree with other estimates of damage now collected on the state accident report form? Third, what is the degree of association between TAD severity and severity of driver injury?

Reporting

During the months of April through July 1971 the State Highway Patrol reported on 26,043 passenger cars involved in crashes within their jurisdiction. Of these automobiles 24,346 cases, or 93.5 percent, had an acceptable TAD rating. A TAD rating was considered acceptable if both the alphabetic code and the numeric severity levels were within the prescribed limits. The limits acceptable for the area damaged were those shown in Table 1. A TAD rating was considered valid even though the code characters might have been reversed. For example, the manual instructs the rater to indicate damage across the front of a vehicle as "FD—"; if the patrolman reported this as "DF—" it was accepted. Of the remaining cases, 340, or 1.3 percent, were blank, while 1357, or 5.2 percent, had an unacceptable code combination, an erroneous character or else the numeric degree of severity was omitted.

As shown in Table 2, there were virtually no differences between the months. Percentages of valid ratings were essentially the same in each of the four months.

Internal Consistency

Unlike the Rouse and Gendre study, the present investigation could not compare the accuracy or validity of the ratings to an external criterion. Therefore, an internal measure of consistency was sought.

The standard North Carolina report form asks the investigator to indicate the point of initial contact of the damaged vehicle. As shown in Figure 2, the patrolman is to indicate damage on an eight point scale beginning with front center and proceeding in clockwise rotation.

Table 3 is a cross tabulation of TAD ratings by this point of contact. The points of contact considered by this investigator and two other members of the HSRC staff to be consistent with the respective TAD rating are shown in column two of Table 3. It should be noted that the point of contact (indicated by 1 to 8) is the initial point of contact while the TAD rating is of the area most severely damaged. Since the initial point of contact is not necessarily the area most severely damaged, one would not expect 100 percent agreement between TAD and initial point of contact.

It should also be noted that these represent collisions-on-road accidents. The point of contact for any car striking an object off-the-road is coded as a "9." Except for the overturns (L&T, R&T), these cases were not represented in the data in Table 3.

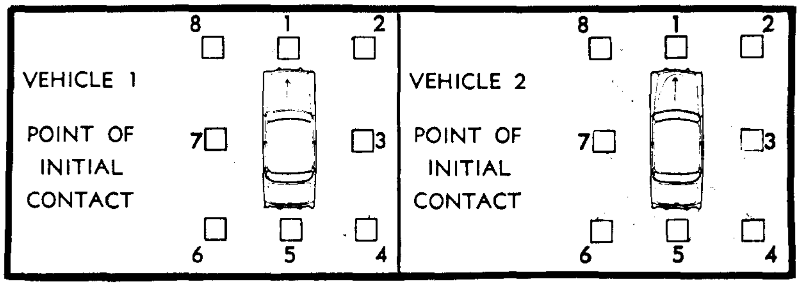

Figure 2. Point of initial contact as indicated on the Standard North Carolina Accident Report Form used in this study.

Table 2. Reporting of acceptable, blank, and non-acceptable TAD ratings by each month.

MONTH	BLANK f	BLANK %	NON-ACCEPTABLE f	NON-ACCEPTABLE %	ACCEPTABLE f	ACCEPTABLE %	TOTAL
April	73	1.2	307	5.0	5721	93.8	6101
May	84	1.2	347	4.9	6647	93.9	7078
June	85	1.4	337	5.4	5787	93.2	6209
July	98	1.5	366	5.5	6191	93.0	6655
TOTAL	340	1.31	1357	5.21	24346	93.5	26043

Table 3. Degree of consistency between TAD ratings and indicated initial point of contact.

(1) TAD AREA	(2) AREAS* CONSIDERED CONSISTENT	(3) CONSISTENT N	(4) CONSISTENT %	(5) NOT CONSISTENT N	(6) NOT CONSISTENT %	(7) TOTAL
RSS	2,3,4	352	93.6	24	6.4	376
RP	3	462	83.1	94	16.9	556
RFQ	2	668	85.6	112	14.4	780
RBQ	4	527	82.3	113	17.7	640
R&T	9*	587	96.1	24	3.9	611
LSS	6,7,8	639	95.4	31	4.6	670
LP	7	607	81.4	139	18.6	746
LFQ	8	913	84.6	166	15.4	1,079
LBQ	6	645	82.0	142	18.0	787
L&T	9	577	95.8	25	4.2	602
FR	1,2	2,042	94.5	118	5.5	2,160
FL	1,8	2,390	95.1	122	4.9	2,512
FD	1	1,411	94.1	89	5.9	1,500
FC	1	970	93.3	70	6.7	1,040
BR	4,5	580	92.5	47	7.5	627
BL	5,6	795	93.0	140	7.0	935
BD	5	1,477	97.1	44	2.9	1,521
BC	5	121	92.4	10	7.6	131
TOTAL		15,763	91.3	1,510	8.7	17,273

*See Figure 2.
**All ran-off-the-road accidents are coded as "9." Of these, approximately 47% are overturns.

