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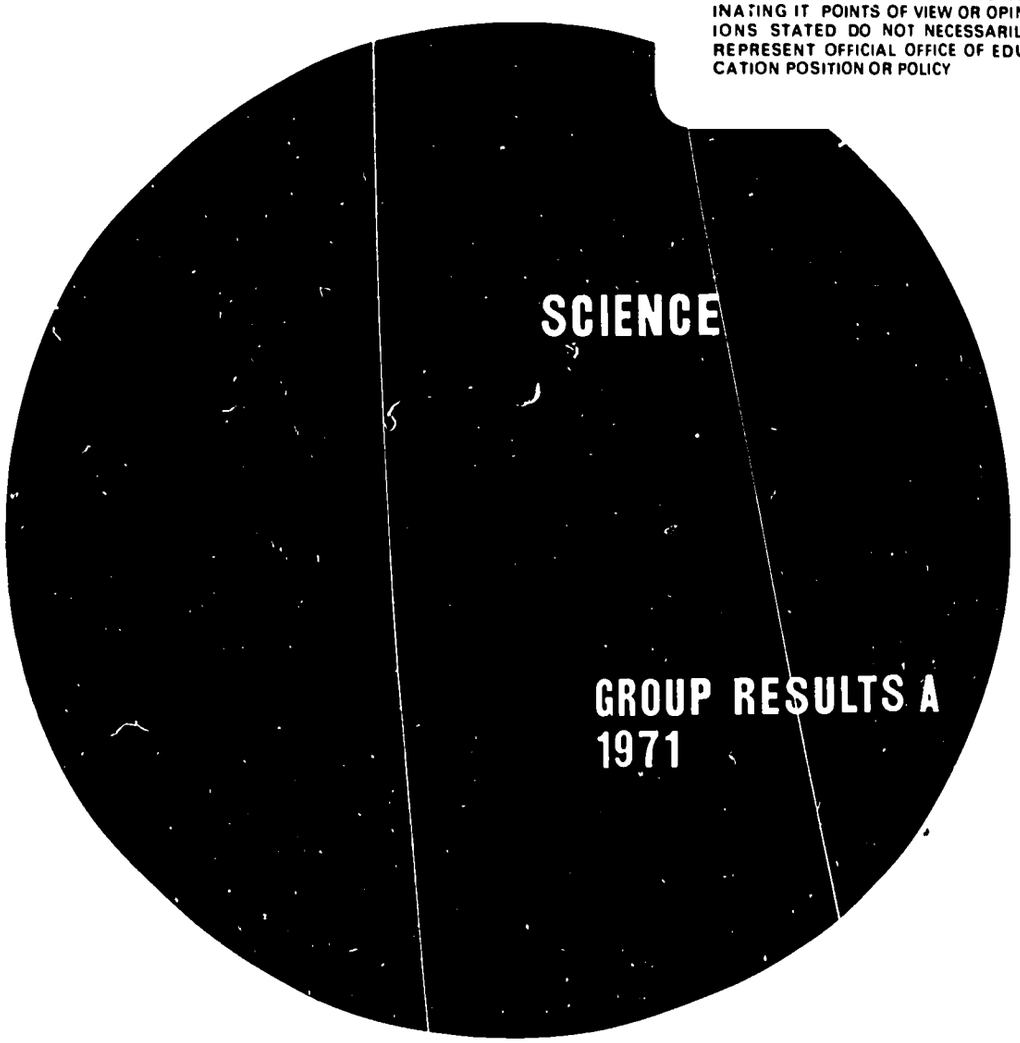
ABSTRACT

This report is part of the National Assessment on what children know and can do in science. The results are reported in terms of percentages of respondents who provide correct responses to specific exercises. Among the interesting results are the following: (1) Males performed better than females, increasingly through the four National Assessment ages; (2) Females did appreciably better than males on exercises involving knowledge of human birth or reproduction; (3) At all four ages, respondents from the Southeast were successful less often than the respondents from the country as a whole; (4) The other three regions were similar to one another in typical performance, with some regional variations; and (5) Individuals living in urban fringe areas scored the highest and those in large cities the lowest. Appendices include: Definitions of Age, Region and Size of Community; National Percentages of Success; Effects for Region, Size of Community, and Sex for the Science Exercises; and Standard Errors for Region, Size-of-Community, and Sex Effects. (BB)



REPORT 4
1969-70 Assessment
Sex, Region, Size of Community

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

A Project of the Education Commission of the States

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Assessment Reports

#1	Science: National Results	July, 1970
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NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

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NATIONAL ASSESSMENT REPORT 4

1969-1970 SCIENCE: GROUP RESULTS FOR SEX, REGION, AND SIZE OF COMMUNITY

April, 1971

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SUMMARY

National Assessment's main purpose is to measure change in what children and young adults know and can do.

The first step toward providing this information for science was National Assessment Report No. 1,* which gave the national percentages of success for about half the science exercises administered during the first science assessment, conducted in 1969-70.

The next step toward answering questions about progress cannot be taken until science is assessed again in 1972-73. After that, reports of science results will emphasize what seems to have been learned better, and what less well. In the meantime, our reports are confined to the results of the only administration of science exercises conducted so far.

This report examines differences between sexes, among four geographical regions, and among four sizes of community.** The results are reported in terms of percentages of respondents who provide correct responses to specific exercises.

The most interesting differences in percent correct are:

(Sex)

A. Males performed better than females, increasingly through the four National Assessment ages (9, 13, 17 and young adults between 26 and 35). Almost all of this increase came from exercises calling on knowledge of physical science. For exercises on biological science, adult males did 2% better than adult females, while the corresponding difference for exercises on physical science was more than 14%. (At age 17, the differences were about 1.5% and 4% respectively.)

B. Females did appreciably better than males on exercises involving knowledge of human birth or reproduction.

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* National Assessment Report 1. 1969-1970 Science: National Results and Illustrations of Group Comparisons. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, $1.75.

** These groups are defined in Appendix B.

(Region)

C. At all four ages, respondents from the Southeast were successful about 5% less often than respondents from the country as a whole.

D. The other three regions were similar to one another in typical performance, with some advantage for the Northeastern and Central regions at ages 9 and 13, for the Northeast and West at age 17, and for the West for young adults.

(Size of Community)

E. Respondents living in Urban Fringes did about 3% better than the country as a whole, Medium-Size Cities came next, then Smaller Places, and then Big Cities (roughly 3.5% below the national performance).

F. The relative position of Smaller Places and Big Cities changed somewhat with age. At ages 9 and 13, Smaller Places fell only 1% below the country as a whole, while Big Cities fell nearly 5% below. At ages 17 and 26 to 35, Smaller Places and Big Cities did about the same, roughly 2.5% below the country as a whole.

(Objectives)

G. Whether comparisons were based on sex, region, or size of community, the typical differences for exercises assigned to Objective 2 (Possess the abilities and skills needed to engage in the processes of science) tended to be a little more extreme (about 1%) than those associated with Objective 1 (Know the fundamental facts and principles of science).

LIMITATIONS

Interpretation

This report considers three of the ways in which the results of the first Science report can be divided: sex, region and size of community. A later report will also consider certain other ways, including parental education, respondent's color and type of community.

In the present report, sex, region, and size of community are analyzed separately. Consider a region, say the Southeast, and an age, say 9. The figures given here are the best

figures we know how to extract to show how 9-year-olds from the Southeast perform in comparison with all 9-year-old groups.

For those concerned with action to improve or maintain educational progress, these same figures illuminate simple facts, for example how 9-year-old performance in the Southeast compares with that for the whole country.

There is a kind of interpretation that should never be made on the basis of the sort of figures given in this report. The fact that figures reflect Southeast performance or Big City performance does not mean that the performances thus reflected have arisen precisely from living in the Southeast or in a Big City, or from the attitudes, techniques, facilities and staffs of the school system involved.

In particular, just what happens in a region involves other things than that region's schools. Larger fractions of the children in some regions belong to a particular size-of-community group. Thus effects due only to size of community can appear to be regional differences. Larger or smaller fractions of the parents in some regions have particular amounts of education. Thus effects due only to parental education can appear to be regional differences. And so on. Migration from one region or size of community to another can further complicate the picture. There are such difficulties, some of which we know how to adjust for, and some of which we do not.

