

1960

An analysis of some of the characteristics of a group of students at South Hadley High School in relation to their use of automobiles.

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AN ANALYSIS OF SOME OF THE CHARACTERISTICS OF A
GROUP OF STUDENTS AT SOUTH HADLEY HIGH SCHOOL
IN RELATION TO THEIR USE OF AUTOMOBILES

BUSS - 1960

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AN ANALYSIS OF SOME OF THE CHARACTERISTICS OF A GROUP
OF STUDENTS AT SOUTH HADLEY HIGH SCHOOL IN
RELATION TO THEIR USE OF AUTOMOBILES

by

Donald J. Buss

A problem presented in partial fulfillment
of the requirements for the
Master of Education Degree
School of Education
University of Massachusetts
1960

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CHAPTER I
INTRODUCTION

CHAPTER I

INTRODUCTION

Background of the study. During the early part of the 1959-1960 school year at South Hadley High School, a considerable amount of interest was aroused by a series of minor automobile accidents, each of which involved a high school student. The attention of the author was drawn to the fact that in every case, the scholastic achievement record of the driver had been noticeably poor up to the time of the mishap and that within a relatively brief period of time following each occurrence, the pupil involved had either dropped out of school altogether or had transferred to another institution. It was mentioned by some teachers that the marks of these students had been very low ever since they had become old enough to drive. One person described them as having been so keenly interested in automobiles that nothing else mattered to them, especially their school work. Another teacher indicated that in her opinion, owning a car was the main reason why certain high school students were failing to measure up to the level of their individual academic capabilities. These assumptions were based upon limited knowledge and observation of the situation without regard to the actual statistical relationships which might exist between the use of an automobile and scholastic success.

Some of the relationships which might exist between car ownership or easy access to the use of motor vehicles and the academic achievements of high school students, have been investigated, however, by various individuals and agencies (see Chap. II). These studies reveal that where in one community low grades and the habitual use of autos seem to be related, in another community no such relationship was found. Not one of these studies concluded that ownership or frequent use of cars was the actual cause for the underachievement observed in certain pupils. The investigators recognized that other factors in addition to automobile ownership or usage might have contributed to substandard scholastic records and that the effect of these factors upon any auto-achievement correlations could not be measured within the scope of their particular studies. Considerations possibly contributing to the modification of a student's academic achievement include: part-time employment, study habits, athletics, extra curricular activities, social contacts, family relations, etc. Some investigators have recognized that the socio-economic status of the individual, his family, and the community wherein he resides, all contribute something to the degree of academic success attained by a particular pupil.

In attempting to determine whether or not autos have any effect, detrimental or beneficial, upon the scholastic achievement of high school students, it seems obvious that

one cannot assume that all other factors which might reflect an influence on scholastics will remain constant when young people acquire the use of motor vehicles. The problem begins, therefore, with the determination of what relationships actually exist at the particular institution wherein the author has seen the need for such information. If and when certain correlative relationships between school marks, autos, and other contributing factors are determined, only then can further investigations be originated for the purpose of discovering the causational relationships.

Statement of the problem. This study was designed to be a comprehensive analysis of the academic achievement and some of the activity patterns of the Junior and Senior Class pupils attending South Hadley High School, as of February 26th, 1960, in relation to their use of automobiles. No attempt was made to discover any cause and effect relationships among the factors considered, as the investigation was limited to the determination of the existence of relationships between school marks with the influence of automobiles and with other activity patterns. The fundamental questions which this study has undertaken to answer are:

1. Do students who own or who have the frequent use of automobiles achieve a higher, lower, or relatively equal degree of scholastic success in comparison to students considered to be infrequent drivers or non-drivers.

2. Do the marks of students who own or who have the frequent use of automobiles fluctuate or deviate to any greater or lesser degree than do the marks of the non-driving students, and if so, in what direction.

3. What are some of the activities common to both driving and non-driving pupils which might have a bearing upon the degree of their respective academic success. In what ways do the activity patterns differ between the two groups.

Significance of the problem. South Hadley is a rapidly growing suburban type community with a correspondingly rapid growth in its school population. The present high school building was first occupied in 1956 with an enrollment of 566 and the expected figure for September of 1960 is approximately 850. The structure was designed to accommodate 800 students with room for up to 1,000 if conditions make it necessary. With an enrollment of over 800 scholars, rooms such as the Chemistry and Physics Laboratories which should not normally be used for any purpose other than that for which they were designed, will have to be used as homerooms and in certain cases, as lecture rooms for other sciences. These changes will not have a serious effect (up to an enrollment of 1,000) upon the total program of the school, but they will have a tendency to disrupt the harmony of a smoothly running operation. Present indications are that enrollment capacity will be

reached within a few short years. Plans for additional classroom space, therefore, are now being considered.

With the school population increasing consistantly and with a general tendency for more and more high school pupils to have the use of automobiles, the parking of the cars driven to school by students is likewise going to become a problem which will require its share of careful and considerate planning. The present parking space at South Hadley High School is adequate for the faculty and the students but it will not remain adequate for many years unless additional area is provided or some restriction is placed upon student driving. In either case, there shall be a need in the near future for the promulgation of a sound, intelligent, and far sighted policy with regard to students desiring to drive to school. This policy should not be based entirely upon the financial considerations involved in school construction or any other consideration except the effectiveness in improving the educational process at the high school.

Limitations of the study. Although this study may be of some interest to those educators, agencies, or other persons having a concern for high school students and their problems, it must be kept in mind that the following limitations exist:

1. The investigation included only those pupils comprising the two upper classes at South Hadley High School.

When the number of cases was broken down into Driver and Non-Driver groups and when they were further divided into quartiles according to class rank, the number of pupils involved became relatively small.

2. The accuracy with which the students were able to estimate lengths of time in hours and weekly participation frequencies in designated activities, may have been highly variable.

3. Certain questions, such as indicating the number of hours spent on outside study and the number of evenings spent engaged in social activities, may not have been answered in complete truthfulness. This possibility exists inasmuch as the students were virtually required to complete the questionnaire. Some pupils may have also felt that the information they were furnishing might in some way have a bearing upon their marks or upon their relationships with their peers, their teachers, or the school in some detrimental way.

4. The survey took into consideration the achievement record of students enrolled at one particular time (February 26th, 1960). Students having been members of either class who had dropped out or transferred prior to the date of the investigation, were not included except for the determination of class rankings during preceding intervals, for the cases studied.

Definitions of important terms. For full comprehen-

sion of this study, it is necessary that certain frequently used terms be explained. These terms are:

1. Driver. A student owning and/or having easy access to the frequent use of an automobile.
2. Non-Driver. A student who drives infrequently or not at all.
3. Automobile owner. A pupil having in his possession an automobile, having been given to him or purchased by him and registered in his name for operation in this state. Cars registered in the names of other persons such as parents or guardians, but which are understood to be the possessions of the students, were also placed in this category.
4. A frequent Driver. A student ordinarily having the daily use of an automobile with little parental control.
5. An infrequent Driver. A student having an operator's license, but one having classed himself as having the use of a car just "sometimes" or "once in awhile".

CHAPTER II

REVIEW OF RELATED LITERATURE

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REVIEW OF RELATED LITERATURE

The automobile and its possible effects upon the scholastic achievement of the high school teen-ager is a relatively new topic of concern in our schools. As such, very little journalism on the subject has appeared professionally. A few articles have appeared, nevertheless, and the writer (of this paper) in correspondence with some of the authors has found that several investigations have been initiated in various parts of the country. Few of them, however, had been conducted in the manner of a typically designed research study. In some instances, the studies amounted to little more than a one day survey.

M. O. Donley, a staff writer for the NEA Journal, in his article on the automobile-student achievement problem, summarized the findings of a study conducted at Madison High School in Rexburg, Idaho. The investigation which had been based upon the four-year averages of the 1959 Senior Class (110 pupils), revealed that no straight A students drove automobiles, but that 15% of the B students, 41% of the C students, 71% of the D students, and 83% of the failures were drivers.¹

Donley goes on to say,

¹Marshall O. Donley, Jr., "Autos, Report Cards, and Safety," NEA Journal, XLVIII (September, 1959), p. 29.

Principals in many parts of the country- from New Jersey to Colorado, from Wisconsin to Texas- have said they believe that grades and driving are definitely and closely correlated.

Often cited by these principals is the student who doesn't finish school because of maintaining a car.²

In Artesia, New Mexico, an older study has shown that no such relationship existed. There, 27% of the A students drove, as did 20% of the B students, 23% of the C students, 21% of the D students, and 23% of the failures.³

A similar contradiction was found to exist at Tenafly (New Jersey) High School where, ". . . about 25% of the top students drive to school more or less regularly."⁴ In reference to his investigation, Principal Van Vliet comments, "We concluded that there was no evidence to point that the use of automobiles caused a reduction in academic achievement."⁵

In still another study, this time at Carlsbad (New Mexico) High School, it was found by Mr. Jere K. Reid that socioeconomic level of the pupil seemed to play an important part in what effect an automobile had upon his achievement. Children of parents in the professional class, posed

²Ibid.

³Ibid.

⁴Ibid.

⁵Letter from Eugene H. Van Vliet, Principal, Tenafly Senior High School, Tenafly, New Jersey, February 10, 1960.

no problem, but the children from families of "blue collared" workers generally had to purchase their own cars and support them, the tendency then being low grades and often times dropouts. Mr. Reid states,

To sum it up may I suggest that in those homes where a car is a prestige item, ownership of a car tends to bring lower marks in our secondary schools. In homes where this is not always true we cannot see that marks are influenced by ownership.⁶

At Mishawaka High School, Mishawaka, Indiana, a study involving 119 junior and senior boys who owned automobiles and 80 who did not, was undertaken in an attempt to determine what effect car ownership was having upon their behavior. Following is a summary of the results:

1. Only one third as many drivers were in the top ranking quartile as were non-drivers.
2. Drivers averaged 44 positions lower in the final class ranking.
3. Drivers had elected non-academic courses nearly two to one over those in the other group.
4. The mean student rating made by their respective teachers favored the non-drivers.
5. Drivers had almost twice the record of absenteeism, and nearly half the record of perfect attendance.
6. In I.Q. tests, drivers scored $7\frac{1}{2}$ points lower

⁶Letter from Jere K. Reid, Senior High School, Carlsbad, New Mexico, March 23, 1960.

than non-drivers.⁷

Smith feels that automobiles may be responsible for a great deal of adverse behavior in boys, but he claims no cause and effect relationships. In his words, "Generally speaking, automobiles and positive performance are incompatible."⁸

One of the most detailed and comprehensive studies undertaken to date on the subject of automobiles and academics, was conducted by The Allstate Insurance Companies of Skokie, Illinois. In co-operation with the administration of the Niles Township High School, the research people of Allstate found the following:

1. Car owners made up a large proportion of the lowest quarter of the class. Prior to acquiring autos, these students already had low marks.

2. For those students doing well scholastically, the acquisition of a car resulted in serious adverse effects upon their grades.

3. Automobile ownership leads to part-time jobs.

4. The better students work week-ends only.

5. Week-day employment influenced marks adversely.

6. The greater the number of hours employed, the

⁷Robert Smith, "On Student Driving," School Board Journal, CXL (April, 1960), pp. 22-23.

⁸Ibid. p. 23.

greater the adverse influence.⁹

Existing research on the issue in question is much too inadequate so as to draw from it any general conclusions. The studies discussed in this chapter present findings which are not in general agreement. It is very likely that some of the inconsistencies noted, are attributable to the sum total of the environmental influences germane to the particular locales in which the investigations were conducted. Because these environmental influences make every school individually distinctive, the specific automobile-achievement relationships determined to exist in one community cannot necessarily be predicted to occur in another. The author, therefore, has undertaken to ascertain some of the relationships which may exist at South Hadley High School.

⁹The High School Student and the Automobile (Skokie, Illinois: Safety Department, The Allstate Insurance Cos., January, 1960), p. 21.

CHAPTER III

OUTLINE OF PROCEDURE

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OUTLINE OF PROCEDURE

The setting. The Town of South Hadley, Massachusetts, is located on the east side of the Connecticut River, about 14 miles north of Springfield, just across the river from Holyoke. It has an area of 18.3 square miles and according to the state census taken in 1955, it has a population of 11,307. The total value of its taxable property for the year 1959 was \$20,900,685.00 with a tax rate of \$50.00 per \$1,000.00.¹

The town is basically residential in nature with only a small number of business or industrial concerns, other than the usual retail consumer outlets found in any community of its size. Employment is readily found in the many and diverse types of local and nationally known firms located in easily accessible Holyoke, Springfield, Chicopee, and at Westover Air Force Base in Chicopee Falls.

Advanced education may be had at many nearby institutions such as Mount Holyoke College (in South Hadley), Amherst College, Smith College, Springfield College, American International College, Westfield Teachers College, the University of Massachusetts, and several other well known sen-

¹Annual Reports of the Officers of the Town of South Hadley for the Year Ending December 31, 1959 (South Hadley Fall, Mass: Hadley Printing Co., 1960), p. 76.

ior and junior colleges, together with a number of excellent business schools.