Overall, the TAD rating and point of initial contact designation were in agreement 91.3 percent of the time. This translates into a contingency coefficient[1], C, of .19. Unlike most other measures of association, the upper limit of C cannot attain unity (Seigel, 1956). Although C is rather low in this instance due primarily to the large sample size (N = 17,273), the coefficient is significantly different from zero ($p < .001$).

Thus, it can be concluded that the internal consistency (as defined here) between TAD area and point of initial contact is high.

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[1] $C = \sqrt{\dfrac{X^2}{N + X^2}}$

where N = sample size
X^2 = chi square statistic calculated from the sample

ASSOCIATION WITH DRIVER INJURY

The second question asked in this study was "What is the degree of association between the TAD ratings and severity of driver injury?" Or more specifically, what proportion of the variance in drivers' injuries is explained by TAD severity and how does this compare to proportions accounted for by other items collected on the standard form?

Procedure

For this analysis the variable selected as the dependent variable, or criterion, was the degree of injury to the driver coded as:

1. No injury.
2. No visible sign of injury but complaint of pain or momentary unconsciousness (Class C injury).
3. Visible injury such as bruises, abrasions, swelling, limping, etc. (Class B injury).
4. Visible sign of injury such as a bleeding wound, distorted body member, or carried from the scene (Class A injury).
5. Fatal (Class K injury).

All of these classifications are as made by the State Highway Patrol Trooper at the time of the investigation.

For the purposes of analysis the following were used as independent or predictor variables:

1. TAD Severity Level. The numeric value from 1 to 7 indicating amount of damage irrespective of location of damage.
2. Accident Type. In categorizing the data by accident type the following categories were used:
   - Ran off road
   - Overturned in road
   - Other non-collision in road
   - Collision with:
     - Pedestrian
     - Another motor vehicle
     - Parked motor vehicle
     - Railroad train
     - Bicyclist
     - Animal
     - Fixed object
     - Other object

(This classification was made by the trooper at the time of accident investigation.)

3. Highway Class. As defined on the standard report form highway class is coded as:
   - Interstate
   - U.S. Route
   - North Carolina Route
   - Rural Paved Road
   - Rural Unpaved Road
   - City Street

4. Speed of Car Before Accident. This is a trooper's estimate of the speed of the vehicle before the accident. The speeds are in 10 mph intervals.

5. Accident speed. This is a transformation of speed before accident according to the following rules.

   In crashes in which both vehicles were going toward each other and resulted in a front end or sideswipe collision, the speed of the vehicle going the fastest was assigned to both vehicles.

   In single vehicle accidents, the speed was assigned directly.

   In crashes in which both vehicles were going in the same direction, and resulted in a front to rear crash or sideswipe, the difference in speed between the two vehicles was assigned to both vehicles.

   In angle collisions, the speed of the striking vehicle was assigned to both the striking and the struck vehicle. (Rouse and Gendre, 1969, pg. 21).

6. Point of Initial Contact. Each car was classified according to the part of the car on which initial damage was located (see Figure 2). The groupings were as follows:

   - Front
   - Right front
   - Right side
   - Right rear
   - Rear
   - Left rear
   - Left side
   - Left front
   - Non-collision

   Note that the non-collisions were mainly overturn and ran-off-road accidents.

7. Driver's Age coded as follows:

   - Under 16 years
   - 16 years
   - 17 years
   - 18-19 years
   - 20-24 years
   - 25-34 years
   - 35-44 years
   - 45-54 years
   - 55-64 years
   - 65-74 years
   - 75 and older

8. Model Year of Car. This was obtained by translation of the Vehicle Identification Number (VIN).

9. Belt Usage. The trooper indicates on the accident report whether or not driver was wearing a safety belt.

10. Car Size Group. From the VIN it was possible to categorize cars into like size groupings. These groupings were:

   - Luxury
   - Medium
   - Standard
   - Intermediate
   - Compact
   - Subcompact

   The Appendix details by name the cars within each of these groups.