It is important for us to distinguish between an interest in causes and an interest in what the present situation is. To guide readers who want to think about causes, numbers usually have to be found by looking at (or considering) combinations of several classifications. Such numbers will be more appropriate for thinking about causes than the sort of number given in the present report, although they may still be far from perfect. (Such numbers will be given in a later report.) To guide readers who want to compare today's situations, as they stand, say region versus region or one size of community versus another, it is appropriate to look at regions separately or at sizes of communities separately, which has been done in this present report. This distinction between causes and present situations is important. Readers should be careful to understand it and then keep it in mind.

Coverage

The analyses of this report cover all exercises for which adequate scorings were available for machine analysis by January 22, 1971. Certain other exercises (up to five per age) will have adequate scorings available for inclusion in later reports. There is no reason to expect that this absence of at most 4% of the exercises appreciably alters the overall impact of the present report.

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METHODS

This report presents results for respondents at four ages (9, 13, 17, and young adults) classified in three different ways: males and females, residents of four different geographical regions of the nation, and residents of communities of four different population sizes. (Appendix B defines region and size of community.) Our concern is to describe how well these groups of respondents do on science exercises.

In the interests of clarity and ease, we want to make as few numerical comparisons as will adequately describe what we are to look at. When there are only two groups, as with sex divided into male and female, one numerical comparison will suffice. We need only compare one group with the other. For sex we will use the difference

$$\left[\begin{array}{c}\text{Sex}\\ \text{Difference}\end{array}\right] = \left[\begin{array}{c}\%\ \text{Success}\\ \text{For Males}\end{array}\right] - \left[\begin{array}{c}\%\ \text{Success}\\ \text{For Females}\end{array}\right].$$

For example, one exercise given at age 9 shows 76% of the males and 68% of the females responding successfully. Using the procedure above,

$$\begin{array}{c}\text{Sex}\\ \text{Difference}\end{array} = 76\% - 68\% = 8\% .$$

When there are more than two groups, such differences are not as simple to use. With four groups, such as four regions or four community sizes, simplicity is gained by comparing the percentage of success of respondents in each group with that in the nation as a whole. We shall call the number thus obtained an <u>effect</u>. One example would be

$$\left[\begin{array}{c}\text{Northeast}\\ \text{Effect}\end{array}\right] = \left[\begin{array}{c}\text{Northeast}\\ \%\ \text{Success}\end{array}\right] - \left[\begin{array}{c}\text{National}\\ \%\ \text{Success}\end{array}\right].$$

For one exercise which 66% of 9-year-olds in the Northeast and 55% of all 9-year-olds answered successfully, the regional effect is

$$\begin{array}{c}\text{Northeast}\\ \text{Effect}\end{array} = 66\% - 55\% = 11\% .$$

What Should Be Described?

For people of the same age, when we compare the performance of a group--in a geographic region, or from a size of community--with all people of that age in the country, the results are different for each exercise--different, but not too different. Even though some exercises show an advantage for the group, others a deficit, there is often a clear tendency for the exercises that we are considering as a whole to lean one way or the other. We describe this tendency by reporting the typical behavior of exercises.

Since not all exercises show the same advantage or deficit for the group, description of the typical behavior of all exercises in the class is usually not enough. We can learn something more from studying individual exercises for which the group advantage or deficit differs substantially from this typical behavior. If we use an appropriate rule to identify these atypical exercises, it will be worthwhile to mention each of them individually, telling something of their nature and reporting what advantage or deficit each shows when the group is compared with the whole country. This concentration on atypical exercises is particularly helpful because exercises showing close to typical behavior are often lacking in distinctive flavor. Atypical exercises, by contrast, often tell us something.

When we deal with the two sexes, we do the same things, except we shall compare males with females, rather than a group with the whole country, both in terms of typical behavior and in terms of atypical exercises.

Classes of Exercises

Another approach to the discussion of our results is possible because the science exercises may be separated into classes by some common feature. We may investigate the behavior of the exercises for each class, and then ask how this behavior changes from one class to another.

Only a few separations into classes are considered in this report. One of these is provided by content. Most exercises call on knowledge of either physical or biological science.

Another classification is provided by the four science objectives:*

1. Know fundamental facts and principles of science;

2. Possess the abilities and skills needed to engage in the processes of science;

3. Understand the investigative nature of science;

4. Have attitudes about and appreciations of scientists, science, and the consequences of science that stem from adequate understandings.

Although other ways of classifying the exercises might be at least as useful in describing sex differences, regional effects, or community size effects, we have not found them.

What Shall Be Typical?

In the interest of simplicity and clarity, we choose to summarize the behavior of a set of exercises by the median (or midpoint) of the differences from national results. The median is a summary value such that an equal number of the values summarized lie on either side of it. For the adult sample--for instance, as in Exhibit 2-1 on page 6 --there were 119 exercises, for 97 of which men were more often right than women. There were 59 exercises where the sex difference favored men by more than 9.7%, and 59 where the sex difference was less favorable to men. (Of these latter 59 differences, 37 favored men by less than 9.7% and 22 favored women.) Because equal numbers were more and less favorable to men, we call 9.7% the median difference and use it to summarize all 119 differences.

The median is an effective typical value because (1) it is easy to understand and (2) it is little affected by the presence or absence of unusual values.

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* Norris, Eleanor L. (Ed.) Science objectives. Ann Arbor, Michigan: Committee on Assessing the Progress of Education, 1969.

Choosing Cutoffs

Only a sample of each age group responded to each exercise, yet National Assessment results are concerned with whole populations--sometimes with all 9-year-olds in the country, sometimes with all 13-year-old boys, sometimes with all 17-year-olds in the Northeast, sometimes with all adults in small cities, and so on. Thus there must always be a step from sample to population in interpreting National Assessment results, allowing for the inescapable small differences between sample results and population facts. This inevitably raises statistical considerations--considerations which ought to guide our approaches, our exposition, and our statements without interfering excessively with the reporting and discussion of results.

The samples taken in National Assessment were well designed scientific probability samples. As a result, it would be possible to assess how large the differences between sample value and population value are likely to have been for almost any quantity we chose to calculate from the results--for example, a sex difference. Results of such calculations have guided the choices in this report of how large a departure from typical (median) behavior qualifies an exercise for separate consideration. Appendix A discusses considerations involved in, and the exact nature of, this choice.

The chosen rule sets cutoffs determining which comparisons we call atypical. The cutoffs found by applying the chosen rule are shown by two arrows on each picture of the distribution of comparisons. Exercises corresponding to comparisons outside these cutoffs are discussed individually.

2.

MALE-FEMALE DIFFERENCES

National Assessment was designed to allow comparisons of performance among a number of different population groups. For example, at every age level the performance of males on the science exercises may be compared with that of females. Do boys and girls perform equally well on science exercises? If not, do differences appear for all science exercises, or only for certain kinds of exercises?

To find answers to these questions, we first consider, for every science exercise, the difference between the percentage of success for males and that for females.

The distributions of differences for all exercises, at ages 9, 13, 17, and adult, are presented in Exhibit 2-1. In this exhibit the length of each bar represents the number of science exercises that show a given difference between percentage correct for males and females. A difference of plus 7% indicates that 7% more males than females got the correct answer. A difference of minus 7% means that 7% fewer males than females got the correct answer.