In December of 1959 the public school population of South Hadley was 2,865, representing a gain of $127\frac{1}{2}\%$ over the previous 10 year period.² Of this total, 162 were tuition students from Granby, a town with a population of about 4,000 but otherwise similar to the characteristics of South Hadley.³ Children attending other schools out of town included 403 at the Parochial Schools of Holyoke and 74 at other miscellaneous institutions.

The High School itself is a modern single story, brick faced cinder block building, first occupied in September of 1956. The enrollment in December of 1959 was 804 and included a staff of 31 teachers, 2 administrators, and a director of guidance.

The subjects. The subjects of this investigation included 328 out of the 332 members of the Junior and Senior Classes enrolled at South Hadley High School as of the 26th of February, 1960. Statistical data concerning the academic averages and class rank of all former members of the two classes in question, was obtained from school records. Although former students were not the concern of this in-

²Ibid. p. 77.

³Annual Report of the Town Officers of Granby, Massachusetts for the Year Ending December 31, 1959 (Northampton, Mass: Gazette Printing Co., Inc., 1960), p. 103.

TABLE 1
Nature of the Cases Studied

Class	Participating		Non-Participating*		Total
	Males	Females	Males	Females	
Senior	69	69	2	1	141
Junior	76	114	1	0	191
Totals	145	183	3	1	332

*The students included in these figures were unwilling to complete the questionnaire.

vestigation, such information was necessary to compute the true class rank percentiles of the cases studied at various periods during their high school careers.

Accumulation of data. Inasmuch as the investigation was a study involving the nature of a group at a particular time, it was necessary to collect the pertinent information during a relatively short period of time. Further, the group being rather large and the number of questions being somewhat extensive, it was decided that the use of a questionnaire was the most practical manner of amassing the data.

Questionnaires were distributed to the students by their respective homeroom teachers. Prior to the execution of the forms, the pupils were instructed as to the impor-

tance and significance of complete and accurate returns. The majority of the forms were completed on the same day and were returned to the author. A close follow up was conducted to insure that students having been absent or those who had not otherwise completed the questionnaire, did so and returned them as soon as possible. The follow up was continuous in design and at the end of a three week period, all forms with the exception of four had been properly completed. The four people mentioned were contacted, and either by reason of outright refusal or an indication that the forms would not be completed with any degree of accuracy, they were eliminated from the study, except in the computation of the percentile class rankings of their classmates.

In order to secure complete and accurate information as to the marks and class ranking of each student, it was necessary to search school records going back to the freshman year of every individual who had ever been a member of either class to which the present 328 study cases belong. Class rankings, based upon the actual numbers enrolled as of the end of each academic year and as of the end of the third marking term of the 1959-1960 school year, were then computed. Class standings as computed by the school administration were not utilized inasmuch as only marks for major academic courses had been considered. Marks for courses such as Gym, Art, Public Speaking, etc., had not

been included in their tabulations. Since the writer felt that these marks should be included in the determination of class standings, the time consuming search of school records was deemed necessary.

Organization of the questionnaire. The questionnaires which the students were asked to complete, consisted of four mimeographed pages (see Appendix A). The wording of the questions was kept as simple as possible and in all cases, except for name and address and in a few questions where the response, "Other (please specify)", may have been called for, no writing was required. The author felt that the use of the restricted, check response type questionnaire was most suitable for the following reasons:

1. Objectivity was desired.
2. Little time was made available for its execution.
3. An easily answered questionnaire was necessary.
4. Ease in tabulation was desired because of the large number of individual items to be analyzed.

The information which the questionnaire sought to obtain about each student included:

1. Name and address.
2. Type of curriculum and usual study habits.
3. A limited degree of socioeconomic status.
4. Participation in extracurricular activities.
5. Participation in school athletics.
6. Social activity patterns.

7. The operation of a motor vehicle.

8. Part-time employment.

Treatment of the data. All of the information obtained from each individual questionnaire was transferred to cards measuring three by five inches and especially designed to accommodate the data. A system of punching out or nicking the edges of the cards at particular places, made their manipulation rather simple in forming groups with varied attributes.

At the same time, information concerning the achievement history of each student was being secured from school records, and was later added to the cards.

Basically, the pupils were divided into two groups, "Drivers and Non-Drivers" (see Chapter I, pages 3 and 9). Each of these was further broken down into smaller sub-groups as was required to treat analytically each of the various areas to be studied and compared. An example of one of the areas which was analyzed, was the participation in school activities by Drivers and by Non-Drivers in relation to their relative degree of academic achievement. To make the necessary comparisons, Drivers were first separated from Non-Drivers. Each of these was subsequently separated according to sex. In turn, each of these groups was broken down according to high, low, or average participation in the activity program of the school. Finally, all of the divisional groups up to that point were separated

according to the four quartile achievement levels. The results from these manipulations are shown in a series of 10 tables under headings similar to the following:

1. Drivers and Non-Drivers compared on the basis of high, average, or low degree of activity.

2. Male Drivers and Non-Drivers compared on the basis of high, average, or low degree of activity.

3. Female Drivers and Non-Drivers compared on the basis of high, average, or low degree of activity.

4. Drivers and Non-Drivers of a high degree of activity compared on the basis of their respective quartile rankings.

5. Drivers and Non-Drivers of an average degree of activity compared on the basis of their respective quartile rankings.

6. Drivers and Non-Drivers of a low degree of activity compared on the basis of their respective quartile rankings.

7. Drivers and Non-Drivers ranked in the fourth quartile compared on the basis of degree of activity.

8. Drivers and Non-Drivers ranked in the third quartile compared on the basis of degree of activity.

9. Drivers and Non-Drivers ranked in the second quartile compared on the basis of degree of activity.

10. Drivers and Non-Drivers ranked in the first quartile compared on the basis of degree of activity.

CHAPTER IV

GENERAL BACKGROUND AND ACADEMIC ACHIEVEMENT

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GENERAL BACKGROUND AND ACADEMIC ACHIEVEMENT

Composition of the Driver and Non-Driver Groups. The 328 students who comprised 99% of the Junior and Senior Classes at South Hadley High School as of February 26th, 1960, were divided into two permanent group classifications. Students who owned automobiles or who had the frequent use of a car were designated as the Drivers. The second group, known as the Non-Drivers, included the pupils who seldom drove, or drove not at all. Inasmuch as the author believed that boys might differ from girls somewhat, in some of the activity and scholastic patterns to be analyzed, the Driver and Non-Driver groups were further categorized as to sex. It did become an important factor when

TABLE 2

Composition of the Driver and Non-Driver Groups

Sex	Driver	Non-Driver	Total
Male	65	80	145
Female	37	146	183
Total	102	226	328

achievement differences between the sexes were determined, as shall be reported later in this paper.

Background characteristics of Drivers and Non-Drivers.

In making comparisons of the academic achievement and activity patterns between Drivers and Non-Drivers, the writer reasoned that many contributing variables could not be controlled. The evaluation of what influence an automobile may have on a particular student's marks, cannot be measured when other factors such as a part-time job, a newly discovered social life, a personality conflict with a certain teacher, a foster father, etc., all have something to do with the learning environment. At South Hadley High School, it was not known whether Drivers differed in any way from Non-Drivers. It was suggested and speculated that differences did occur, however, especially in the area of scholastic achievement. This investigation has undertaken to determine if differences did exist between them, and if so, what they were.

In order to approach this problem in a manner which would make its conclusions more reliable, the author sought to establish if the general backgrounds of all the cases studied were in some ways similar. If it had happened that the two groups were in no way similar to each other, this investigation would have been in vain. This was not the situation at South Hadley High School, however, for it was determined that in several ways, the attributes of one group were identical to those of the other.

One such similarity is seen in an analysis of the

future plans as expressed by the students making up the Driver and Non-Driver groups. It is readily seen that the am-

TABLE 3

Future Plans of Drivers and Non-Drivers

Ambition	Drivers		Non-Drivers		All	
	Number	Percent	Number	Percent	Number	Percent
None	0	0	1	.4	1	.3
Indefinite	15	14.7	34	15.0	49	14.9
Employment	15	14.7	27	12.0	42	12.8
Military serv.	13	12.7	17	7.5	30	9.2
Further educ.	59	57.9	144	63.8	203	61.9
Marriage	0	0	3	1.3	3	.9
Other	0	0	0	0	0	0
Total	102	100.0	226	100.0	328	100.0

bitions of both groups are much alike. None of the figures in Table 3 show any significant differences between the percentages of either group on a particular indicated preference. It is interesting to note that a greater percentage of Drivers have indicated a military future than have the Non-Drivers, and at the same time, a nearly equal smaller percentage have selected the category of further education.

This tendency toward an incongruity between the groups, is more than likely due to the larger percentage of boys in the driving classification.

The type of curriculum which the students have chosen to pursue was another way in which general background char-

TABLE 4

Curricular Preferences of Drivers and Non-Drivers

Curriculum	Drivers		Non-Drivers		All	
	Number	Percent	Number	Percent	Number	Percent
College	62	60.8	112	49.6	174	53.1
Commercial	35	34.3	92	40.7	127	38.7
General	5	4.9	22	9.7	27	8.2
Total	102	100.0	226	100.0	328	100.0

acteristics of the groups were compared. The all-over pattern of curriculum selection by the students is another indication of the upper middle-class socioeconomic structure of the town. Table 4 also reveals that Drivers at South Hadley High School were more inclined to have chosen academic courses of study than had the Non-Drivers. The figures representing college course selectees, are significantly different to the 5% level of confidence, as computed by the Chi Square test of significance. These sta-

tistics tend to suggest a negative correlation with data concerning educational ambitions as appearing in Table 3, on page 26. This inconsistency is probably due to the fact that many pupils taking commercial subjects have expressed a desire to continue their education.

Drivers and Non-Drivers appear to have come from families quite similar with respect to home ownership back-

TABLE 5

Home Ownership by the Families of Drivers and Non-Drivers

Status	Drivers		Non-Drivers		All	
	Number	Percent	Number	Percent	Number	Percent
Own	92	91.2	201	89.0	293	89.3
Rent	10	9.8	25	11.0	35	10.7
Total	102	100.0	226	100.0	328	100.0

ground. This consideration was thought to be of importance in that one might assume that a larger percentage of Drivers would have come from families owning real estate. The table above indicates that approximately 90% of both Drivers and Non-Drivers have similar backgrounds in this area.

The family employment situation was also thought to be of some significance in establishing the existence of com-

mon background traits. Contrary to what might be expected, both Drivers and Non-Drivers had very similar histories

TABLE 6

Parental Employment Status in the Families
of Drivers and Non-Drivers

No. employed	Drivers		Non-Drivers		All	
	Number	Percent	Number	Percent	Number	Percent
0	0	0	0	0	0	0
1	63	61.8	136	60.1	199	60.7
2	39	38.2	90	39.9	129	39.3
Total	102	100.0	226	100.0	328	100.0

where the number of their respective parents who normally work, at least on a part-time basis, was concerned.

The statistics as seen in Table 7 (see page 30), have led the writer to conclude that a significantly greater percentage of Drivers have originated in a "two car family" environment than have Non-Drivers. This situation is probably due in part to the student owning his own automobile. It may be due also to the fact that where a second vehicle becomes available to a family, the members of that family are more apt to make use of it than they would the car normally driven by the head of the household. This same

reasoning may also explain why so many fewer Drivers had a

TABLE 7

Automobile Ownership Within the Families of
Drivers and Non-Drivers

No. of cars	Drivers		Non-Drivers		All	
	Number	Percent	Number	Percent	Number	Percent
None	0	0	9	4.0	9	2.7
1	36	35.3	145	64.2	181	55.2
2	57	55.9	57	25.2	114	34.8
3	6	5.9	13	5.7	19	5.8
4 or more	3	2.9	2	.9	5	1.5
Total	102	100.0	226	100.0	328	100.0

"one car family" environment.

Academic achievement of Drivers and Non-Drivers. In order to compare the relative academic success of one group with that of the other, all students were assigned a class rank percentile figure. These percentiles were based on scholastic averages computed cumulatively from the time the subjects entered high school through their third term marks for the 1959-1960 school year. The pupils having been so ranked from the lowest to the highest in achievement, were then assigned as equally as possible to respective quar-

tiles. The pupils having been grouped into quartiles according to their achievement, were then segregated on the basis of their being Drivers or Non-Drivers. From Table 8,

TABLE 8

Distribution of Drivers and Non-Drivers into
Class Rank Quartiles

Quartile	Drivers		Non-Drivers		All	
	Number	Percent	Number	Percent	Number	Percent
4th	24	23.5	57	25.2	81	24.7
3rd	25	24.5	60	26.6	85	25.9
2nd	26	25.5	54	23.9	80	24.4
1st	27	26.5	55	24.3	82	25.0
Total	102	100.0	226	100.0	328	100.0

it can be seen that the percentage of Drivers tends to increase slightly from the highest to the lowest ranking quartile. The distribution of the Non-Drivers among the quartiles shows a tendency for more than 50% of them to have ranked in the upper half of the percentile scale. Nevertheless, the table indicates no significant differences in the relative distribution of either group among the quartiles. According to this table, as viewed from a statistical standpoint, the achievement level of Drivers

was equal to that of the Non-Drivers.