11. Property Damage Costs. At the time of investigation the officer estimates the cost of all property damaged in the crash. These estimates were coded into the following classes:

   - 0-$49
   - $50-99
   - $100-149
   - $150-299
   - $300-499
   - $500-999
   - $1000-1499
   - $1500-1999
   - $2000-2999
   - $3000-4999
   - $5000 and over

Of the original 24,346 records with valid TAD ratings, 11,905 were missing a value for one or more independent variables. In these cases the record was dropped from analysis. This resulted in 12,441 cases, i.e., cases with acceptable values for each independent variable.

Findings

The mean degree of driver injury for each TAD severity level is shown in Table 4 (e.g., for a severity of 7 an injury mean of 2.98) translates to nearly a Class B injury). As can be seen in this table, the mean degree of driver injury across all damaged areas increases as the measured severity increases, while the percent of non-injured drivers decreases.

Table 4. Percent of drivers injured, degree of injury means and variances by each TAD severity level.

TAD Severity	Percent Injured	N	Mean	Variance
1	3.30	2741	1.05	0.1171
2	6.40	2892	1.12	0.2574
3	10.90	2190	1.23	0.5328
4	20.90	2112	1.45	0.9316
5	35.80	1067	1.84	1.5985
6	46.20	894	2.15	1.7891
7	71.60	545	2.98	2.0040

The analysis of variance of these data, as summarized in Table 5, shows a significant overall F ($p < .01$). In probing for differences using Newman-Keuls (Winer, 1962), three patterns emerged, TAD ratings between 1 and 5, 6, and 7. That is, there was no significant difference in mean degree of driver injuries among rating levels of 1, 2, 3, 4, 5, but the mean degree of injury at treatment level 6 differed from all others ($p < .05$) as did those at level 7. This may be a reflection of the lack of equal appearing intervals as reported by Rouse and Gendre (1969).

Table 5. Summary of analysis of variance of driver injuries by TAD severity.

	SUM OF SQUARES	DF	MEAN SQUARE	F RATIO
BETWEEN GROUPS	2689.5254	6	448.2542	665.2471*
WITHIN GROUPS	8378.2266	12434	0.6738	
TOTAL	11067.7500	12440		

*$p < .01$

These data are plotted in Figure 3. The parabolic shape of the curve is identical to that reported by Michalski (1968) using Oregon data. Michalski concluded that ". . . incidence of injuries is proportional to the square of damage ratings. This indicates that damage ratings reflect impact momentum rather than kinetic energy" (1968, pg. 37). Michalski's data were for front end damage only. Figure 4 compares the Michalski data with a combination of FD, FC, FL and FR ratings in the present study. It should be noted that the data from Michalski's study are based on all accidents regardless of dollar damage. The North Carolina study is based on TAD ratings for vehicles which have sustained $100 or more worth of estimated damage. The shape of both curves is similar. Since the Michalski study considered injuries to any occupant in the car while the present study considered only driver injuries, it would be expected that a higher percentage of cars with injuries would be found by Michalski.