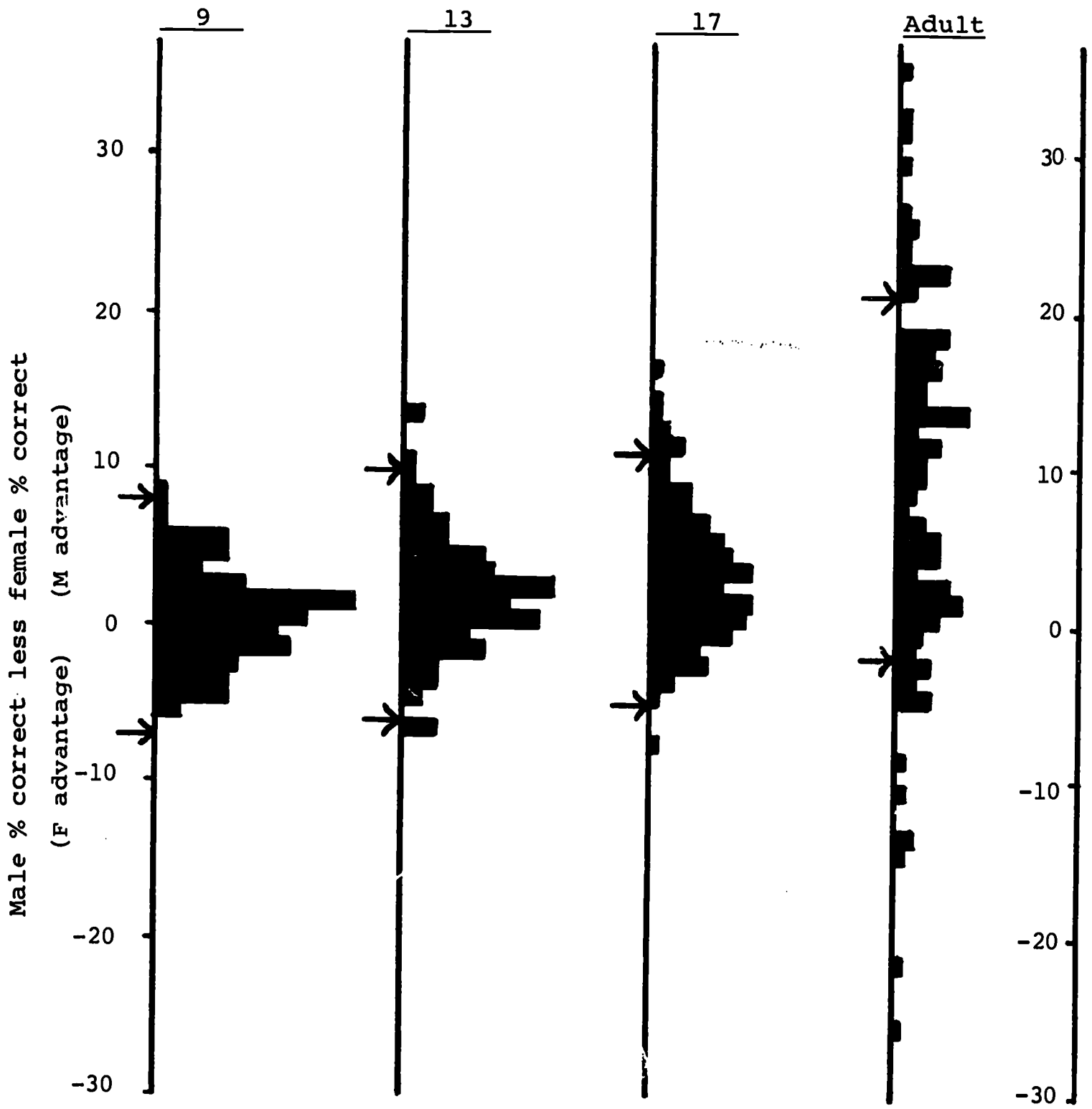
A striking feature of the distributions in Exhibit 2-1 is the large spread of male-female differences for adults, ranging from one exercise on which the correct answer is given by 35% more men than women to another exercise on which the difference is in favor of women by 25%. In sharp contrast, age 9 sex differences spread much less, ranging from an exercise on which boys do 8% better than girls to one where girls do 5% better than boys.

For adults, it is clear that performance on a number of science exercises is decisively better for males than for females, while for a number of other science exercises, females perform much better than males. At ages 13 and 17, the range of sex differences is considerably smaller than for adults but still slightly greater than at age 9.

The median male-female difference for all science exercises is shown on Exhibit 2-1 for each age level. These medians show a progressive increase with age -- 0.5% at age 9, 1.7% at age 13, 3.0% at age 17, and 9.7% for adults. With increasing age, then, there is an increasing tendency for males to perform better than females on science exercises.

Exhibit 2-1

Male-female differences in percentage correct for all science exercises at four age levels



	9	13	17	Adult
No. of Exercises	145	122	124	119
Median difference	0.5%	1.7%	3.0%	9.7%

As noted in Chapter 1, the arrows in Exhibit 2-1 show the cutting points beyond which exercises are worth individual discussion as atypical exercises. These exercises are discussed individually in Chapter 5, where we find that the exercises on which male performance is atypically superior are, without exception, physical science exercises. For exercises assessing knowledge of biological science, the typical male-female difference is small. On some biological science exercises, performance of females is better than that for males.

The relation between age and the male-female difference on typical physical or biological science exercises is shown in Exhibit 2-2. For biological science exercises, the median sex difference remains small at all four age levels, rising from 0.1% at age 9 to 2.3% for adults. The median sex difference for physical science exercises, on the other hand, rises from a modest 0.8% at age 9 to 14.2% for young adults. These results suggest that the increasing tendency with age for males to perform better than females on all science exercises is largely accounted for by the exercises in physical science. At every age studied, males and females perform more nearly alike on exercises that assess knowledge of biological science.

Among the biological science exercises at each age, one or more are designed to assess knowledge of human birth or reproduction. For example, one exercise (No. 101 at age 9 and No. 201 at age 13) asks "Where does a human baby come from?" Another exercise (No. 330 at age 17 and No. 416 for adults) asks "On the average, in human females, the egg is released how many days after menstruation begins?" Also appearing at age 17 (Exercise No. 325) and at the adult level (Exercise No. 420) is the question "What is the function of the placenta in a pregnant human female?" For these and other similar but unreleased exercises, it is of interest to look at male-female performance differences.

Exhibit 2-3 displays these male-female differences.

Exhibit 2-2

Median male-female differences for physical and biological science exercises at four age levels

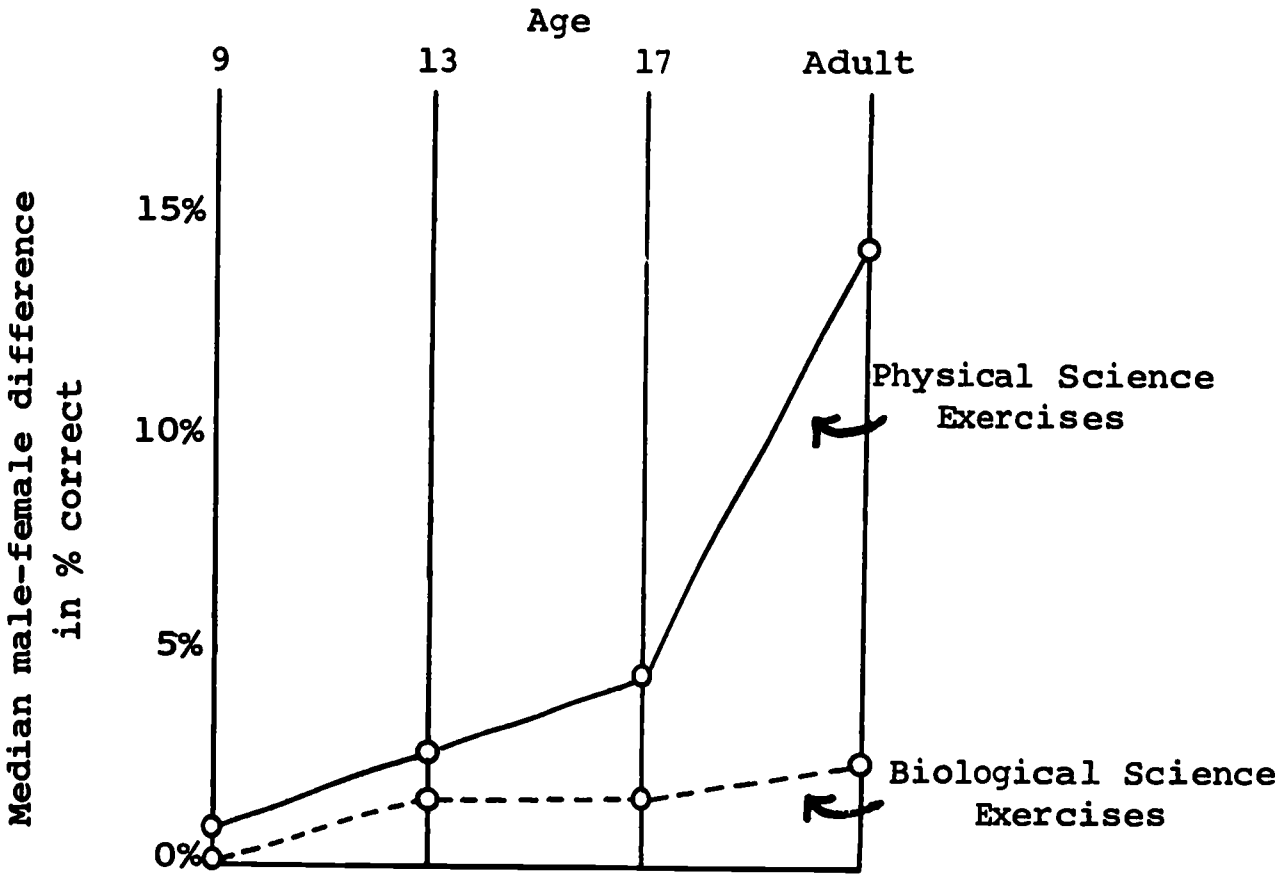


Exhibit 2-3

Male-female difference in percent correct for every exercise relating to human birth or reproduction (Negative differences imply females more often correct)