When the study cases were separated on the basis of sex, as depicted in Tables 9 and 10, it was observed that

TABLE 9

Male Drivers and Non-Drivers Compared on the Basis of Achievement by Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	11	16.9	16	20.0	None
3rd	16	24.6	17	21.3	None
2nd	18	27.7	18	22.5	None
1st	20	30.8	29	36.2	None
Total	65	100.0	80	100.0	

with both Drivers as well as Non-Drivers, the girls have better achievement records than have the boys. This relationship is consistent with the findings in the State of Connecticut where it was determined that in high schools, girls in general have the highest scholastic averages.¹ Thus, in viewing the statistics presented in this paper, the different achievement levels of the two sexes must be

¹A. S. Northby, "Sex Differences in High School Scholarship," School and Society, LXXXVI, (February 1, 1958), pp. 63-64.

remembered. The figures in Tables 9 and 10 tend to favor

TABLE 10

Female Drivers and Non-Drivers Compared on the Basis of Achievement by Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	13	35.2	41	28.1	None
3rd	9	24.3	43	29.5	None
2nd	8	21.6	36	24.6	None
1st	7	18.9	27	17.8	None
Total	37	100.0	146	100.0	

the non-driving boys and the driving girls in the area of highest achievement. A higher percentage of non-driving boys, however, is seen in the lowest quartile. The test of significance, nevertheless, rejects the hypothesis that any achievement differences exist between the academic records of Drivers as compared to Non-Drivers when grouped homogeneously according to sex.

CHAPTER V

FLUCTUATION IN SCHOLASTIC AVERAGES

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FLUCTUATION IN SCHOLASTIC AVERAGES

In addition to the determination as to how well Drivers compared to Non-Drivers in class rank standing at one particular time (February 26, 1960), it was equally as important to compare changes which may have taken place in their relative achievement levels over a period of time. The intention in this phase of the investigation, was to determine the occurrence of any abnormal fluctuation in the achievement levels of students, after these students had acquired the use of automobiles. This chapter deals specifically with changes in academic averages, and Chapter VI is concerned with the fluctuation patterns in class standings.

The scholastic mark averages for each of the 328 students were converted from the conventional letter grade system (A, B, C, etc.), to numerical equivalents ranging from 1.0, representing a failure, to 6.0 which depicted a straight A student. In this manner year end averages for all students were compiled. With the academic averages of each student known as of the end of each school year, and as of the end of the third marking term in the present (1959-1960) year, the investigator was able to make observations into the achievement patterns of the pupils. To do this, the writer chose to examine what changes may have

taken place in the averages of Drivers and Non-Drivers during a period of one and three-fifths school years.

Each student was classified as to whether his marks had remained unchanged, had risen, or had declined during the interval between the beginning and the end of the period. Table 11 indicates that the number of Drivers who had

TABLE 11

Fluctuation in Marks for All Drivers and Non-Drivers Compared on the Basis of Change in Academic Averages from June of 1958 to February of 1960

Fluctuation	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Increased	49	48.05	100	44.3	None
No change	4	3.90	8	3.5	None
Decreased	49	48.05	118	52.5	None
Total	102	100.0	226	100.0	

raised their averages, was equal to the number whose marks declined. Over the same period, somewhat less than half of the Non-Drivers had made academic gains and slightly more than half saw their averages deteriorate. The tendency shown, though not statistically significant, indicates that a greater percentage of students who acquired the use

of automobiles, raised their averages, than did those without the frequent driving privilege.

The directional changes which occurred in the averages of boys only, are shown in Table 12. It is notable that

TABLE 12

Fluctuation in Marks for Male Drivers and Non-Drivers Compared on the Basis of Change in Academic Averages from June of 1958 to February of 1960

Fluctuation	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Increased	23	35.4	32	40.0	None
No change	3	4.6	1	1.3	None
Decreased	39	60.0	47	58.7	None
Total	65	100.0	80	100.0	

more than half the boys in both groups suffered academic losses during the year and three-fifths in which their initial and final averages were compared. It would appear that Drivers made fewer gains and greater losses than did the Non-Drivers. Here too, however, the differences between scholastic gains made by the two groups and the losses suffered by both, are statistically inconsequential. Though a tendency is seen, the author must conclude that

differences are not found between the mark fluctuation pattern of male Drivers as compared to the male Non-Drivers.

The mark fluctuation patterns of the driving and non-driving girls in the two upper classes at South Hadley High School are shown in Table 13. Therein it can be seen that

TABLE 13

Fluctuation in Marks for Female Drivers and Non-Drivers Compared on the Basis of Change in Academic Averages from June of 1958 to February of 1960

Fluctuation	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Increased	26	70.3	68	46.6	1% level
No change	1	2.7	7	4.8	None
Decreased	10	27.0	71	48.6	1% level
Total	37	100.0	146	100.0	

the total number of girls making scholastic gains, is greater than the number suffering losses. This condition supports earlier findings that girls do better than boys. With respect to the differences between the fluctuation patterns of the two groups, high degrees of significance exist. Nearly 24% more of the driving girls made academic gains than did the female Non-Drivers. Likewise, over 21%

fewer Drivers had scholastic losses through the period. From the figures in this table, it can be said that a relationship between the acquisition of the frequent driving privilege and a tendency for bettering marks, definitely exists among the girls in the Classes of 1960 and 1961 at South Hadley High School. This does not imply, however, that one is either the cause or the effect for the other. The relationship exists; why it exists, is another problem.

The next step in comparing scholastic average changes, is to determine where in the ranking scale these changes take place. To do this, all students having shown an in-

TABLE 14

Drivers and Non-Drivers having Increased Their Respective Academic Averages from June of 1958 to February of 1960, Compared on the Basis of Present Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	14	28.6	25	25.0	None
3rd	11	22.4	27	27.0	None
2nd	14	28.6	22	22.0	None
1st	10	20.4	26	26.0	None
Total	49	100.0	100	100.0	

crease in their marks over the period of a year and three-fifths, were separated into the various quartiles in which they ranked at the end of the time interval. Table 14 (see page 39) indicates that just over one half of the students, Drivers and Non-Drivers alike, having made gains in their scholastic averages, were those currently ranking in the upper half of their respective classes. The figures tend to show that where non-driving students were distributed almost equally among the quartiles, more of the Drivers in the top quartile had improved themselves and some fewer in the lowest quartile had made additional gains.

Table 15 indicates the number of cases where no

TABLE 15

Drivers and Non-Drivers Having Made No Changes in Their Respective Academic Averages from June of 1958 to February of 1960, Compared on the Basis of Present Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	1	25.0	3	37.5	None
3rd	0	0	3	37.5	None
2nd	2	50.0	1	12.5	None
1st	1	25.0	1	12.5	None
Total	4	100.0	8	100.0	

scholastic changes occurred, as being too small to be of any importance.

It is observed in Table 16 that of those students whose school marks declined, almost twice as many Drivers appear in the last quartile as are seen in the first. The

TABLE 16

Drivers and Non-Drivers Having Decreased Their
Respective Academic Averages from June of
1958 to February of 1960, Compared on
the Basis of Present Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	9	18.4	29	24.6	None
3rd	14	28.6	30	25.4	None
2nd	10	20.4	31	26.3	None
1st	16	32.6	28	23.7	None
Total	49	100.0	118	100.0	

figures are not significantly different from those of the Non-Drivers, but a trend may be seen which might imply a relationship between low ranking students going even lower, after they have acquired the use of automobiles. The four tables which follow, illustrate the directional fluctuation of marks within each of the four quartiles.

TABLE 17

Drivers and Non-Drivers Ranked in the Fourth Quartile
Compared on the Basis of Fluctuation of Academic
Averages from June of 1958 to February of 1960

Fluctuation	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Increased	14	58.4	25	43.9	None
No change	1	4.1	3	5.2	None
Decreased	9	37.5	29	50.9	None
Total	24	100.0	57	100.0	

TABLE 18

Drivers and Non-Drivers Ranked in the Third Quartile
Compared on the Basis of Fluctuation in Academic
Averages from June of 1958 to February of 1960

Fluctuation	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Increased	14	53.9	22	40.8	None
No change	2	7.7	1	1.8	None
Decreased	10	38.4	31	57.4	None
Total	26	100.0	54	100.0	

TABLE 19

Drivers and Non-Drivers Ranked in the Second Quartile
Compared on the Basis of Fluctuation in Academic
Averages from June of 1958 to February of 1960

Fluctuation	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Increased	11	44.0	27	45.0	None
No change	0	0	3	5.0	None
Decreased	14	65.0	30	50.0	None
Total	25	100.0	60	100.0	

TABLE 20

Drivers and Non-Drivers Ranked in the First Quartile
Compared on the Basis of Fluctuation in Academic
Averages from June of 1958 to February of 1960

Fluctuation	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Increased	10	37.0	26	47.2	None
No change	1	3.7	1	1.8	None
Decreased	16	59.3	28	51.0	None
Total	27	100.0	55	100.0	

Summary. The girls at South Hadley High School have shown a definite tendency to improve their scholastic aver-

ages more so than boys. Considerably more girls who became frequent users of automobiles raised their scholastic standings, than did the girls without this driving privilege. In general, students in the top quartile tended to do even better after becoming Drivers, while students (especially boys) in the lowest quartile tended to drop even lower.

CHAPTER VI

FLUCTUATION IN CLASS RANKINGS

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FLUCTUATION IN CLASS RANKINGS

The class rank of a student, expressed as a percentile, coupled with his scholastic average, present a much clearer description of his true academic achievement, than do either of these considerations by themselves. This can be seen when one considers that it is entirely possible for the average marks of a student to rise, while at the same time, owing to greater gains by his classmates, his class rank position may decline. Likewise, the reverse of this is similarly possible. Whereas the previous chapter has dealt with patterns of change in scholastic averages, this chapter is concerned with the fluctuation patterns of driving and non-driving students with respect to changes in their class rank standings.

Relative class standings, based on academic averages at the end of each school year and at the end of the third marking term of the 1959-1960 school year, were compiled and converted into percentiles (see Appendices B and C). Each student was classified as to the direction in which his class rank percentile fluctuated from the point at which it had stood in June of 1958. It is noticeable at the outset, that in comparing the results of Table 21 to those of Table 11 (Chapter V, page 36) that where the directional change pattern of marks is roughly equal in

either direction, the fluctuation of class rank percentiles is more often in a rank deteriorating, rather than in a rank improving direction. In analyzing this apparent in-

TABLE 21

Fluctuation in Class Rankings of All Drivers and Non-Drivers Compared on the Basis of Percentile Changes from June of 1958 to February of 1960

Fluctuation	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Increased	40	39.2	82	36.3	None
No change	4	3.9	6	2.7	None
Decreased	58	56.9	138	61.0	None
Total	102	100.0	226	100.0	

congruity, it must be borne in mind that when a class member drops out, the percentile ranking of all those who originally stood above him, decline slightly. Likewise, those who formerly stood below him, have their percentiles raised slightly. Inasmuch as the population of the combined junior and senior classes had declined by some 83 individuals between June of 1958 and February of 1960, and since the majority of the dropouts had stood in the lower half of their respective classes, well over half of the re-

maintaining pupils suffered automatic decreases in their percentile rankings. In comparing the fluctuation pattern of the Drivers to that of the Non-Drivers, a tendency for auto users to have made more gains as well as fewer losses in class rank standings is readily seen.

Considering the rank changes made by boys alone over the period of a year and three-fifths, Table 22 indicates

TABLE 22

Fluctuation in Class Rankings of Male Drivers and Non-Drivers Compared on the Basis of Percentile Changes from June of 1958 to February of 1960

Fluctuation	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Increased	21	32.3	18	22.5	None
No change	3	4.6	1	1.3	None
Decreased	41	63.1	61	76.2	5% level
Total	65	100.0	80	100.0	

that a significantly smaller percentage of driving boys dropped in percentile standing as compared to the male non car users. The opposite tendency is also seen where class rank increases have been noted.

An analysis of the girls at South Hadley High School

with respect to the directions in which their percentile class rankings deviated during the period in question, may be drawn from Table 23. Though not significantly differ-

TABLE 23

Fluctuation in Class Rankings of Female Drivers and Non-Drivers Compared on the Basis of Percentile Changes from June of 1958 to February of 1960

Fluctuation	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Increased	19	51.4	64	43.8	None
No change	1	2.7	5	3.4	None
Decreased	17	45.9	77	52.8	None
Total	37	100.0	146	100.0	

ent, again a greater percentage of Drivers made rank improvements than did the Non-Drivers.

To determine any significant percentile areas where noteworthy changes may have occurred, all of the study cases were classified as to whether their individual percentiles had risen, declined, or remained constant since June of 1958. The figures in Table 24 (see page 50) point out that Non-Drivers in the top quartile had made the greatest number of individual percentile gains. In the low-

est quartile, the exact reverse is true. These statistics,

TABLE 24

Drivers and Non-Drivers Having Increased Their
Percentile Rankings from June of 1958 to
February of 1960, Compared on the
Basis of Present Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	11	27.5	34	41.4	None
3rd	13	32.5	25	30.5	None
2nd	9	22.5	18	22.0	None
1st	7	17.5	5	6.1	None
Total	40	100.0	82	100.0	

though not significantly different where Drivers are compared with Non-Drivers, suggest that Non-Drivers ranking high, out-gain the Drivers. At the same time, Drivers ranking low, out-gain the Non-Drivers. The trends present in this table concerning class rank fluctuation patterns of Drivers in contrast with Non-Drivers, appear to be a complete contradiction to trends found in Table 14 (see Chapter V, page 39) which deals with patterns in the fluctuation of academic averages. Inasmuch as none of the statistics in either Table 14 or 24 show any of the Driver-

Non-Driver pattern differences to be significant, the author attributes the presence of these opposite tendencies to chance.