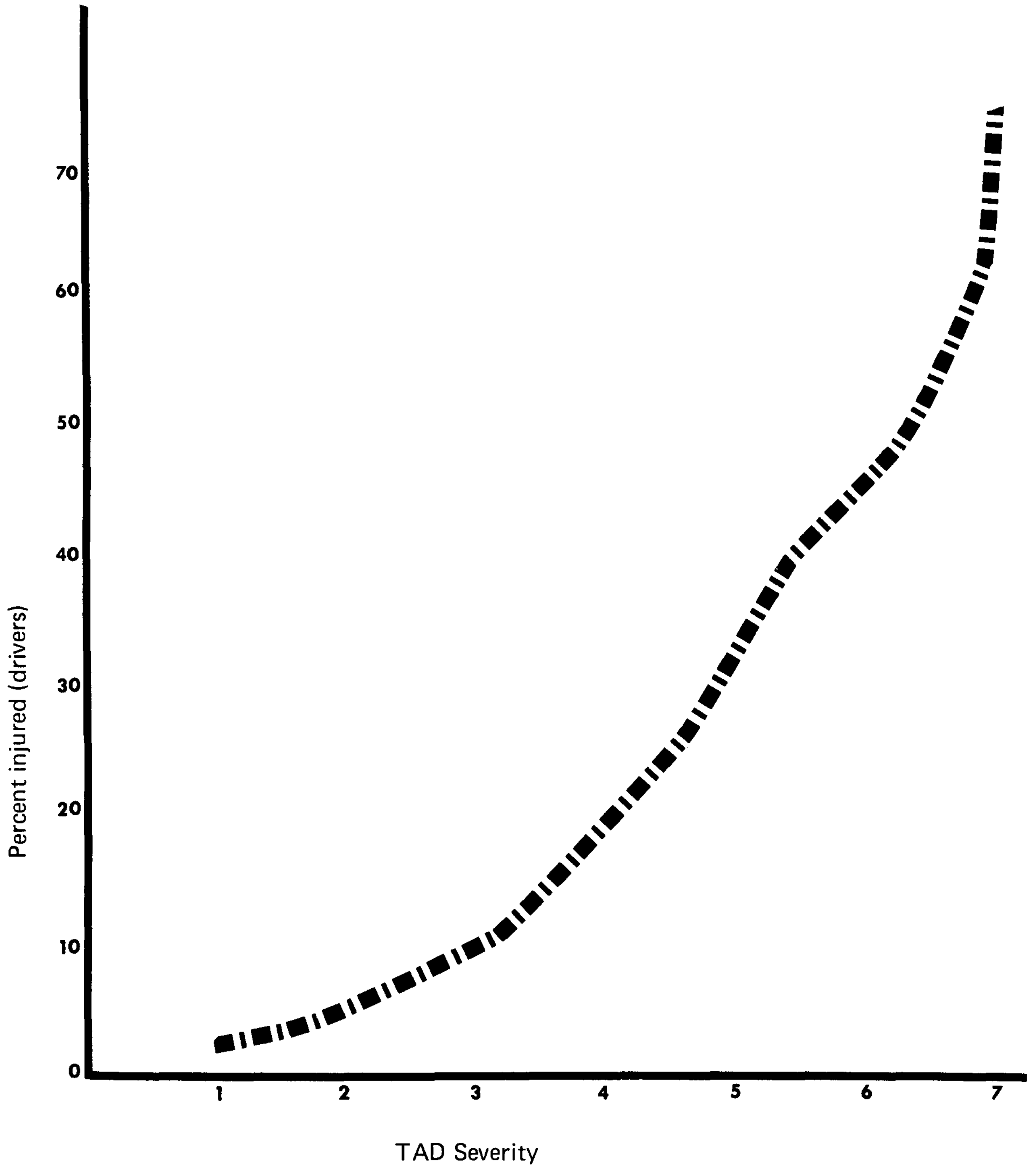

Figure 3. Percent of drivers injured (K, A, B, C) by TAD damage severity (N = 12,441).