Age			
9 (1 exercise)	13 (2 exercises)	17 (4 exercises)	Adult (6 exercises)
0%	2%	5%	- 2%
	0%	0%	- 2%
		-3%	- 4%
		-8%	-13%
		-15%	
		-25%	

The exhibit shows that for two exercises, one at age 13 and one at age 17, boys get the correct answer more often than girls. For three exercises, one at 9, one at 13, and one at 17, there is no sex difference in performance. For eight exercises, two at 17 and six at the adult level, the percentage correct for females is higher than that for males. It is noteworthy that all of the adult exercises relating to human reproduction show a performance difference in favor of women. Even on exercises referring to elements of the reproductive system in the human male, women give the correct answer more often than men.

Male-female differences can also be analyzed in terms of the objectives the exercises were designed to assess. When this is done, we find that exercises for Objective 1 (Know fundamental facts and principles of science) and Objective 2 (Possess the abilities and skills needed to engage in the processes of science) yield median sex differences indicating a male advantage at all four ages. At every age, the difference in favor of males is at least slightly greater for the typical exercise that assesses Objective 2 than for the typical exercise that assesses Objective 1.

3.

REGIONAL EFFECTS

To what extent are the patterns of correct responses to the science exercises consistent from region to region of the country and to what extent are there patterns of response that characterize some regions and not others? Are the observed regional patterns consistent from one age level to another, or are there distinctive age patterns? Are regional differences, if they exist, limited to certain exercises, or are they found for all exercises?

To find answers to these questions, we examine the data from several perspectives. As indicated in Chapter 1, a regional effect is the difference between the percentage correct for that region and the national percentage correct. If the percentage correct is greater for the region, we refer to regional advantage; if the percentage correct is smaller for the region, we have a regional deficit.

In our study of regional differences, we begin by looking at the distribution of the effects for all exercises at each age level and noting the median. Next we identify exercises for which the regional effects are atypical and examine them for distinctive characteristics. Then we consider classes of exercises as defined by science objectives and as defined by science content (physical science versus biological science).

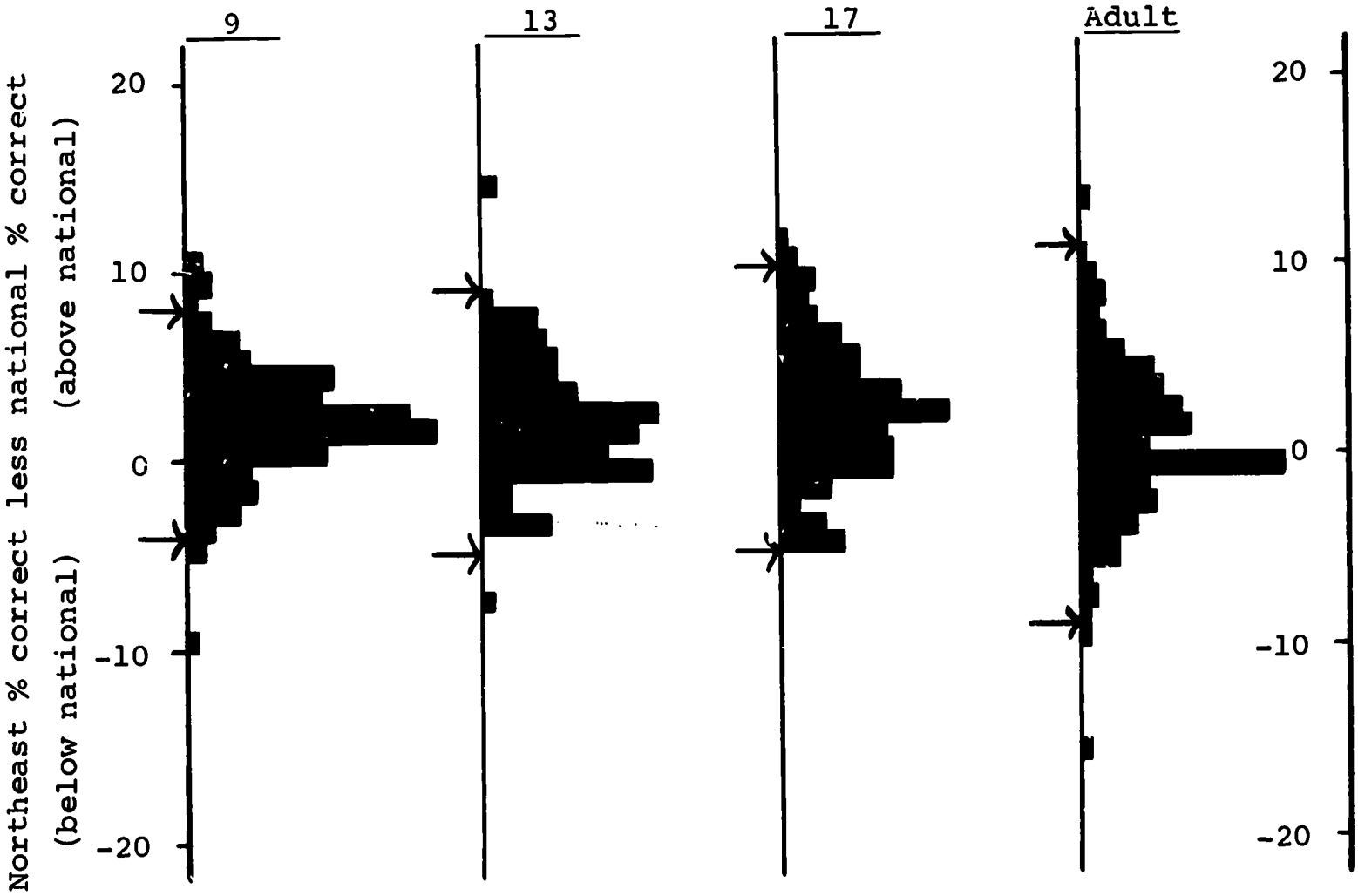
Details of the comparisons are reported in Chapter 6. In this chapter we concentrate on the major findings, taking the regions in the order Northeast, Southeast, Central, and West and then discussing interrelationships.

Northeast

The distributions of Northeast effects are presented in Exhibit 3-1 for the four age levels. The medians of the distributions for ages 9, 13, and 17 are close to 2% (2.2%, 2.0%, and 2.4%). For these three ages, the percentage correct in the Northeast is about 2% higher than for the country as a whole. The median for the adult sample is very near zero, and there is no clear evidence that adults in the Northeast perform any better or worse than adults in the total sample on the group of exercises as a whole.

Exhibit 3-1

Distributions of Northeast regional effects
for all science exercises at four age levels



While the differences at each age level in the Northeast are spread out around the medians, most of the spread is attributable to sampling error, much more so than for the sex difference distributions of Chapter 2. For each age level, however, there are some differences that cannot be accounted for by sampling error alone. The arrows in Exhibit 3-1 show the boundaries beyond which exercises are considered atypical. (Considerations involved in identifying typical and atypical exercises are discussed in Chapter 1 and Appendix A.) These atypical exercises are examined individually in Chapter 6, where we find no observable pattern except for a tendency for the Northeast to have a special advantage on exercises involving the abilities and skills needed to engage in the processes of science. (See the section on "classes of exercises" below.)

Southeast

Distributions of the Southeast effects for all exercises are presented in Exhibit 3-2 for the four age levels. Again the spreads are only somewhat greater than can be expected from sampling error. Whereas the median effects were all positive for the Northeast (about 2% at ages 9, 13, and 17), all of the medians for the Southeast are negative. For each age the Southeast performance is about 5% below that of the country as a whole.