Because of the small number of cases, the figures in

TABLE 25

Drivers and Non-Drivers Having Made No Changes in Their Percentile Rankings from June of 1958 to February of 1960, Compared on the Basis of Present Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	1	25.0	3	50.0	None
3rd	0	0	2	33.3	None
2nd	2	50.0	0	0	None
1st	1	25.0	1	16.7	None
Total	4	100.0	6	100.0	

Table 25, above, are of little importance.

The data presented in Table 26 (see page 52) involves the relative positions of those students whose class rankings had declined. It is notable that with both Drivers and Non-Drivers, students having suffered losses in rank standings tend to be more highly concentrated in the lowest quartile. Of those in the top quartile, the percentage

of Drivers is greater by 6.2% of the figure representing

TABLE 26

Drivers and Non-Drivers Having Decreased Their
Percentile Rankings from June of 1958 to
February of 1960, Compared on the
Basis of Present Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	12	20.7	20	14.5	None
3rd	12	20.7	33	23.9	None
2nd	15	25.8	36	26.1	None
1st	19	32.8	49	35.5	None
Total	58	100.0	138	100.0	

the non-driving pupils. None of the percentage figures representing Drivers are significantly different from those in corresponding quartiles which represent Non-Drivers. There is a tendency, however, which indicates that Drivers in the top quartile are not as apt to improve their class standings as are the non-driving individuals.

For the cases ranked in the three upper quartiles, differences as shown in Tables 27, 28, and 29 are insignificant and do not seem to follow any pattern which favors one group or the other. (see pages 53 and 54)

TABLE 27

Drivers and Non-Drivers Ranked in the Fourth Quartile
Compared on the Basis of Fluctuation in Percentile
Rankings from June of 1958 to February of 1960

Fluctuation	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Increased	11	45.8	34	59.6	None
No change	1	4.2	3	5.3	None
Decreased	12	50.0	20	35.1	None
Total	24	100.0	57	100.0	

TABLE 28

Drivers and Non-Drivers Ranked in the Third Quartile
Compared on the Basis of Fluctuation in Percentile
Rankings from June of 1958 to February of 1960

Fluctuation	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Increased	13	52.0	25	41.7	None
No change	0	0	2	3.3	None
Decreased	12	48.0	33	55.0	None
Total	25	100.0	60	100.0	

TABLE 29

Drivers and Non-Drivers Ranked in the Second Quartile
Compared on the Basis of Fluctuation in Percentile
Rankings from June of 1958 to February of 1960

Fluctuation	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Increased	9	34.6	18	33.4	None
No change	2	7.7	0	0	None
Decreased	15	57.7	36	66.6	None
Total	26	100.0	54	100.0	

Of those ranked in the lowest quartile, a significant-

TABLE 30

Drivers and Non-Drivers Ranked in the First Quartile
Compared on the Basis of Fluctuation in Percentile
Rankings from June of 1958 to February of 1960

Fluctuation	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Increased	7	25.9	5	9.1	5% level
No change	1	3.7	1	1.8	None
Decreased	19	70.4	49	89.1	5% level
Total	27	100.0	55	100.0	

ly greater percentage of Drivers are shown to have improved their rank standings than had the students without the driving privilege.

Summary. From June of 1958 to February of 1960, a greater proportion of the boys who had acquired the use of automobiles advanced their individual class rank standings than had the boys without cars. This relationship was particularly noticeable with those in the lowest ranking quartile.

The statistics in this chapter indicate a general trend for students with acquired use of automobiles to make greater individual progress in class rank, than pupils not having the driving privilege.

CHAPTER VII

TIME DEVOTED TO STUDY

CHAPTER VII

TIME DEVOTED TO STUDY

Lesson preparation outside of class is an important part of a student's normal activity. Educators generally agree that insufficient time devoted to study is a major factor contributing to the inability of certain students to reach scholastic achievement levels commensurate with their individual potentialities. It has been suggested that any activity which tends to reduce the amount of time that a particular pupil should devote to the adequate preparation of his homework assignments, may contribute adversely to his academic achievement.

It has been established in Chapter IV that the general background pattern of the students who have been classified as Drivers, is similar to the pattern of those grouped as Non-Drivers. It was further determined in the same chapter that the relative achievement levels of both groups as of February of 1960, were not significantly different from each other. Had they been found to be different, this and the next several chapters might have served to suggest some possibilities as to why the groups were dissimilar. Since this is not the situation, these chapters may tend to suggest why differences in scholastic achievement levels were not found.

In the questionnaire, the 328 pupils involved in this

investigation were asked to indicate as closely as possible, the average number of hours spent each week in doing homework. On the basis of the replies, three categories of time were established- less than 6, 6 to 18, and over 18 hours per week. Table 31 compares all 328 students, first separated into the Driver and Non-Driver groups, and then

TABLE 31

Study Habits of All Drivers and Non-Drivers
Compared on the Basis of the Number of
Hours Devoted Each Week to Homework

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Over 18	16	15.7	45	19.9	None
6 to 18	73	71.6	156	69.0	None
Under 6	13	12.7	25	11.1	None
Total	102	100.0	226	100.0	

according to the three frequency divisions. Although not statistically significant, a tendency is indicated by this table, that Non-Drivers tend to devote more time to study than do the Drivers.

In Chapter IV of this paper, it was observed that the boys included by this study did not reach an achievement level equal to that accomplished by the girls. This would

seem to suggest that a similar relationship between boys and girls may exist with respect to the amounts of time given over to homework. In analyzing Table 32, it can be

TABLE 32

Study Habits of Male Drivers and Non-Drivers
Compared on the Basis of the Number of
Hours Devoted Each Week to Homework

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Over 18	8	12.3	15	18.7	None
6 to 18	46	70.8	53	66.3	None
Under 6	11	16.9	12	15.0	None
Total	65	100.0	80	100.0	

seen that a tendency for boys without the influence of automobiles to devote more time to study than boys who drive frequently, may exist. The table also indicates that after a boy has acquired the habitual use of an automobile, his study habit with respect to time does not necessarily undergo any radical change.

The statistics involving the girls of this investigation as presented in Table 33 (see page 60), tend to infer that girls who are frequent drivers of automobiles, study a little more than those without cars. Though not signifi-

TABLE 33

Study Habits of Female Drivers and Non-Drivers
Compared on the Basis of the Number of
Hours Devoted Each Week to Homework

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Over 18	8	21.6	30	20.5	None
6 to 18	27	73.0	103	70.6	None
Under 18	2	5.4	13	8.9	None
Total	37	100.0	146	100.0	

cant, this trend was expected by the author in the light of the findings in Chapter V. There it was determined that girls who became Drivers, improved their marks somewhat more so than girls without cars.

Both Tables 32 and 33 tend to lend agreement to the assumption that girls study more than boys, even though no significant differences were found between the Driver and Non-Driver patterns when separated according to sex.

In comparing the cases having indicated that they ordinarily devote more than 18 hours to doing homework each week, Table 34 (see page 61) gives evidence to the effect that more than half of them are in the top quarter of their respective classes. A higher percentage of Drivers is also noted in the highest quartile as well as the lowest.

TABLE 34

Drivers and Non-Drivers Devoting Over Eighteen
Hours Each Week to Homework Compared
on the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	10	62.5	25	55.6	None
3rd	3	18.7	10	22.2	None
2nd	1	6.3	7	15.5	None
1st	2	12.5	3	6.7	None
Total	16	100.0	45	100.0	

TABLE 35

Drivers and Non-Drivers Devoting Six to Eighteen
Hours Each Week to Homework Compared
on the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	12	16.4	30	19.2	None
3rd	20	27.4	45	28.8	None
2nd	22	30.2	38	24.4	None
1st	19	26.0	43	27.6	None
Total	73	100.0	156	100.0	

Table 35 (see page 61) compares Drivers and Non-Drivers having study time schedules which ran from 6 to 18 hours per week. It presents evidence that students in both comparative groups (Drivers and Non-Drivers) were concentrated with a fair amount of uniformity throughout the three lower quartiles. A lesser number of cases, which tended to favor Non-Drivers is seen in the top achievement quartile.

In Table 36 which compares the students who devote but little time to outside study, it is seen that they dom-

TABLE 36

Drivers and Non-Drivers Devoting Less Than Six Hours Each Week to Homework Compared on the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	2	15.4	2	8.0	None
3rd	2	15.4	5	20.0	None
2nd	3	23.0	9	36.0	None
1st	6	46.2	9	36.9	None
Total	13	100.0	25	100.0	

inate the lower quartiles. The differences in student concentrations between Drivers and Non-Drivers, are nowhere in

this table, great enough to suggest the existence of different study habit patterns for Drivers as set apart from Non-Drivers.

The four tables which follow, tend to emphasize the conclusions which can be drawn from the previous three. There are additional statistical relationships which may be noticeable, but the relatively small number of cases found in some of the categories, minimize the reliability of even large percentage differences. These tables compare the Drivers and the Non-Drivers who, as of February in 1960, were ranked respectively within the four statistical quartiles.

TABLE 37

Drivers and Non-Drivers Ranked in the Fourth
Quartile Compared as to Number of Hours
Devoted Each Week to Homework

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Over 18	10	41.7	25	43.9	None
6 to 18	12	50.0	30	52.6	None
Under 6	2	8.3	2	3.5	None
Total	24	100.0	57	100.0	

TABLE 38

Drivers and Non-Drivers Ranked in the Third
Quartile Compared as to Number of Hours
Devoted Each Week to Homework

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Over 18	3	12.0	10	16.7	None
6 to 18	20	80.0	45	75.0	None
Under 6	2	8.0	5	8.3	None
Total	25	100.0	60	100.0	

TABLE 39

Drivers and Non-Drivers Ranked in the Second
Quartile Compared as to Number of Hours
Devoted Each Week to Homework

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Over 18	1	3.8	7	13.0	None
6 to 18	22	84.7	38	70.4	None
Under 6	3	11.5	9	16.6	None
Total	26	100.0	54	100.0	

TABLE 40

Drivers and Non-Drivers Ranked in the First
Quartile Compared as to Number of Hours
Devoted Each Week to Homework

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Over 18	2	7.4	3	5.5	None
6 to 18	19	70.4	43	78.2	None
Under 6	6	22.2	9	16.3	None
Total	27	100.0	55	100.0	

With respect to the amounts of time students in the two upper classes at South Hadley High School devoted to homework, definite relationships have been determined. It was found that girls were in the habit of studying longer hours than boys. In general, the number of hours devoted to study tended to increase somewhat in proportion to ascending percentiles in the class rank scales. No variation was found in the study time pattern of Drivers as compared to Non-Drivers, taken as a whole or compared individually by sex.

CHAPTER VIII

SOCIAL ACTIVITY

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SOCIAL ACTIVITY

It is well known by educators that within any one particular high school, different students exhibit wide ranges of social aptness. Some pupils find it difficult to perform the simplest of social tasks while others continuously participate in social activities, in and out of school.

In Chapter VII it was determined that in general, the students spending the greatest amount of time in doing homework, attained the highest degree of scholastic achievement. The writer would reason, therefore, that a high degree of social activity, which may tend to reduce study time, may have a detrimental effect on achievement. Further the author reasons that the acquisition of an automobile may tend to increase a student's social activity and in this way have an effect on his school marks. This chapter will concern itself with the determination of the social activity pattern of Drivers as compared to that of the Non-Drivers.

As to the degree with which Drivers and Non-Drivers participated in social activities, all of the 328 pupils concerned in this study were classified as to whether their normal activity patterns were high (over 5 engagements per week), average (2 to 5 engagements per week), or low (less

than 2 social engagements per week). Table 41 indicates that a significantly greater percentage of Drivers were in

TABLE 41

Social Activity of All Drivers and Non-Drivers
Compared on the Basis of Frequency
of Engagements Per Week

Frequency	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Over 5	13	12.7	11	4.9	5% level
2 to 5	78	76.5	174	77.0	None
Under 2	11	10.8	41	18.1	None
Total	102	100.0	226	100.0	

the custom of seeking social entertainment more often than five times a week, than were the Non-Drivers. This relationship is understandable, for students having the frequent use of automobiles certainly should have a greater opportunity to pursue more distant and diverse activities, than do individuals without a ready source of transportation.