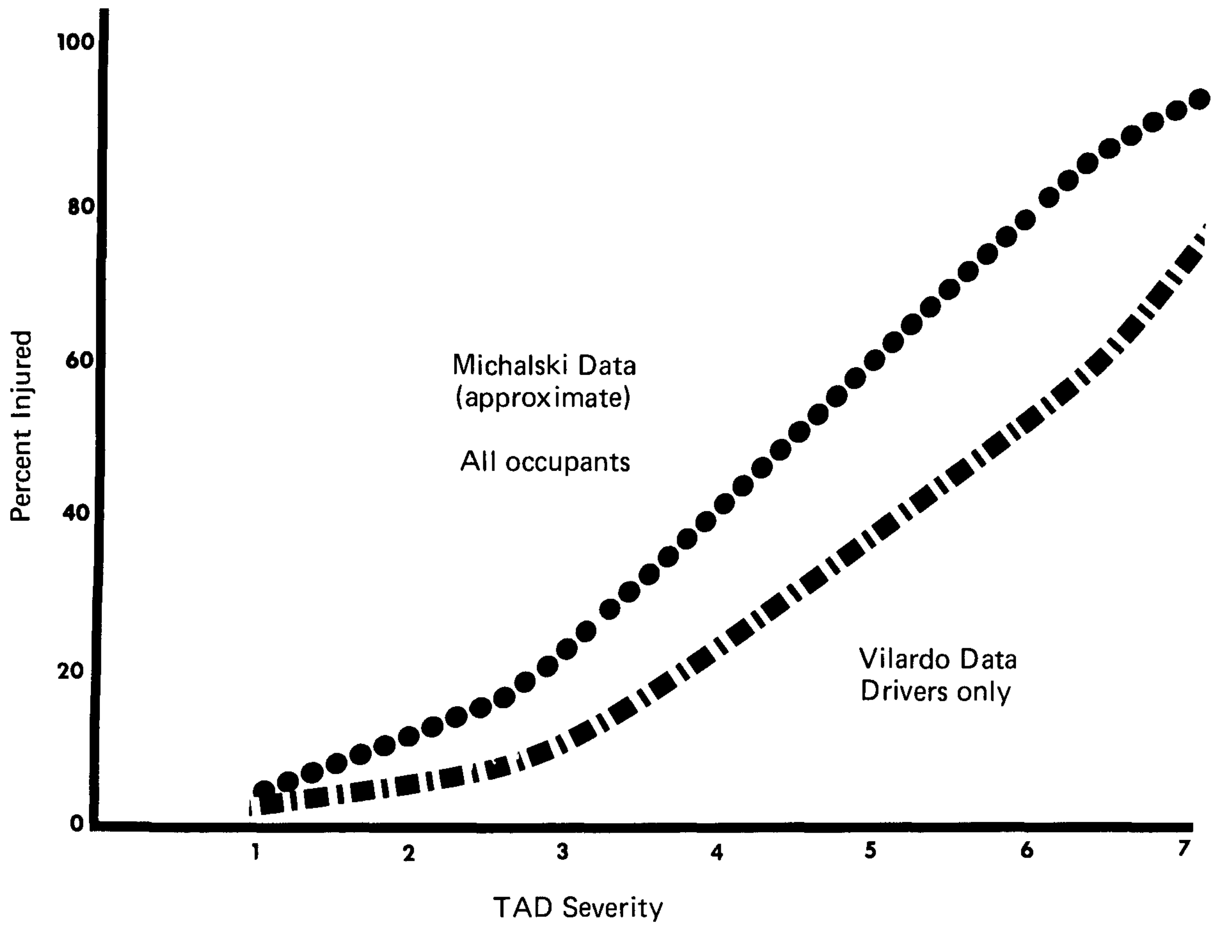

Figure 4. Percent of drivers injured by severity of front impact damage.

Table 6 shows the intercorrelations of degree of driver injury level with each of the independent variables. Since some of the variables were non-continuous (and therefore normality could not be assumed) two different coefficients are reported. When both variables are linear* the coefficient reported is the Pearson product moment r; where one or both variables are non-linear, the coefficient is the Eta (Guilford, 1956, pg. 288). Therefore, the coefficients presented in Table 6 are not directly comparable. The highest correlation is between TAD severity and costs, .64 ($p < .001$); between TAD severity and degree of injury, .45 ($p < .001$); and costs and degree of injury, .34 ($p < .001$).

Table 6. Intercorrelations between all variables.

	Both Non—Linear (Eta)			One Non—Linear (Eta)							
VARIABLE	2	5	8	3	4	6	7	9	10	11	12
1. Accident Type	.02	.44	.00	.26	.36	.04	.00	.05	.04	.01	.05
2. Highway Class	—	.02	.01	.02	.01	.02	.00	.00	.01	.00	.00
5. Initial Contact	—	—	.00	.07	.14	.04	.00	.05	.01	.01	.05
8. Belt Use	—	—	—	.00	.00	.00	.07	.00	.00	.00	.00
				Both Linear (r)							
3. Vehicle Speed					.59	-.15	.01	.27	.12	.06	.22
4. Accident Speed					—	-.10	.01	.33	.19	.04	.26
6. Driver's Age						—	.00	-.05	.01	-.24	-.01
7. Car Year							—	.02	.04	.06	.00
9. TAD Severity								—	.64	.05	.45
10. Costs									—	.00	.34
11. Car Size Group										—	.06
12. Driver Injury											—

*Not all of the variables defined as linear and for which Pearson product moment correlations were calculated are really linear. However, the Pearson r was deemed acceptable.

The lack of intercorrelation can be taken as indication of the heterogeneity of the variables and their mutual exclusiveness. However, the fact that some variables have low correlation with degree of injury can lead one to question their validity with regard to accident severity.