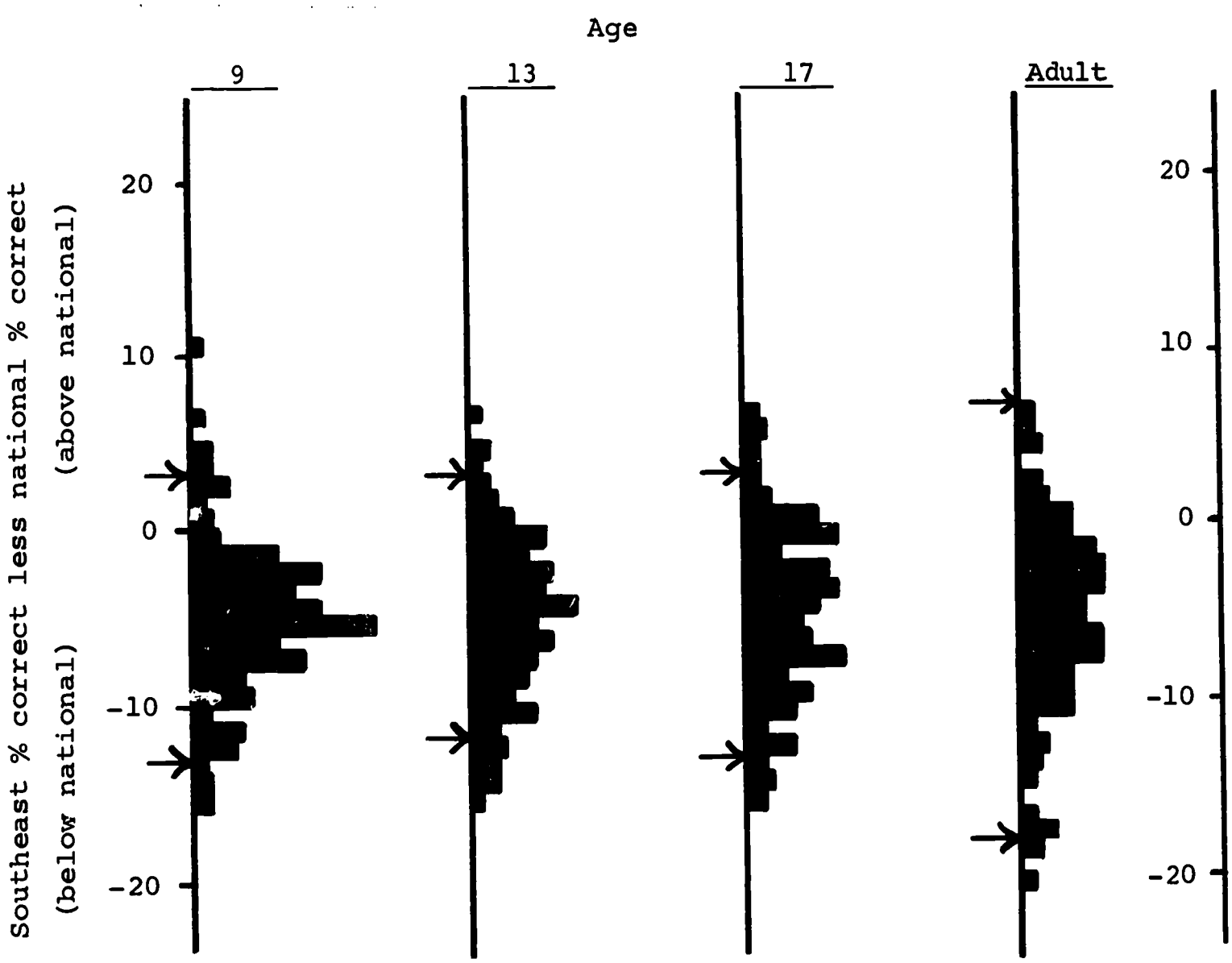
When exercises exhibiting atypical effects are examined age level by age level (see Chapter 6), no pattern can be seen. When atypical exercises are collected across age levels, however, a pattern begins to emerge. This pattern involves the science objectives and is discussed below (see page 18).

Central

Distributions of the regional effects for the Central region are pictured in Exhibit 3-3. Most of the effects fall between the arrows marking the limits beyond which exercises are atypical, and the distributions are generally symmetrical. At age 9 and age 13 the medians are 1.6% and 1.9% respectively. These are not large effects, but they are larger than one would expect to find simply as a result of sampling fluctuations. At age 9, 72% of the exercises show an advantage for the Central region; at age 13 the Central region has an advantage on 80% of the exercises.

Exhibit 3-2

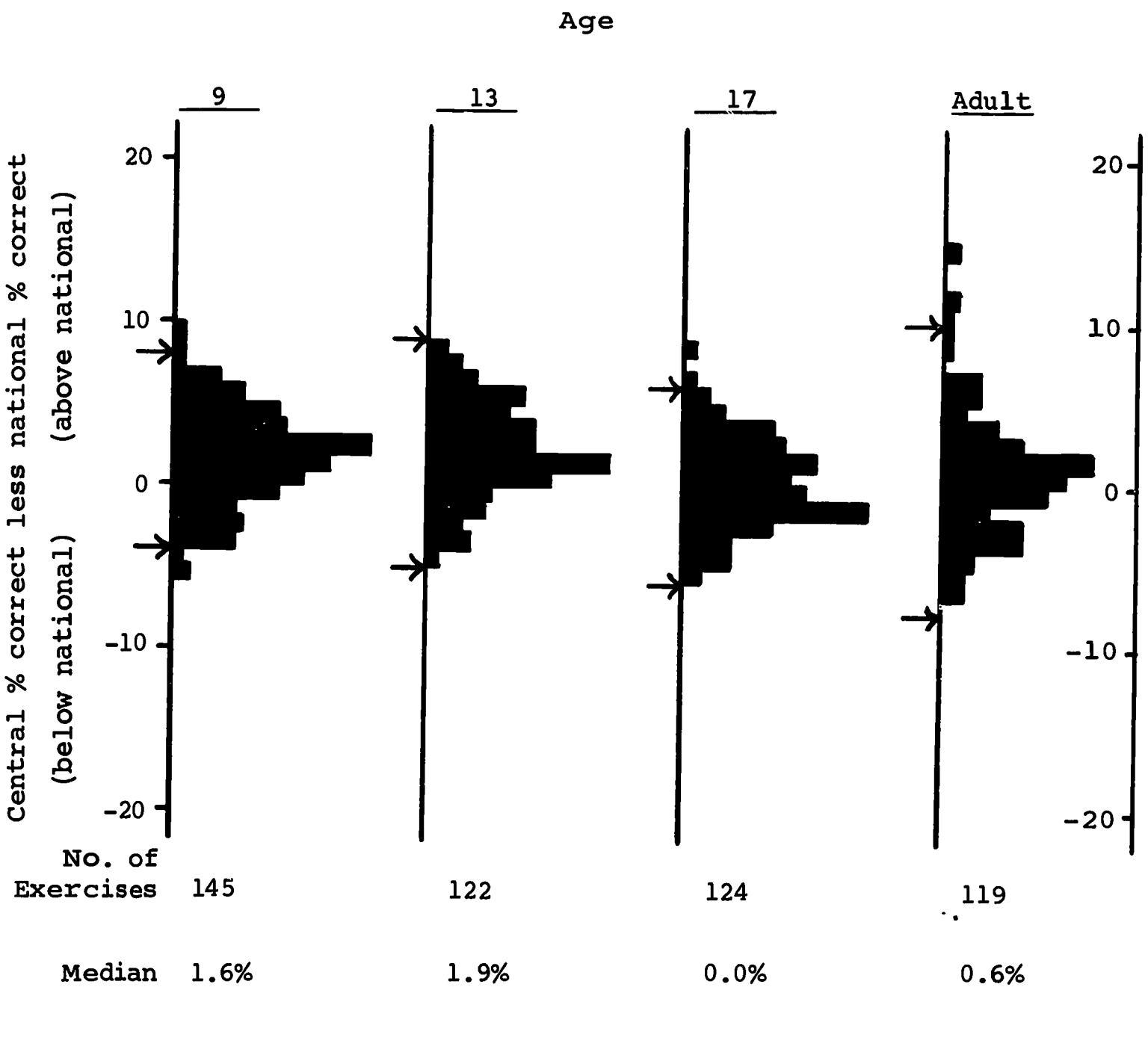
Distributions of Southeast regional effects
for all science exercises at four age levels



	9	13	17	Adult
No. of Exercises	145	122	124	119
Median	-5.1%	-4.8%	-4.8%	-5.1%

Exhibit 3-3

Distributions of Central regional effects
for all science exercises at four age levels



For 17-year-olds and adults the picture is different. At age 17, the median is zero and the exercises are split evenly between those showing an advantage and those showing a deficit. The median for adults (0.6%) is barely positive; there is insufficient evidence to conclude that there is a general advantage for this group.