The social activity patterns of girls when considered separately as in Table 42 (see page 69), do appear to have certain significant differences when comparing Drivers to Non-Drivers. The frequency of social activity by car using

TABLE 42

Social Activity of Female Drivers and Non-Drivers
Compared on the Basis of Frequency
of Engagements Per Week

Frequency	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Over 5	5	13.5	4	2.7	1% level
2 to 5	30	81.1	119	81.5	None
Under 2	2	5.4	23	15.8	5% level
Total	37	100.0	146	100.0	

girls is shown to have been considerably higher than the general pattern exhibited by the young women not having the privilege to drive frequently. Further, in comparing this table with Table 43 on page 70, it can be seen that girls in general tended to have been socially more active than the boys. It must be remembered, however, that no attempt was made to discover the types of social activities in which the pupils ordinarily participated.

The same general tendency as observed with the females, is likewise seen in Table 43 (page 70) in the case of the boys. Though the tendency for male Drivers to be the most active socially is shown, the percentage differences are not great enough to be considered significant. The writer was somewhat surprised not to have found statistical dif-

TABLE 43

Social Activity of Male Drivers and Non-Drivers
Compared on the Basis of Frequency
of Engagements Per Week

Frequency	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Over 5	8	12.3	7	8.8	None
2 to 5	48	73.9	55	68.7	None
Under 2	9	13.8	18	22.5	None
Total	65	100.0	80	100.0	

ferences between these patterns. The reason for this lack of variation may involve peer group relations. One might surmise that if in a circle of friends one person acquired an automobile, that any social activity increase on his part may also include the remainder of the group who tagged along as passengers. The author also suggests that if a peer group contained no element of frequent drivers, somewhat of a lesser degree of activity may be expected.

The students whose social activity was rated as being high (more than 5 engagements per week), are compared in Table 44 on the next page. There it can be seen that Drivers tend to be found in the upper quartiles, while more of the Non-Drivers appear in the lower classifications. This relationship is reversed, however, where Drivers and Non-

TABLE 44

Drivers and Non-Drivers Participating in Over
Five Social Engagements Per Week Compared
on the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	3	23.0	1	9.1	None
3rd	4	30.8	2	18.2	None
2nd	4	30.8	3	27.3	None
1st	2	15.4	5	45.4	None
Total	13	100.0	11	100.0	

TABLE 45

Drivers and Non-Drivers Participating in Two to
Five Social Engagements Per Week Compared
on the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	17	21.8	39	22.4	None
3rd	20	25.6	53	30.5	None
2nd	18	23.1	43	24.7	None
1st	23	29.5	39	22.4	None
Total	78	100.0	174	100.0	

TABLE 46

Drivers and Non-Drivers Participating in Less Than
Two Social Engagements Per Week Compared
on the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	4	36.35	17	41.5	None
3rd	1	9.10	5	12.2	None
2nd	4	36.35	8	19.5	None
1st	2	18.20	11	26.8	None
Total	11	100.0	41	100.0	

Drivers of a less active nature, are compared in Tables 45 and 46. In both these tables Non-Drivers tend to rank generally higher than Drivers.

In Tables 47, 48, 49, and 50, following in the same order, students ranked respectively in each of the four achievement quartiles are compared. Throughout all of these can be seen running the general tendency for the figures representing Drivers to indicate a degree of higher social activity. This higher activity level on the part of the the Drivers, is attributable to the girls included in this investigation, more so than to the boys.

TABLE 47

Drivers and Non-Drivers Ranked in the Fourth Quartile
Compared on the Basis of Frequency of
Social Engagements Per Week

Frequency	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Over 5	3	12.5	1	1.8	None
2 to 5	17	70.8	39	68.4	None
Under 2	4	16.7	17	29.8	None
Total	24	100.0	57	100.0	

TABLE 48

Drivers and Non-Drivers Ranked in the Third Quartile
Compared on the Basis of Frequency of
Social Engagements Per Week

Frequency	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Over 5	4	16.0	2	3.3	5% level
2 to 5	20	80.0	53	88.4	None
Under 2	1	4.0	5	8.3	None
Total	25	100.0	60	100.0	

TABLE 49

Drivers and Non-Drivers Ranked in the Second Quartile
Compared on the Basis of Frequency of
Social Engagements Per Week

Frequency	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Over 5	4	15.4	3	5.6	None
2 to 5	18	69.2	43	79.6	None
Under 2	4	15.4	8	14.8	None
Total	26	100.0	54	100.0	

TABLE 50

Drivers and Non-Drivers Ranked in the First Quartile
Compared on the Basis of Frequency of
Social Engagements Per Week

Frequency	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
Over 5	2	7.4	5	9.1	None
2 to 5	23	85.2	39	70.9	None
Under 2	2	7.4	11	20.0	None
Total	27	100.0	55	100.0	

Summary. A high degree of social activity was definitely exhibited by the students owning automobiles or having frequent driving privileges. The highest degree of activity was observed to be among the girls classed as Drivers.

Drivers categorized according to the various degrees of social activity tended to rank slightly higher than Non-Drivers. Since the differences were not statistically significant, the writer assumes that the relative scholastic achievement levels attained by Drivers to be no different from those reached by Non-Drivers.

CHAPTER IX
ATHLETIC ACTIVITY

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ATHLETIC ACTIVITY

Beyond the scope of curricular physical education, participation in any of the athletic programs at South Hadley High School involves a transportation problem for many students. All practice sessions are scheduled for after school hours and as a result, students who would otherwise travel by school bus must either walk home or find their own means of transportation, as none is provided for them. It seemed conceivable to the author that pupils having the use of automobiles may tend to participate somewhat more in school athletics than others who find transportation a problem.

Participation in a high school athletic program may have an effect upon the scholastic achievement of certain students. The feeling of pride, self satisfaction, and team spirit, could be reason for a student to strive for similar rewards in the classroom. On the other hand, however, they might serve as a substitute for academic success. Here the problem becomes: first, do the frequent drivers of automobiles tend to become participants in school sports to any more or less of a degree than others, and second, how do the achievement levels of athletically inclined Drivers compare with the levels of similarly disposed Non-Drivers.

To answer these questions, the members of the junior and senior classes attending South Hadley High School as of February in 1960, were first classified according to degree of participation in the sports program. Three categories were established: participation in an average of one or more sports per year, less than one per year, and no participation at all. Attention here must be given to the fact that outside of physical education, which is an integral part of the curriculum, the emphasis in the athletic program at South Hadley High is directed toward the boys. Girls' sports are encouraged, but certainly not to an equal extent.

Statistics from Table 51 indicate that about one half

TABLE 51

Athletic Activity of All Drivers and Non-Drivers
Compared on the Basis of the Average Number
of School Sports Engaged in Per Year

Sports	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
1 or more	30	29.4	44	19.5	5% level
Less than 1	23	22.6	67	29.5	None
None	49	48.0	115	50.9	None
Total	102	100.0	226	100.0	

of all the students had taken part in school athletics to some extent during their high school careers. (Athletic program meaning varsity, junior varsity, and intramural competition) Of these, a significantly greater percentage of car users engaging in athletics were in the highest frequency category. This tends to support the assumption by the writer that the acquisition of an automobile by a student may be reflected in a positive correlation with a high degree of athletic participation.

The separation of the cases according to sex was somewhat more important in this chapter than in most of the others because of the suspected differences in attitude toward sports by boys as contrasted to girls. Table 52

TABLE 52

Athletic Activity of Male Drivers and Non-Drivers
Compared on the Basis of the Average Number
of School Sports Engaged in Per Year

Sports	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
1 or more	21	32.3	20	25.0	None
Less than 1	13	20.0	30	37.5	5% level
None	31	47.7	30	37.5	None
Total	65	100.0	80	100.0	

surprisingly enough, shows a tendency for driving boys to be less athletically inclined than Non-Drivers. Although a greater percentage of Drivers were in the highest participation category, a significantly greater percentage of the Non-Drivers were classed as lesser degree participants.

Table 53 on the other hand, indicates that the girls

TABLE 53

Athletic Activity of Female Drivers and Non-Drivers
Compared on the Basis of the Average Number
of School Sports Engaged in Per Year

Sports	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
1 or more	9	24.3	24	16.4	None
Less than 1	10	26.0	37	25.3	None
None	18	48.7	85	58.3	None
Total	37	100.0	146	100.0	

tend to be more interested in athletics when the use of an automobile is available but the statistics are not significant. Nevertheless, it was the girls who had apparently increased the total number of athletically inclined students to the point where significance was found between Drivers and Non-Drivers when not separated according to sex.

The academic standings of those who had participated to a high degree in the athletic programs at South Hadley High School are analyzed in Table 54, below.

TABLE 54

Drivers and Non-Drivers Participating in an Average of One or More Sports Per Year Compared on the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	6	20.0	15	34.1	None
3rd	6	20.0	9	20.4	None
2nd	9	30.0	14	31.9	None
1st	9	30.0	6	13.6	5% level
Total	30	100.0	44	100.0	

These figures indicate that a somewhat greater percentage of the Drivers stood in the lowest quartile than did the Non-Drivers. The reason for this relationship is not known, but the investigator offers the suggestion that Drivers (especially boys) may have a greater interest in the combination of autos and athletics than in the combination of athletics and academics.

As to the statistical differences between Drivers and Non-Drivers in the two remaining categories, Tables 55 and

TABLE 55

Drivers and Non-Drivers Participating in an Average
of Less Than One Sport Per Year Compared on
the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	7	30.4	16	23.9	None
3rd	4	17.4	22	32.8	None
2nd	6	26.1	14	20.9	None
1st	6	26.1	15	22.4	None
Total	23	100.0	67	100.0	

TABLE 56

Drivers and Non-Drivers Not Participating in
Sports Compared on the Basis
of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	11	22.45	26	22.6	None
3rd	15	30.60	29	25.2	None
2nd	11	22.45	26	22.6	None
1st	12	24.50	34	29.6	None
Total	49	100.0	115	100.0	

56 show a fairly even distribution throughout the four quartiles. These figures indicate that students who had participated in an average of less than one sport per year in high school, did not deviate from normal levels of academic achievement whether they were Drivers or Non-Drivers.

Table 57 which compares students ranked in the top

TABLE 57

Drivers and Non-Drivers Ranked in the Fourth Quartile Compared on the Basis of the Average Number of School Sports Engaged in Per Year

Sports	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
1 or more	6	25.0	15	26.3	None
Less than 1	7	29.2	16	28.1	None
None	11	45.8	26	45.6	None
Total	24	100.0	57	100.0	

quartile, shows virtually no differences in the participation pattern of either group.

In the third quartile (see Table 58 on page 84), a significantly greater percentage of Non-Drivers were among those having engaged in an average of less than one sport per year. Thus, Drivers who were also athletes, partici-

TABLE 58

Drivers and Non-Drivers Ranked in the Third
Quartile Compared on the Basis of the
Average Number of School Sports
Engaged in Per Year

Sports	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
1 or more	6	24.0	9	15.0	None
Less than 1	4	16.0	22	36.7	5% level
None	15	60.0	29	48.3	None
Total	25	100.0	60	100.0	

TABLE 59

Drivers and Non-Drivers Ranked in the Second
Quartile Compared on the Basis of the
Average Number of School Sports
Engaged in Per Year

Sports	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
1 or more	9	34.6	14	25.9	None
Less than 1	6	23.1	14	25.9	None
None	11	42.3	26	48.2	None
Total	26	100.0	54	100.0	

pated in the sports programs to a higher degree than did the Non-Drivers.

The statistics in Table 59 (see page 84) concerning students in the second quartile, show no significant differences between Drivers and Non-Drivers. In the first quartile, however, there is a tendency for more of the Dri-

TABLE 60

Drivers and Non-Drivers Ranked in the First
Quartile Compared on the Basis of the
Average Number of School Sports
Engaged in Per Year

Sports	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
1 or more	9	33.3	6	10.9	1% level
Less than 1	6	22.2	15	27.3	None
None	12	44.5	34	61.8	None
Total	27	100.0	55	100.0	

vers to have been athletes and for them to have participated more frequently than did the Non-Drivers.

Summary. The frequent automobile Drivers attending South Hadley High School, though fewer in number, were significantly more active in athletics than were the students not having the frequent driving privilege. Of the students

whose scholastic averages were low and whose activity in school athletics was high, a significantly greater percentage of the Drivers over the Non-Drivers were included. Significant differences in achievement were not noted among the non athletes or the athletes whose participation in sports was not excessive.

CHAPTER X

EXTRACURRICULAR ACTIVITY

CHAPTER X

EXTRACURRICULAR ACTIVITY

Making available to the student body a number of different school clubs, organizations, and functions in addition to the subject matter courses offered within the scope of the formal curriculum, constitutes another manner through which the talents, interests, and ambitions of the pupils may be stimulated and explored. Although the actual value of any of these activities cannot be accurately measured, they are considered to be sufficiently important by most educators so as to be included in most secondary school programs.

The list of extracurricular activities which are offered at South Hadley High School may be found in Appendix A as part of the questionnaire.

As suggested in the other activities of students which have been treated in other chapters of this paper, the participation in an extracurricular program of a school can so overburden a student that a detrimental effect may be seen in his scholastic achievement. It is also possible that the availability of an automobile may effect the attitudes of a particular pupil toward participation in the school activities program.

To analyze possible relationships in this area, the students were grouped into three categories: first, those

who averaged three or more different activities per year; second, those who participated in more than one but less than three per year; and third, those who averaged one or less than one extracurricular activity per year.