Another way to look at the data is to examine the proportion of variance in driver injuries explained by the set of independent variables with TAD and without TAD. To determine this, the data were analyzed using the Automatic Interaction Detector (AID) algorithm as developed and described by Sonquist and Morgan (1964). Regarding one of the variables as the dependent variable (degree of injury), the technique employs a branching process, which is based on variance analysis, to subdivide the sample into a series of subgroups, which maximizes the ability to predict values of the dependent variable. The technique is similar to conventional stepwise regression techniques except that the additivity and linearity assumptions inherent in the conventional models are not required.

Without the TAD severity level the independent variables, as a group, accounted for 10 percent of the variance in driver injury ($R^2 = .10$). The single largest contributor was the total property damage costs, which accounted for 9.24 percent of the explained variance. With TAD severity included, the R^2 was increased to .2662, with the single largest contributor being TAD, which accounted for 18.09 percent.

The results of the AID analysis were similar to those of the analysis of variance in that three distinct injury patterns emerged: one between ratings 1-4, the second including ratings 5 and 6, and the third comprised of rating 7. That is, ratings between 1-4 were associated with low degree of injury while 5-7 were associated with higher degrees of injury. This latter group was further split into two groups, predictors comprised of ratings 5-6, and 7.

From this finding it can be said that the TAD rating does add to the ability to predict driver injuries. Furthermore, when defined in terms of driver injuries, the TAD scale is a valid measure of crash severity. In fact, it is a better predictor of driver injury than any other variable now being collected on the standard accident report form.

CONCLUSION

This study has attempted to show (among other things) the relationship between driver injuries and the TAD severity level. Driver injury was selected as the criterion, because it was felt that a reduction in mortality and morbidity should be the prime focus of safety activities. It is recognized that other criteria could have been selected and should be used in follow-up studies, such as accident costs. To the degree that severity was defined in terms of driver injuries, then the results of this study have shown a strong relationship between TAD severity and injury. To this extent, it appears that the TAD severity is a good estimate of crash severity. As is true with all validation, the present study sampled accidents occurring within a given area (North Carolina) over a given period of time. Thus the degree to which the results can be applied to other settings and other times needs to be the subject of future research.

In addition to providing estimation of crash severity, which should be beneficial to highway safety administrators, the TAD scale can also serve as a "control" variable in future research, thus allowing investigators to control for the effects of differing crash severities by classifying according to TAD severity. Future research should be aimed at comparing similarities across vehicle damage areas controlling for severity.

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APPENDIX

Make and Model Classified by Each Car Size Group

Car Size Group	Make	Model
Luxury	Pontiac	Star Chief Executive Bonneville Grand Ville
	Buick	Wildcat Electra Estate Wagon
	Oldsmobile	98 Luxury 98
	Dodge	Polara Monaco Monaco 500 Polara 318 Polara 500 Police and Taxi Matador 880
Medium	Pontiac	Catalina Grand Prix 2 + 2 Safari Ventoura
	Buick	LeSabre Invicta Centurion
	Oldsmobile	Jet Star All 88's Starfire
	Dodge	Seneca Pioneer Phoenix Dart 330 Dart 440 Dodge 330 Dodge 440
	Mercury	Monterey Montclair Marauder Parklane

Medium (continued)	Mercury	Brougham Marquis Station Wagon Meteor
Standard	Chevrolet	Biscayne Belair Impala (inc. SS.) Caprice Brookwood Townsman Kingswood
	Plymouth	Belvedere Fury (all) VIP Savoy Police and Taxi
	Ford	Fairlane (1960-61) Fairlane 500 (1960-61) Custom Custom 500 Galaxie (all series) Station Wagon 300
Intermediate	Pontiac	Tempest Lemans G.T.O.
	Chevrolet	Chevelle (incl. SS) Concours
	Buick	Special and Deluxe Sportwagon Skylark and Custom Skylark Gran Sport
	Oldsmobile	F85 Cutlass
	Plymouth	Belvedere (Std., I, II) Satellite Sport Satellite GTX Road Runner Police and Taxi

Intermediate (continued)	Dodge	Coronet (all series) Demon
	Ford	Fairlane (1962---) Fairlane 500 (1962---) Torino 500 XL GT and GTA Ranchero Cobra
Compact	Chevrolet	Chevy II / Nova Corvair
	Plymouth	Valiant Signet Taxi Duster Scamp
	Ford	Falcon Sprint Futura
Subcompact	Pontiac	Firebird Esprit Formula 400 Trans AM
	Corvette	
	Camaro	
	Mustang	
	VW All	
	Renault	