When the atypical exercises are examined (Chapter 6), no distinctive patterns are found.

West

The distributions of effects for the West are presented in Exhibit 3-4. At ages 17 and adult the West performs about 2% better than the country as a whole (1.7% and 2.6%), while ages 9 and 13 exhibit insignificant median effects (0.0% and -0.6%).

A detailed examination of the 17 exercises showing atypical effects (Chapter 6) reveals no pattern.

Classes of Exercises

As indicated in Chapter 1 (page 3), the exercises were written to assess four objectives. Since only a few exercises are assigned to Objectives 3 and 4, the most illuminating analysis comes from comparing the median effects of exercises classed under Objectives 1 and 2. Exhibit 3-5 presents the median effects for these two objectives and for all exercises regardless of objectives. The most striking aspect of the comparison of Objective 1 and 2 effects is that the effects for exercises classed under Objective 2 tend to be a little more extreme than those for Objective 1 exercises. For most combinations of region and age, as Exhibit 3-5 shows, the median effect for Objective 2 exercises is about 1% larger than the median effect for Objective 1 exercises, and both medians are in the same direction from the national percentage of success. For example, the median effect for Objective 2 exercises for West adults (2.9%) is 0.6% larger than the median effect for Objective 1 exercises (2.3%). In both cases, the effect is positive, indicating that West adults perform better than adults for the country as a whole.

There are several exceptions to this pattern. The behavior of Northeast adults and West 9-year-olds is unusual in that their Objective 2 medians are in the opposite direction from the medians of Objective 1 exercises. Effects for Southeast adults are also

Exhibit 3-4

Distributions of West regional effects
for all science exercises at four age levels

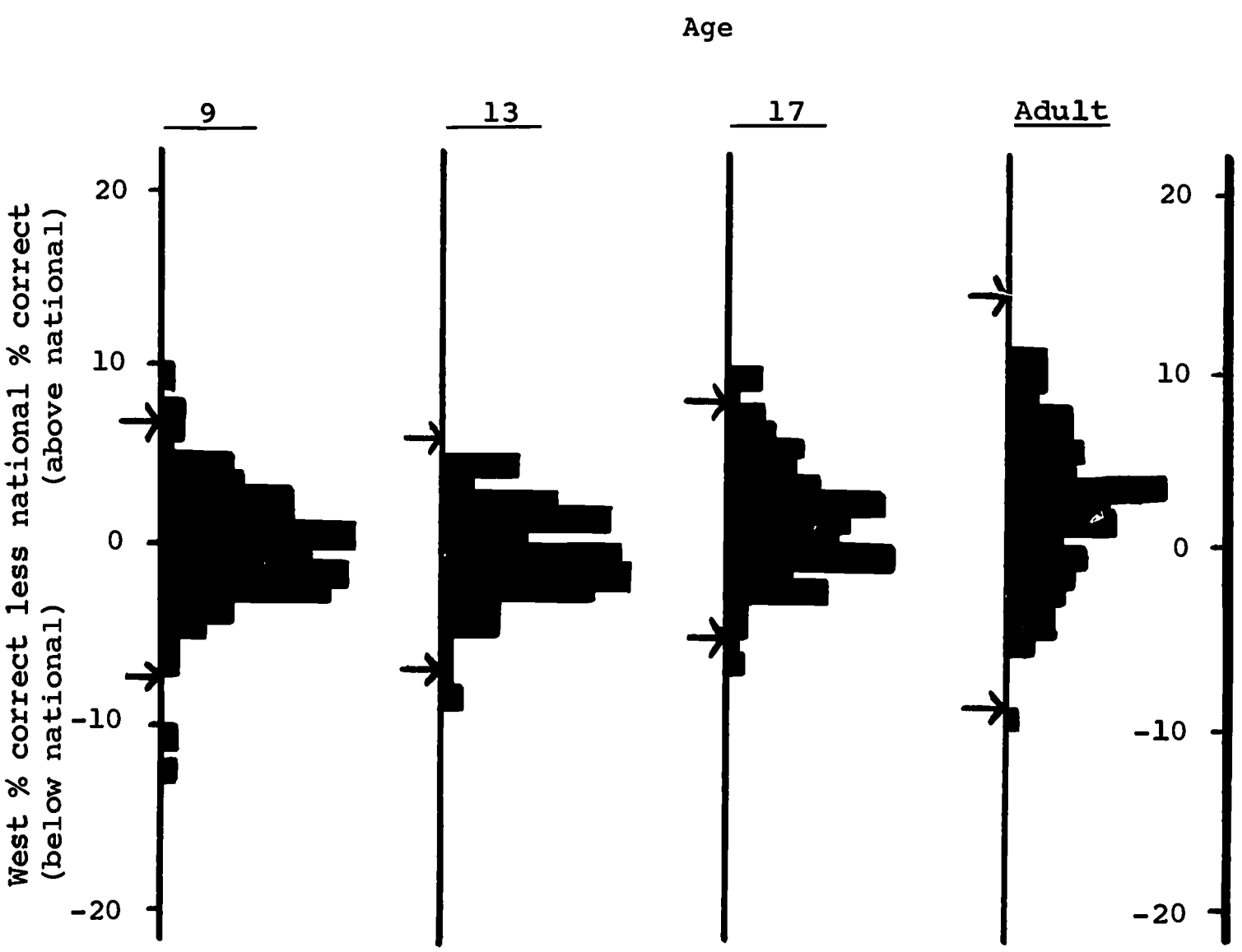


Exhibit 3-5

Median effects for all exercises, Objective 1 exercises only, and Objective 2 exercises only

Group	Age	Medians for All Ex.	Obj. 1	Obj. 2	Comparison*
West	Adult	2.6	2.3	2.9	0.6 bigger
Northeast	17	2.4	2.1	3.4	1.3 bigger
Northeast	9	2.2	1.9	2.7	0.8 bigger
Northeast	13	2.0	1.5	3.2	1.7 bigger
Central	13	1.9	2.1	2.3	0.2 bigger
West	17	1.7	1.1	2.6	1.5 bigger
Central	9	1.6	1.3	2.7	1.4 bigger
Northeast	Adult	0.7	1.0	-1.1	2.1 across zero**
Central	Adult	0.6	0.1	2.1	2.0 bigger
Central	17	0.0	-0.3	0.2	0.5 across zero**
West	9	0.0	0.6	-1.3	1.9 across zero**
West	13	-0.6	-0.6	-0.6	no change**
Southeast	13	-4.8	-4.5	-7.7	3.2 bigger
Southeast	17	-4.8	-4.2	-7.3	3.1 bigger
Southeast	Adult	-5.1	-5.5	-4.5	1.0 smaller**
Southeast	9	-5.1	-5.1	-5.6	0.5 bigger

*Objective 2 compared to Objective 1
**Exceptions to the rule

an exception in that the median is more extreme for Objective 1 exercises than for Objective 2.

While Objective 2 deviations are generally about 1% greater than those of Objective 1, there are two combinations of region and age where the deviation is much more conspicuous.

For Southeast 13s and 17s, Objective 2 deviations are more than 3% greater. In light of this finding, the pattern observed in the atypical exercises across all ages for the Southeast appears to be a reflection primarily of the characteristics of atypical exercises at ages 13 and 17. The pattern consists of two parts:

1. The tendency for exercises classified under Objective 2 to exhibit atypical deficits only.

2. The tendency for Objective 1 exercises showing atypical advantages to differ systematically from Objective 1 exercises showing atypical deficits.

Altogether at ages 13 and 17 in the Southeast there are eight atypical exercises classified under Objective 2 and all show a Southeast deficit. In contrast, there are six Objective 1 exercises showing an atypical Southeast advantage and eight showing an atypical deficit. The six showing an advantage tend to ask for knowledge that might be obtained from general experience, for example, knowledge about automobiles or rainbows; those showing a deficit tend to deal with the sorts of things that can be learned best through formal instruction, for example, the size and motion of the planets.