The distribution of the students among the three categories of participation frequency, was much the same for Drivers as it was for Non-Drivers.

TABLE 61

Extracurricular Activity of All Drivers and Non-Drivers
Compared on the Basis of the Average Number of
Activities Participated in Per Year

Activities	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
3 or more	26	25.4	56	24.8	None
2	39	38.2	89	39.4	None
1 or less	37	36.4	81	35.8	None
Total	102	100.0	226	100.0	

Tables 62 and 63 (see page 90) indicate that participation in extracurricular activities was much more pronounced by the girls than by the boys. This situation may have been due in part to the fact that more of the activities at the high school would normally attract girls more so than boys. It may have also been a reflection of a

TABLE 62

Extracurricular Activity of Male Drivers and Non-Drivers
Compared on the Basis of the Average Number of
Activities Participated in Per Year

Activities	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
3 or more	12	18.5	6	7.1	5% level
2	22	33.9	31	38.7	None
1 or less	31	47.6	43	53.8	None
Total	65	100.0	80	100.0	

TABLE 63

Extracurricular Activity of Female Drivers and Non-Drivers
Compared on the Basis of the Average Number of
Activities Participated in Per Year

Activities	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
3 or more	14	37.9	50	34.2	None
2	17	46.0	58	39.8	None
1 or less	6	16.1	38	26.0	None
Total	37	100.0	146	100.0	

greater interest by the girls in school work. Drivers of both sexes tended to be the most active in extracurricular affairs. The differences between the activity patterns of the female Drivers were negligible while a considerably higher percentage of driving boys had engaged in three or more different activities during each of their high school careers.

The higher degree of participation in the extracurricular activity program at the high school has not meant that they had equally higher achievement records. On the contrary, from Table 64 it seems as though a much greater

TABLE 64

Drivers and Non-Drivers Participating in Three or More Extracurricular Activities Per Year Compared on the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	9	34.6	26	46.4	None
3rd	6	23.1	18	32.1	None
2nd	7	26.9	11	19.7	None
1st	4	15.4	1	1.8	1% level
Total	26	100.0	56	100.0	

percentage of driving boys (see Table 62) and girls were in

the lowest ranking quartile. Nevertheless, a positive correlation between high activity in extracurricular affairs and high scholastic standings in school work is noted for both Drivers and Non-Drivers.

The students having engaged in extracurricular activities to a moderate degree, as shown in Table 65, were

TABLE 65

Drivers and Non-Drivers Participating in More Than One but Less Than Three Extracurricular Activities Per Year Compared on the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	12	30.7	23	25.8	None
3rd	9	23.1	24	27.0	None
2nd	9	23.1	23	25.8	None
1st	9	23.1	19	21.4	None
Total	39	100.0	89	100.0	

almost evenly distributed among the quartiles, Drivers and Non-Drivers alike.

The students having participated but little or not at all in the extracurricular activities program made up large proportions of both Drivers and Non-Drivers ranked in the lowest quarter of their respective classes. At the same

time, of those pupils who ranked highest in their classes, only a small percentage were students rated as being low in extracurricular activity participation. Table 66 indicates

TABLE 66

Drivers and Non-Drivers Participating in One or Less Extracurricular Activity Each Year Compared on the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	3	8.1	8	9.9	None
3rd	10	27.0	18	22.2	None
2nd	10	27.0	20	24.7	None
1st	14	37.9	35	43.2	None
Total	37	100.0	81	100.0	

that the frequency patterns of Drivers and Non-Drivers were not appreciably different from each other.

The correlation between high school marks and a high participation in extracurricular activities is further pictured in the next four tables. The activity patterns of Drivers in the fourth, third, and second quartiles, are noted by Tables 67, 68, (see page 94) and 69 (see page 95), to have been little different from the patterns exhibited

TABLE 67

Drivers and Non-Drivers Ranked in the Fourth Quartile
Compared on the Basis of the Average Number
of Extracurricular Activities
Participated in Per Year

Activities	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
3 or more	9	37.5	26	45.6	None
2	12	50.0	23	40.4	None
1 or less	3	12.5	8	14.0	None
Total	24	100.0	57	100.0	

TABLE 68

Drivers and Non-Drivers Ranked in the Third Quartile
Compared on the Basis of the Average Number
of Extracurricular Activities
Participated in Per Year

Activities	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
3 or more	6	24.0	18	30.0	None
2	9	36.0	24	40.0	None
1 or less	10	40.0	18	30.0	None
Total	25	100.0	60	100.0	

TABLE 69

Drivers and Non-Drivers Ranked in the Second Quartile
Compared on the Basis of the Average Number
of Extracurricular Activities
Participated in Per Year

Activities	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
3 or more	7	26.9	11	20.4	None
2	9	34.6	23	42.6	None
1 or less	10	38.5	20	37.0	None
Total	26	100.0	54	100.0	

by the Non-Drivers.

Table 70 (see page 96) which compares Drivers and Non-Drivers who were ranked together in the lowest achievement quartile, reveals that of the students with low participation frequencies, the Non-Drivers made up the largest percentage. Here again, as shown earlier in the chapter, is seen evidence to the effect that Drivers who had engaged in a high degree of extracurricular activity, were more apt to have ranked much lower scholastically than Non-Drivers.

Summary. Girls in the two upper classes attending South Hadley High School as of February of 1960, were considerably more active in extracurricular affairs than were the boys. The girls who drove automobiles frequently tended to be more active than female Non-Drivers. The boys who

TABLE 70

Drivers and Non-Drivers Ranked in the First Quartile
 Compared on the Basis of the Average Number
 of Extracurricular Activities
 Participated in Per Year

Activities	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
3 or more	4	14.8	1	1.8	None
2	9	33.4	19	34.6	None
1 or less	14	51.8	35	63.6	5% level
Total	27	100.0	55	100.0	

had frequent use of motor vehicles were significantly more active participants than were the non-driving boys. Taken as a whole, Drivers and Non-Drivers ranked in the three upper quartiles had little differences in their respective achievement level patterns. In the lowest quartile, however, male Drivers were significantly more active than were the non-driving boys.

CHAPTER XI

PART-TIME EMPLOYMENT

CHAPTER XI

PART-TIME EMPLOYMENT

Many of the students at South Hadley High School seek part-time employment for their after school and week-end hours. Several investigators have reported that part-time jobs may have detrimental effects upon the academic success of high school students. One of these, a survey conducted by W. D. Diemer, shows that students working 12 hours a week have somewhat lower grades than those working less than this or not at all. He further states that those working over 12 hours weekly studied an average of 20 hours per week while those working fewer hours or not at all, spent almost 28 hours each week in studying.¹ The Allstate Insurance Companies' survey indicates that car ownership leads to part-time jobs and that week-day jobs adversely effect grades.²

Neither of these investigations imply a direct cause and effect relationship between jobs, cars, and grades, but their implications do indicate a need for further research in this area.

This chapter deals with part-time employment in two

William D. Diemer, "Jobs and Students' Grades," School and Society, LXXXVI, (March 15, 1958), p. 139.

The High School Student and the Automobile (Skokie, Illinois: Safety Dept., The Allstate Insurance Cos., January, 1960), p. 21.

parts. The first section is concerned with week-day jobs and the second with employment on week-ends.

Part-time employment on week-days. The study cases were first categorized as to the number of hours at which they may have been employed. The first group consisted of the students who had ordinarily been working six or more hours per week on school days. The second group was made up of those who worked less than six hours per week and the last group included those not working on school days.

When these three groups were compared as to whether they were Drivers or Non-Drivers as shown in Table 71,

TABLE 71

Week-Day Part-Time Employment of All Drivers
and Non-Drivers Compared on the Basis
of Hours Engaged Per Week

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
6 or over	34	33.3	45	19.9	1% level
Under 6	25	24.5	42	18.6	None
None	43	42.2	139	61.5	1% level
Total	102	100.0	226	100.0	

it was determined that greater percentages of auto users were employed than were the Non-Drivers. The table also in-

dicates that the percentage is significantly greater where a high number of hours was devoted to part-time jobs. The author tends to think that jobs are needed to support the autos in some cases, and that cars make employment more likely where students have ready transportation to and from their jobs.

In comparing boys and girls in this respect, Table 72 below, and Table 73 on page 101 show that about the same

TABLE 72

Week-Day Part-Time Employment of Male Drivers
and Non-Drivers Compared on the Basis
of Hours Engaged Per Week

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
6 or over	24	36.9	14	17.5	1% level
Under 6	17	26.2	16	20.0	None
None	24	36.9	50	62.5	1% level
Total	65	100.0	80	100.0	

percentages of both sexes were unemployed Non-Drivers. The percentage of male Drivers working six or more hours per week on week-days was considerably higher than for the Non-Drivers. The same relationship is seen with respect to the girls, but the trend is not substantiated by figures which

TABLE 73

Week-Day Part-Time Employment of Female Drivers
and Non-Drivers Compared on the Basis
of Hours Engaged Per Week

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
6 or over	10	27.9	31	21.2	None
Under 6	8	21.6	26	17.8	None
None	19	51.4	89	61.0	None
Total	37	100.0	146	100.0	

are significant. From these two tables, it would seem as though the boys accounted for the up surge in week-day part-time employment by students who had the frequent driving privilege.

As to where these working and non working students ranked in their respective classes, according to Tables 74, 75 (see page 102), and 76 (see page 103), the concentrations of both Drivers and Non-Drivers were distributed almost equally among the four quartiles. Neither can significant differences be seen in the distribution patterns of the two groups. These statistics indicate the lack of any impression which the week-day part-time employment may have made upon the scholastic achievement of either the Drivers or the Non-Drivers.

TABLE 74

Drivers and Non-Drivers Employed Week-Days for
Six or More Hours Per Week Compared on
the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	7	20.6	12	26.7	None
3rd	10	29.4	8	17.8	None
2nd	10	29.4	12	26.7	None
1st	7	20.6	13	28.8	None
Total	34	100.0	45	100.0	

TABLE 75

Drivers and Non-Drivers Employed Week-Days for
Less Than Six Hours Per Week Compared
on the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	6	24.0	11	26.2	None
3rd	5	20.0	10	28.6	None
2nd	8	32.0	12	23.8	None
1st	6	24.0	9	21.4	None
Total	25	100.0	42	100.0	

TABLE 76

Drivers and Non-Drivers Not Employed on
Week-Days Compared on the
Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	11	25.6	34	24.5	None
3rd	10	23.2	42	30.2	None
2nd	8	18.6	30	21.6	None
1st	14	32.6	33	23.7	None
Total	43	100.0	139	100.0	

TABLE 77

Drivers and Non-Drivers Ranked in the Fourth Quartile
Compared on the Basis of Hours Engaged Per Week
in Week-Day Part-Time Employment

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
6 or over	7	29.2	12	21.0	None
Under 6	6	25.0	11	19.3	None
None	11	45.8	34	59.7	None
Total	24	100.0	57	100.0	

Tables 77 above, 78 and 79 on page 104, and 80 ana-

TABLE 78

Drivers and Non-Drivers Ranked in the Third Quartile
Compared on the Basis of Hours Engaged Per Week
in Week-Day Part-Time Employment

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
6 or over	10	40.0	8	13.3	5% level
Under 6	5	20.0	10	16.7	None
None	10	40.0	42	70.0	1% level
Total	25	100.0	60	100.0	

TABLE 79

Drivers and Non-Drivers Ranked in the Second Quartile
Compared on the Basis of Hours Engaged Per Week
in Week-Day Part-Time Employment

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
6 or over	10	38.4	12	22.2	None
Under 6	8	30.8	12	22.2	None
None	8	30.8	30	55.6	5% level
Total	26	100.0	54	100.0	

lyze the Drivers and Non-Drivers grouped according to their respective quartile rankings. The statistics in Table 77 (see page 103) and Table 80 (below) show no significant

a

TABLE 80

Drivers and Non-Drivers Ranked in the First Quartile
Compared on the Basis of Hours Engaged Per Week
in Week-Day Part-Time Employment

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
6 or over	7	25.9	13	23.7	None
Under 6	6	22.2	9	16.3	None
None	14	51.9	33	60.0	None
Total	27	100.0	55	100.0	

differences in the employment patterns of Drivers and Non-Drivers. The two middle quartiles were made up of significantly greater percentages of working Drivers, however.

Though the findings in the chapter thus far support the assumption that Drivers tend to seek part-time employment more so than Non-Drivers, it does not follow that any detrimental effect was found with respect to academic success, between the achievement patterns of either group.

Part-time employment on week-ends. From an educational point of view, it would be more desirable for those

students who find it necessary or desirable to work part-time, to seek employment on week-ends so as not to interfere with school work. Table 81 indicates that the number

TABLE 81

Week-End Part-Time Employment of All Drivers
and Non-Drivers Compared on the Basis
of Hours Engaged Per Week

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
6 or over	40	39.2	51	22.5	1% level
Under 6	19	18.6	35	15.5	None
None	43	42.2	140	62.0	1% level
Total	102	100.0	226	100.0	

of students employed on week-ends was virtually equal to the number working on week-days (see Table 71 on page 99). This relationship holds for both Drivers and Non-Drivers. Similarly as with week-day jobs, significantly higher percentages of driving students over non driving students had part-time work. Somewhat higher percentages have jobs on week-ends, however.

In comparing Tables 82 and 83 (see page 107), it is readily seen that male drivers make up significantly greater percentages of those employed than male Non-Drivers and

TABLE 82

Week-End Part-Time Employment of Male Drivers
and Non-Drivers Compared on the Basis
of Hours Engaged Per Week

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
6 or over	31	47.7	21	26.3	1% level
Under 6	10	15.4	7	8.7	None
None	24	36.9	52	65.0	1% level
Total	65	100.0	80	100.0	

TABLE 83

Week-End Part-Time Employment of Female Drivers
and Non-Drivers Compared on the Basis
of Hours Engaged Per Week

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
6 or over	9	24.3	30	20.5	None
Under 6	9	24.3	28	19.2	None
None	19	51.4	88	60.3	None
Total	37	100.0	146	100.0	

the figures representing the girls, though not significant, show a trend in the same direction.

The three tables which follow, analyze the driving and non driving students in relation to their respective academic rankings with respect to the amounts of time devoted to jobs on week-ends. It can be seen in Table 84 below, and in Table 85 on page 109, that week-end part-time jobs have apparently not effected the scholastic achievement pattern of the Drivers in relation to the pattern of the Non-Drivers. This same relationship was found to exist in the case of week-day employment of students as shown in Tables 74 and 75 on page 102 earlier in this paper.

TABLE 84

Drivers and Non-Drivers Employed Week-Ends for
Six or More Hours Per Week Compared on
the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	8	20.0	14	27.4	None
3rd	9	22.5	11	21.6	None
2nd	14	35.0	11	21.6	None
1st	9	22.5	15	29.4	None
Total	40	100.0	51	100.0	

TABLE 85

Drivers and Non-Drivers Employed Week-Ends for
Less Than Six Hours Per Week Compared
on the Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	5	26.30	8	22.8	None
3rd	6	31.60	7	20.0	None
2nd	4	21.05	13	37.2	None
1st	4	21.05	7	20.0	None
Total	19	100.0	35	100.0	

TABLE 86

Drivers and Non-Drivers Not Employed on
Week-Ends Compared on the
Basis of Quartile Rank

Quartile	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
4th	11	25.6	35	25.0	None
3rd	10	23.2	42	30.0	None
2nd	8	18.6	30	21.4	None
1st	14	32.6	33	23.6	None
Total	43	100.0	140	100.0	

In Table 86 (see page 109) the statistics show a similar distribution of pupils among the quartiles for those not employed on week-ends. It is revealed in this table, however, that the highest percentage of students was made up of pupils classified as Drivers ranked in the lowest quartile.

The tables which follow analyze the Drivers and Non-Drivers ranked in each of the four quartiles according to their respective degree of week-end part-time employment. Here also, as with week-day employment, there are no significant differences shown in either the fourth or the first quartile. Significantly greater percentages of Dri-

TABLE 87

Drivers and Non-Drivers Ranked in the Fourth
Quartile Compared on the Basis of Hours
Engaged Per Week in Week-End
Part-Time Employment

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
6 or over	8	33.3	14	24.6	None
Under 6	5	20.8	8	14.0	None
None	11	45.9	35	61.4	None
Total	24	100.0	57	100.0	

TABLE 88

Drivers and Non-Drivers Ranked in the Third
Quartile Compared on the Basis of Hours
Engaged Per Week in Week-End
Part-Time Employment

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
6 or over	9	36.0	11	18.3	1% level
Under 6	6	24.0	7	11.7	5% level
None	10	40.0	42	70.0	1% level
Total	25	100.0	60	100.0	

TABLE 89

Drivers and Non-Drivers Ranked in the Second
Quartile Compared on the Basis of Hours
Engaged Per Week in Week-End
Part-Time Employment

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
6 or over	14	53.8	11	20.4	1% level
Under 6	4	15.4	13	24.1	None
None	8	30.8	30	55.5	5% level
Total	26	100.0	54	100.0	

TABLE 90

Drivers and Non-Drivers Ranked in the First
Quartile Compared on the Basis of Hours
Engaged Per Week in Week-End
Part-Time Employment

Hours	Drivers		Non-Drivers		Significance
	Number	Percent	Number	Percent	
6 or over	9	33.4	15	27.3	None
Under 6	4	14.8	7	12.7	None
None	14	51.8	33	60.0	None
Total	27	100.0	55	100.0	

vers ranked in the second and third quartiles had been employed, and here too, the relationship parallels findings in the area of week-day employment.

Summary. About one half of the students in the junior and senior classes at South Hadley High School as of February, 1960, were employed on a part-time basis. It was further determined that Drivers were far more apt to be holding jobs than Non-Drivers, and that the greatest percentage of these were boys. No statistics were found which could conclusively show that jobs and low grades were correlated either for Drivers or Non-Drivers of either sex. The author concludes that part-time employment, week-day or week-end, whether by Drivers or Non-Drivers, has not made noticeable effects, detrimental or beneficial, upon the achievement

levels of the students included in this investigation.

CHAPTER XII

CONCLUSIONS AND RECOMMENDATIONS

CHAPTER XII

CONCLUSIONS AND RECOMMENDATIONS

The prime purpose of this investigation was to determine and analyze some of the relationships existing between students at South Hadley High School who have the frequent use of automobiles and those who do not have ready access to cars. The major interest of the study was to determine whether the scholastic achievement of the Driver group was any different from that of the Non-Drivers. Had there been a significant difference between the achievement patterns of the two groups, the writer would have looked to the variations which this study found in some of the usual activities of students which may have contributed to any abnormal deviation in scholastic achievement by the Driver group.

As it turned out, the investigation found no statistical evidence to support the assumption that autos have a detrimental effect upon the achievement of students attending South Hadley High School. It can also be said that certain usual activities such as school athletics, part-time jobs, social activity, extracurricular activity, etc., some of which were determined by this study to be different in pattern for Drivers as compared to Non-Drivers, do not have detrimental effects upon the academic achievement of these students.

Conclusions. Conclusions which may be drawn from this study are as follows:

1. There was no significant statistical evidence to indicate that students having the frequent driving privilege attain levels of academic achievement different from the students in the non-driving group. In general, pupils with autos who had low academic standings, ranked low prior to the acquisition of the use of a car. Where students with poor records were noted to have had excessive athletic and extracurricular tendencies, the Drivers were most likely to have been the very poorest among them.

2. Following the acquisition of the driving privilege, more Drivers, especially girls, exhibited a tendency to raise their scholastic averages than did the students without this influence.

3. Some of the activities common to both Drivers and Non-Drivers which may have an effect upon the relative academic success of individuals within either group were determined to show the following relationships:

a) The influence of the automobile seemed to have no effect upon the amount of time that the students devoted to outside study.

b) Students having the frequent use of automobiles were socially more active than Non-Drivers.

c) Pupils very active in the school athletic programs were generally poorer academic achievers than

others. Drivers so classified were more highly concentrated in the lowest ranking quartile than were the Non-Drivers. A smaller proportion of driving boys participated in athletics, but those who did were very active in the program.

d) Boys with the driving privilege were more active in extracurricular affairs than were the boys without cars. Where a high degree of activity was noted, the poorest scholars were more apt to have been Drivers than Non-Drivers.

e) Drivers held more part-time jobs than Non-Drivers. The holding of a part-time job, whether week-day or week-end, was not correlated with any under achievement on the part of the Drivers.

Recommendations. The situation will shortly confront South Hadley High, when the number of students desiring to drive automobiles to and from the school will far surpass the number of parking spaces presently available to them. At that time the following question will have to be resolved: shall sufficient additional parking facilities be provided to meet the needs of the pupils, or shall restrictions limiting the number of students who may drive to school be imposed on them. If the scholastic achievement level of the students is to be used as a criterion in the determination of which pupils shall and shall not be permitted to drive to school, it should be a policy which will allow individual consideration for each driver rather than

an impersonal blanket restriction. The writer recommends that the following considerations enter into each case where a driving to school restriction shall be contemplated:

1. Has the academic achievement level of the student changed markedly since he or she first acquired the use of an automobile. If so, in what direction and to what extent.

2. Has driving to school allowed or shall driving to school permit the student to participate more fully in the school program, or has it been or shall it be a detriment to this endeavor.

3. Can the privilege of driving to school be used in any way which will improve the learning situation of the individual concerned.

The results of this investigation apply to South Hadley High School alone. It is at this time absolutely necessary for persons or agencies making decisions concerning the automobile and the high school student to undertake a complete analysis of their local situations, before setting forth a policy which might be to the detriment of the student welfare.

APPENDIX A
THE QUESTIONNAIRE

QUESTIONNAIRE

1. Name _____
 (first) (middle) (last)
2. Address _____
 (number) (street) (town)
3. Check your course of study. a. College ___
 b. Commercial ___
 c. General ___
4. What plans do you have for yourself when you first graduate or leave high school?
 a. None ___
 b. Indefinite ___
 c. Specific type job .. ___
 d. Military service ... ___
 e. Further schooling .. ___
 f. Marriage (girls) ... ___
 g. Other (specify) _____
5. Does your family (people you live with) own the property where you live? a. Yes ___
 b. No ___
6. How many automobiles are there in your family?
 a. None ___
 b. 1 ___
 c. 2 ___
 d. 3 ___
 e. More (how many) ___
7. Is your father or male guardian:
 a. Deceased ___
 b. Retired ___
 c. Disabled ___
 d. Usually employed ... ___
 e. Other (specify) _____
8. Is your mother or female guardian:
 a. Deceased ___
 b. Retired ___
 c. Disabled ___
 d. A homemaker ___
 e. Employed full or
 part time ___
 f. Other (specify) _____
- (check more than one if applicable)

Check the various years in which you may have participated in any of the following school activities:

	Fr.	So.	Jr.	Sr.
a. Band	---	---	---	---
b. Baton Twirling	---	---	---	---
c. Cafeteria Assistant	---	---	---	---
d. Camera Club	---	---	---	---
e. Cheer Leader	---	---	---	---
f. Chemistry Club	---	---	---	---
g. Class Officer	---	---	---	---
h. Debating	---	---	---	---
i. Democracy Fair	---	---	---	---
j. Dramatics Club	---	---	---	---
k. Driver Education	---	---	---	---
l. Electronics Club	---	---	---	---
m. French Club	---	---	---	---
n. Future Nurses Club	---	---	---	---
o. Future Teachers Club	---	---	---	---
p. Glee Club	---	---	---	---
q. Graduation Usher	---	---	---	---
r. History Club	---	---	---	---
s. Homeroom Representative	---	---	---	---
t. Latin Club	---	---	---	---
u. Library Assistant	---	---	---	---
v. Magazine Drive Room Captain	---	---	---	---
w. Magazine Drive Class Leader	---	---	---	---
x. Model Congress	---	---	---	---
y. Monogram	---	---	---	---
z. Office Assistant	---	---	---	---
aa. Orchestra	---	---	---	---
bb. Press Bureau	---	---	---	---
cc. Pro Merito	---	---	---	---
dd. Science and Math Club	---	---	---	---
ee. Science Fair	---	---	---	---
ff. Senior Play	---	---	---	---
gg. Spotlight	---	---	---	---
hh. SAS Member	---	---	---	---
ii. SAS Officer	---	---	---	---
jj. Student Council	---	---	---	---
kk. Yearbook	---	---	---	---

10. Indicate the years during which you may have participated in any of the following school sports. This includes competition on the Varsity, Junior Varsity, and Intramural levels for both boys and girls.

	Fr.	So.	Jr.	Sr.
a. Baseball	—	—	—	—
b. Basketball	—	—	—	—
c. Field Hockey	—	—	—	—
d. Football	—	—	—	—
e. Track	—	—	—	—
f. Other (specify) _____	—	—	—	—

11. How often do you usually seek social entertainment? (this includes dates, parties, going out with the crowd, visiting friends, attending social clubs, YMCA, YWCA, etc.)