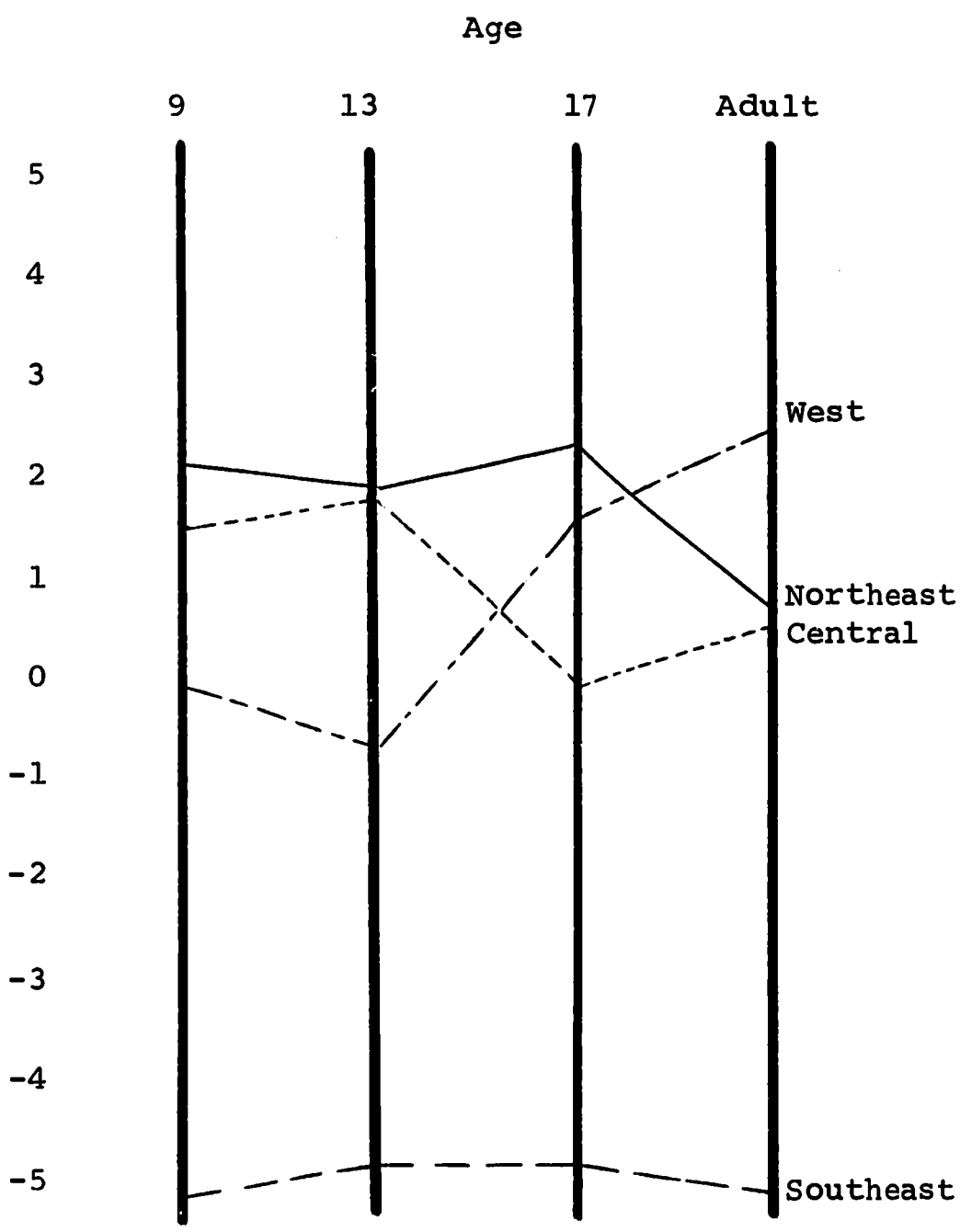
When exercises are sorted according to physical versus biological science, the regional effects are not altered enough to deserve mention here. (Details are presented in Chapter 6.)

Interrelationships

The relationships among the median effects for the four regions at each of the four ages are pictured in Exhibit 3-6. At all four ages, there is a decided contrast between the lower performance of the Southeast and the average or above average performance of the other three regions. The Northeast and Central regions perform a little higher than the country as a whole at ages 9 and 13. At age 17 the Northeast and the West perform a little better. Only the West is higher at the adult level.

Exhibit 3-6

Median effects for the four regions at four ages



The marked contrast between Southeast performance and performance of the other three regions leads to an interesting question. Could the Southeast's lower performance on science exercises be attributed to a lack of formal instruction in science? On certain exercises that might be answered on the basis of out-of-school experience, the Southeast performs as well as or better than the rest of the country. But on exercises requiring scientific skills or knowledge of the abstractions and generalizations taught in formal courses, Southeast performance, particularly that of the 13s and 17s, is substantially lower.

Patterns among the other three regions, while based on smaller differences, also bring questions to mind. Why, for example, is the Northeast effect for adults lower than for 9s, 13s, or 17s? Could the difference be the result of migration of young adults into or out of the Northeast? Why is the performance of adults in the West superior to any other region and to the country as a whole? Could West adult superiority also reflect primarily a movement of people rather than factors indigenous to the region?

At this stage of the assessment project, it is not possible to say what accounts for the patterns across regions. One can only look at the first year's data and raise questions. These questions, however, can suggest additional kinds of data that should be collected in later phases of the project. As such data are gathered and related to what is already known, the picture may become clearer.

4.

SIZE-OF-COMMUNITY EFFECTS

One aim of National Assessment has been to trace educational progress in different types of communities. Do children from schools in the big cities of the nation perform better or worse than those from small towns or rural areas? What can be said about progress on science content at various ages in the inner cities and in the suburbs?

This chapter is based on a size-of-community classification of four groups:

Big Cities: Cities with populations over 200,000.

Urban Fringe: Areas surrounding Big Cities.

Medium-Size Cities: Cities with populations between 20,000 and 200,000.

Smaller Places: Towns with populations under 20,000 and rural places.

Conveniently, there are about the same number of people in each group. No distinction is made within Urban Fringe areas between affluent residential suburbs and heavily industrialized fringe zones, nor is there separate examination within the Big Cities of the most economically disadvantaged "inner city" areas. A more elaborate classification procedure would be necessary to realize these distinctions. Results for some of these classifications will be presented in a later report.

The performances of each of the four size-of-community (SOC) groups are considered in turn. The standard measure of relative performance on each exercise is, as in Chapter 3, the difference between the percentage of correct answers within a given group and the national percentage of correct answers. By summarizing over all the exercises (or certain subsets of exercises), we obtain a picture of the general performance level of each SOC group.

Big Cities

The distributions of Big City effects for all exercises at all age levels are shown in Exhibit 4-1. All four of the distributions have their medians below zero, by 4.8%, 4.7%, 2.6%, and 2.4% at ages 9, 13, 17, and young adult (26-35). It is clear that this Big City deficit of a few percentage points is statistically reliable: at age 9, there is a deficit on 134 of 145 exercises (92%); at age 13, on 112 of 122 exercises (92%); at age 17, on 95 of 124 (77%); for adults, on 83 of 119 (70%). The deficit appears somewhat less at the two upper age levels. Application of an appropriate statistical test indicates that this appearance is reliable, that there is indeed a reduced deficit in Big City performance from age 9 and 13 to age 17 and adult. This reduced deficit appears even if we look only at comparisons involving exercises administered both at 9 or 13 and at 17 or adult.

Urban Fringe

The distributions of Urban Fringe effects for all exercises are shown in Exhibit 4-2. All four of the distributions have their medians above zero, by 3.0%, 3.4%, 2.4%, and 3.2% at the respective age levels.

An Urban Fringe advantage appears for most exercises, about equally strongly at each age: at age 9, on 126 of 145 exercises (87%); at age 13, on 104 of 122 (85%); at age 17, on 97 of 124 (78%); for adults, on 99 of 119 (83%).