- a. Never —
- b. A few times a year —
- c. Once a month —
- d. Once a week —
- e. Twice a week —
- f. Three times a week —
- g. Four to five times a week —
- h. Six or more a week —

12. Do you have a license to drive?

- a. Yes —
- b. No —

13. Do you have the use of a car just about whenever you want it?

- a. Yes —
- b. No —

14. If you answered "No" to the last question, do you have the use of a car some of the time?

- a. Yes —
- b. No —

15. Do you drive a car to school?

- a. Never —
- b. Once in awhile —
- c. About $\frac{1}{2}$ the time .. —
- d. Most of the time .. —
- e. Every day —

16. Do you own a car?

- a. Yes —
- b. No —

17. If you have the use of a car at any time, what part of the expenses of that auto do you pay?
- a. None
 - b. Less than half
 - c. About half
 - d. More than half
 - e. All expenses
18. About how many hours per week do you spend on your studies, outside of school hours?
- a. None
 - b. Less than 3
 - c. 3 to 6
 - d. 6 to 9
 - e. 12 to 18
 - f. 18 to 24
 - g. More than 24
19. Do you usually do part-time work on week-days in addition to your school work?
- a. Yes
 - b. No
20. If "Yes", about how many hours per week do you work? (Do not include week-end time)
- a. Less than 3
 - b. 3 to 6
 - c. 6 to 9
 - d. 9 to 12
 - e. 12 to 18
 - f. 18 to 24
 - g. More than 24
21. Do you usually do part-time work on week-ends?
- a. Yes
 - b. No
22. If "Yes", about how many hours per week do you work on week-ends?
- a. Less than 3
 - b. 3 to 6
 - c. 6 to 9
 - d. 9 to 12
 - e. 12 to 18
 - f. More than 18

APPENDIX B
MEMBERS OF THE CLASS OF 1961

MEMBERS OF THE CLASS OF 1961 IN THE FOURTH QUARTILE

<u>Class Rank</u>	<u>Percentile</u>	<u>Male</u>	<u>Female</u>	<u>Driver</u>	<u>Non-Driver</u>
1.0	99		X		X
2.0	99	X			X
3.0	99		X	X	
4.0	98		X		X
5.0	98	X			X
6.0	97		X		X
7.0	97		X		X
8.0	96		X		X
9.0	96		X		X
10.0	95		X		X
11.0	95	X			X
12.0	94		X		X
13.0	93		X		X
14.0	93		X		X
15.0	92		X		X
16.5	92		X		X
16.5	92		X	X	
18.0	91		X	X	
19.0	90		X		X
20.5	90	X		X	
20.5	90	X			X
22.0	89		X	X	
23.0	88		X		X
24.0	88	X		X	
25.0	87	X			X
26.0	87	X			X
27.0	86	X			X
28.5	85		X		X
28.5	85	X			X
30.0	85		X		X
32.0	84	X		X	
32.0	84		X		X
32.0	84		X		X
34.0	82	X			X
35.5	82	X			X
35.5	82		X		X
37.0	81	X			X
38.0	80		X		X
39.5	80		X		X
39.5	80		X		X
41.0	79		X		X
42.0	78		X		X
43.0	78		X		X
44.5	77	X		X	
44.5	77		X		X
46.0	76		X		X

MEMBERS OF THE CLASS OF 1961 IN THE FOURTH QUARTILE

(Contd.)

<u>Class Rank</u>	<u>Percentile</u>	<u>Male</u>	<u>Female</u>	<u>Driver</u>	<u>Non-Driver</u>
Totals		15	31	8	38

MEMBERS OF THE CLASS OF 1961 IN THE THIRD QUARTILE

48.5	74	X		X	
48.5	74	X		X	
48.5	74		X		X
48.5	74		X		X
51.0	74		X		X
52.0	73		X		X
53.0	73	X		X	
55.0	71		X		X
55.0	71		X		X
55.0	71		X		X
57.5	70		X		X
57.5	70	X		X	
59.0	69		X		X
60.0	69		X		X
61.0	68		X		X
62.5	68		X		X
62.5	68		X		X
65.0	66		X		X
65.0	66		X		X
65.0	66		X		X
67.0	65		X		X
68.0	65	X			X
69.0	64		X		X
70.0	64		X	X	
71.0	63	X			X
72.0	63		X		X
73.0	62		X		X
74.0	62	X		X	
75.0	61		X		X
77.0	60	X			X
77.0	60		X		X
77.0	60		X		X
80.0	58	X			X
80.0	58		X		X
80.0	58		X		X

MEMBERS OF THE CLASS OF 1961 IN THE THIRD QUARTILE

(Contd.)

<u>Class Rank</u>	<u>Percentile</u>	<u>Male</u>	<u>Female</u>	<u>Driver</u>	<u>Non-Driver</u>
82.0	57		X		X
83.0	57		X		X
84.0	56		X		X
85.5	55	X		X	
85.5	55		X		X
87.5	54		X		X
87.5	54	X		X	
89.0	54	X			X
90.0	53		X		X
91.5	52	X		X	
91.5	52	X		X	
93.0	52		X		X
95.0	51	X		X	
95.0	51		X		X
95.0	51	X			X
Totals		16	34	11	39

MEMBERS OF THE CLASS OF 1961 IN THE SECOND QUARTILE

97.5	49		X		X
97.5	49		X	X	
99.0	48		X	X	
100.0	48	X			X
101.5	47		X		X
101.5	47		X		X
103.0	46	X			X
104.0	46		X		X
105.0	45		X		X
106.0	45	X		X	
107.0	44		X		X
108.0	44		X		X
109.0	43	X			X
110.0	43	X			X
111.0	42	X		X	
112.0	42		X		X
113.5	41		X		X
113.5	41	X			X
115.5	40		X		X
115.5	40	X		X	
117.0	39		X		X

MEMBERS OF THE CLASS OF 1961 IN THE SECOND QUARTILE

(Contd.)

<u>Class Rank</u>	<u>Percentile</u>	<u>Male</u>	<u>Female</u>	<u>Driver</u>	<u>Non-Driver</u>
118.0	38	X			X
119.0	38	X			X
120.5	37	X			X
120.5	37		X		X
122.5	36	X			X
122.5	36		X		X
124.0	35		X		X
125.5	35		X		X
125.5	35	X			X
127.5	34	X		X	
127.5	34		X		X
129.5	33		X		X
129.5	33		X		X
131.5	32		X		X
131.5	32	X		X	
133.0	31	X		X	
134.0	30	X			X
135.0	30		X		X
136.0	29		X		X
138.0	28	X			X
138.0	28	X			X
138.0	28	X			X
140.0	27	X			X
141.0	26		X		X
142.5	26		X		X
142.5	26		X		X
Totals		21	26	8	39

MEMBERS OF THE CLASS OF 1961 IN THE FIRST QUARTILE

145.5	24		X		X
145.5	24	X			X
145.5	24	X			X
145.5	24		X		X
149.0	22		X		X
149.0	22		X		X
149.0	22	X		X	
151.0	21	X		X	
152.5	20	X			X
152.5	20		X		X

MEMBERS OF THE CLASS OF 1961 IN THE FIRST QUARTILE

(Contd.)

<u>Class Rank</u>	<u>Percentile</u>	<u>Male</u>	<u>Female</u>	<u>Driver</u>	<u>Non-Driver</u>
154.5	19		X		X
154.5	19	X		?	?
156.0	19	X		X	
157.0	18	X			X
158.0	17		X		X
159.0	17	X			X
160.0	16	X			X
161.0	16		X		X
162.0	15		X		X
163.0	15		X		X
164.0	15		X		X
166.0	13	X			X
166.0	13	X			X
166.0	13	X			X
168.0	12	X			X
169.0	12		X		X
171.0	11		X		X
171.0	11	X		X	
171.0	11	X			X
173.5	9	X			X
173.5	9	X			X
176.0	8		X		X
176.0	8		X		X
176.0	8		X	X	
178.0	7		X		X
179.0	7		X		X
180.0	6	X			X
181.5	5	X			X
181.5	5		X		X
183.0	4		X	X	
184.0	4		X		X
185.0	3		X		X
186.0	3	X		X	
187.0	2	X			X
188.0	2		X		X
189.0	1	X			X
190.0	1	X		X	
191.0	0	X			X
Totals		25	23	8	39

APPENDIX C

MEMBERS OF THE CLASS OF 1960

MEMBERS OF THE CLASS OF 1960 IN THE FOURTH QUARTILE

<u>Class Rank</u>	<u>Percentile</u>	<u>Male</u>	<u>Female</u>	<u>Driver</u>	<u>Non-Driver</u>
1.0	99		X	X	
2.0	99		X		X
3.0	98		X		X
4.0	98		X		X
5.0	97	X			X
6.0	96		X	X	
7.0	95		X		X
8.0	94	X			X
9.0	94		X		X
10.0	93		X		X
11.0	92		X	X	
12.0	92		X		X
13.0	91	X		X	
14.0	90		X	X	
15.0	90	X			X
16.0	89	X		X	
17.0	88	X		X	
18.0	88		X		X
19.0	87	X		X	
20.0	86	X		X	
21.0	85	X			X
22.0	85		X	X	
24.0	83		X		X
24.0	83		X		X
24.0	83	X		X	
26.0	82		X	X	
27.0	81		X	X	
28.0	80		X	X	
29.5	79		X	X	
29.5	79		X		X
31.5	78		X		X
31.5	78	X			X
33.0	77		X		X
34.0	76		X		X
35.0	75	X		X	
Totals		12	23	16	19

MEMBERS OF THE CLASS OF 1960 IN THE THIRD QUARTILE

<u>Class Rank</u>	<u>Percentile</u>	<u>Male</u>	<u>Female</u>	<u>Driver</u>	<u>Non-Driver</u>
36.0	74	X		X	
37.5	74	X			X
37.5	74		X		X
40.5	72	X		X	
40.5	72	X			X
40.5	72		X		X
40.5	72	X			X
43.0	70		X		X
44.0	69		X		X
45.0	68		X	X	
46.0	68	X		X	
47.0	67	X		X	
48.0	66		X	X	
49.0	66	X		X	
50.0	65		X	X	
52.0	63		X	X	
52.0	63		X		X
52.0	63		X	X	
54.0	62		X		X
55.0	61		X		X
56.5	60		X		X
56.5	60	X			X
58.0	59	X			X
59.5	58	X			X
59.5	58	X			X
61.0	57	X			X
62.0	56		X		X
63.0	56	X			X
64.0	55		X	X	
65.5	53		X	X	
65.5	53	X			X
68.0	52	X			X
68.0	52		X	X	
68.0	52		X		X
70.0	50	X		X	
Totals		17	18	14	21

MEMBERS OF THE CLASS OF 1960 IN THE SECOND QUARTILE

<u>Class Rank</u>	<u>Percentile</u>	<u>Male</u>	<u>Female</u>	<u>Driver</u>	<u>Non-Driver</u>
72.0	49		X		X
72.0	49		X		X
72.0	49		X	X	
74.0	48		X	?	?
75.0	47	X		X	
76.0	46		X		X
77.0	46		X	X	
78.5	45	X		X	
78.5	45	X		X	
80.5	43	X		X	
80.5	43	X		X	
82.0	42		X		X
83.5	41	X			X
83.5	41	X		X	
85.0	40	X		X	
86.0	39	X			X
87.0	39		X		X
88.0	38	X		X	
89.5	37		X	X	
89.5	37	X		X	
91.0	36		X		X
92.0	35	X		X	
93.0	34	X		X	
94.0	34		X	X	
95.0	33		X		X
96.5	32		X		X
96.5	32	X			X
98.0	31		X		X
100.5	29	X		X	
100.5	29		X		X
100.5	29		X		X
100.5	29		X	X	
103.0	28		X	X	
104.0	27		X		X
Totals		15	19	18	15

MEMBERS OF THE CLASS OF 1960 IN THE FIRST QUARTILE

<u>Class Rank</u>	<u>Percentile</u>	<u>Male</u>	<u>Female</u>	<u>Driver</u>	<u>Non-Driver</u>
107.0	24	X		X	
107.0	24	X		X	
107.0	24	X			X
107.0	24		X		X
107.0	24		X		X
110.5	23	X		X	
110.5	23	X		X	
112.5	21		X	X	
112.5	21	X		X	
114.0	20	X			X
115.5	18	X		X	
115.5	18	X		X	
117.0	17	X			X
118.0	17	X			X
119.5	16	X			X
119.5	16		X		X
121.0	15	X		X	
122.0	14	X			X
123.0	13	X		X	
124.0	12	X			X
125.0	12		X	X	
126.5	11		X		X
126.5	11	X			X
128.0	10		X		X
129.0	9	X		X	
130.5	8	X		?	?
130.5	8	X			X
132.0	7	X		X	
133.0	6		X	X	
134.0	5	X			X
135.0	5	X		X	
136.0	4	X		X	
137.0	3		X		X
138.0	2	X		?	?
139.0	2	X		X	
140.0	1	X		X	
141.0	0		X	X	
Totals		27	10	19	16

SELECTED BIBLIOGRAPHY

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Annual Report of the Town Officers of Granby, Massachusetts for the Year Ending December 31st., 1959. Northampton, Mass: Gazette Printing Co., Inc., 1960. 150 pp.

Annual Reports of the Officers of the Town of South Hadley, Massachusetts for the Year Ending December 31, 1959. South Hadley Falls, Mass: Hadley Printing Co., 1960. 146 pp.

Donley, Marshall O., Jr. "Auto, Report Cards, and Safety," NEA Journal, XLVIII (September, 1959), pp. 29-31.

Letter from Jere K. Reid, Senior High School, Carlsbad, New Mexico, March 23, 1960.

Letter from Eugene H. Van Vliet, Principal, Tenafly Senior High School, Tenafly, New Jersey, February 10, 1960.

Northby, A. S. "Sex Differences in High School Scholarship." School and Society, LXXXVI (February 1, 1958), pp. 63-64.

Smith, Robert. "On Student Driving," School Board Journal, CXL (April, 1960), pp. 22-23.

The High School Student and the Automobile. Skokie, Ill: Safety Department, The Allstate Insurance Cos., January, 1960. 21 pp.

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PROBLEM APPROVED BY:

Albert S. Anthony

William J. Komey
(Problem Committee)

DATE

Aug 29, 1960