Medium-Size Cities

The distributions of Medium-Size City effects are shown in Exhibit 4-3. All four of the distributions have their medians barely above zero, by 0.8%, 1.1%, 0.8%, and 0.4%. This slight but consistent tendency for Medium-Size City performance to be above the national average is mirrored also in the counts of individual exercises: 96 of 145 at age 9 (66%); 82 of 122 at age 13 (67%); 83 of 124 at age 17 (67%); 66 of 119 for adults (55%). The modest dip in percentage at the adult level could come from the wider scatter of exercise effects due to the smaller adult sample sizes.

Smaller Places

The distributions of effects for Smaller Places appear in Exhibit 4-4. The four distributions all have medians below

Exhibit 4-1

Distributions of Big City effects
for all science exercises at four age levels

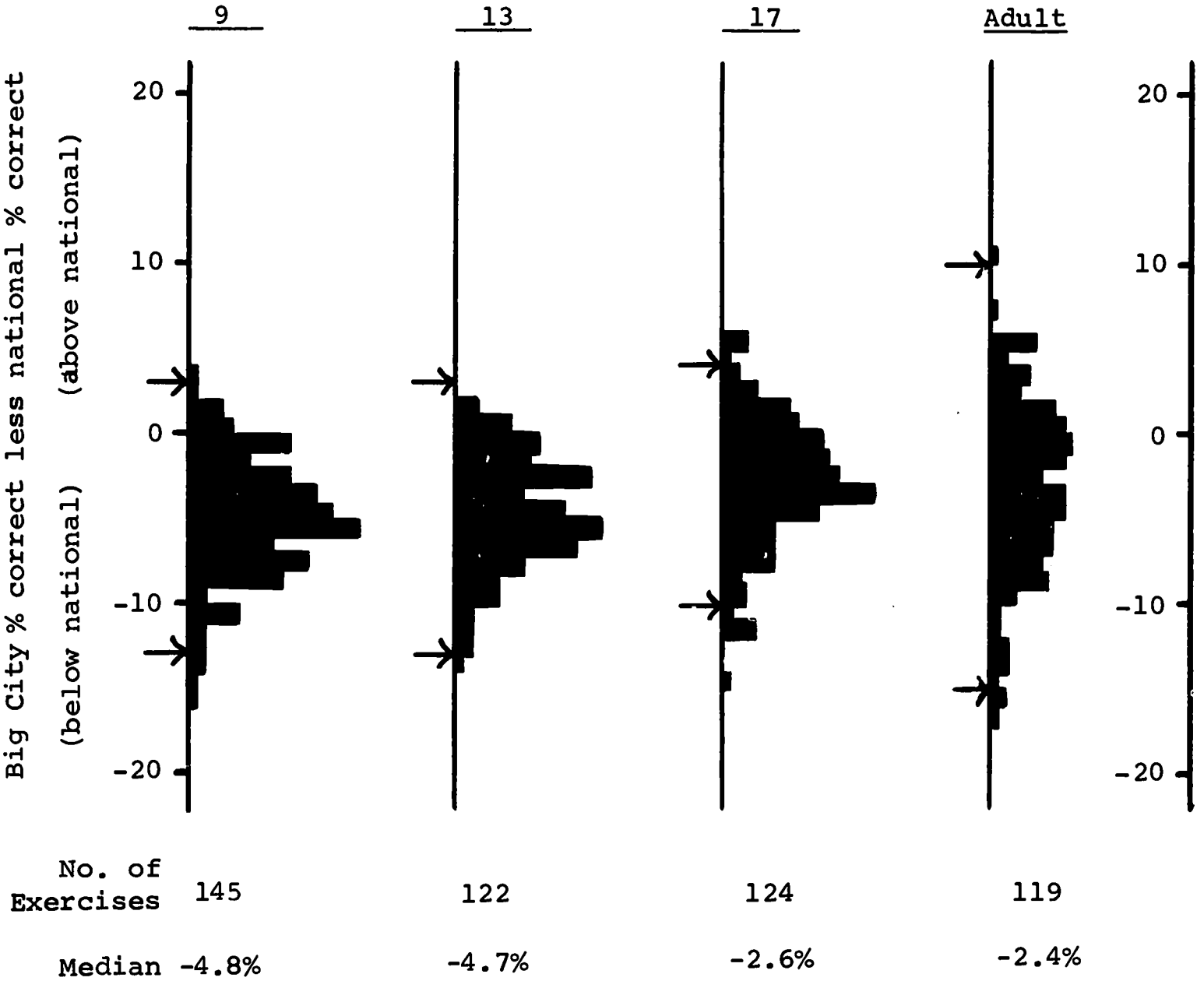


Exhibit 4-2

Distributions of Urban Fringe effects
for all science exercises at four age levels

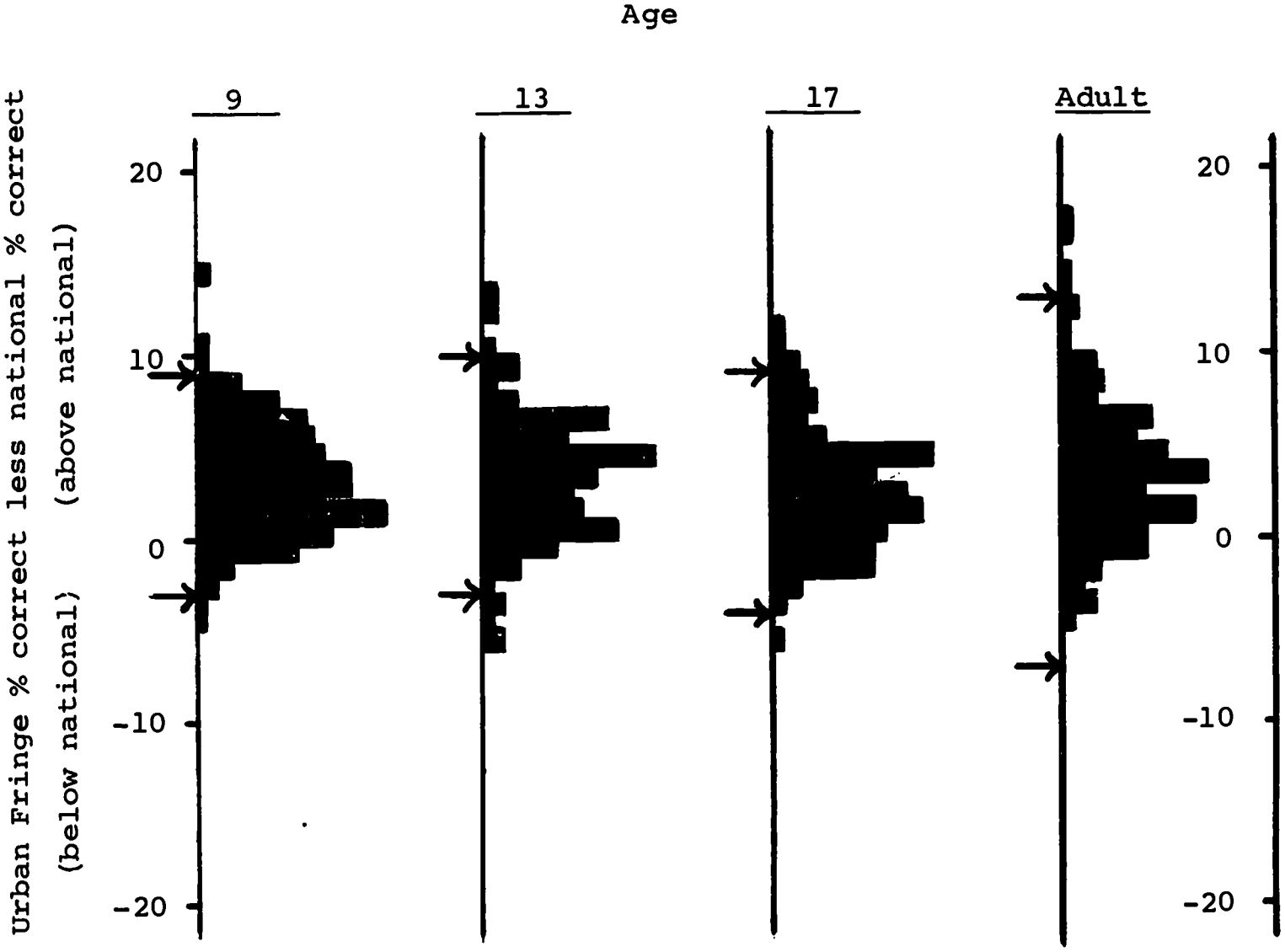
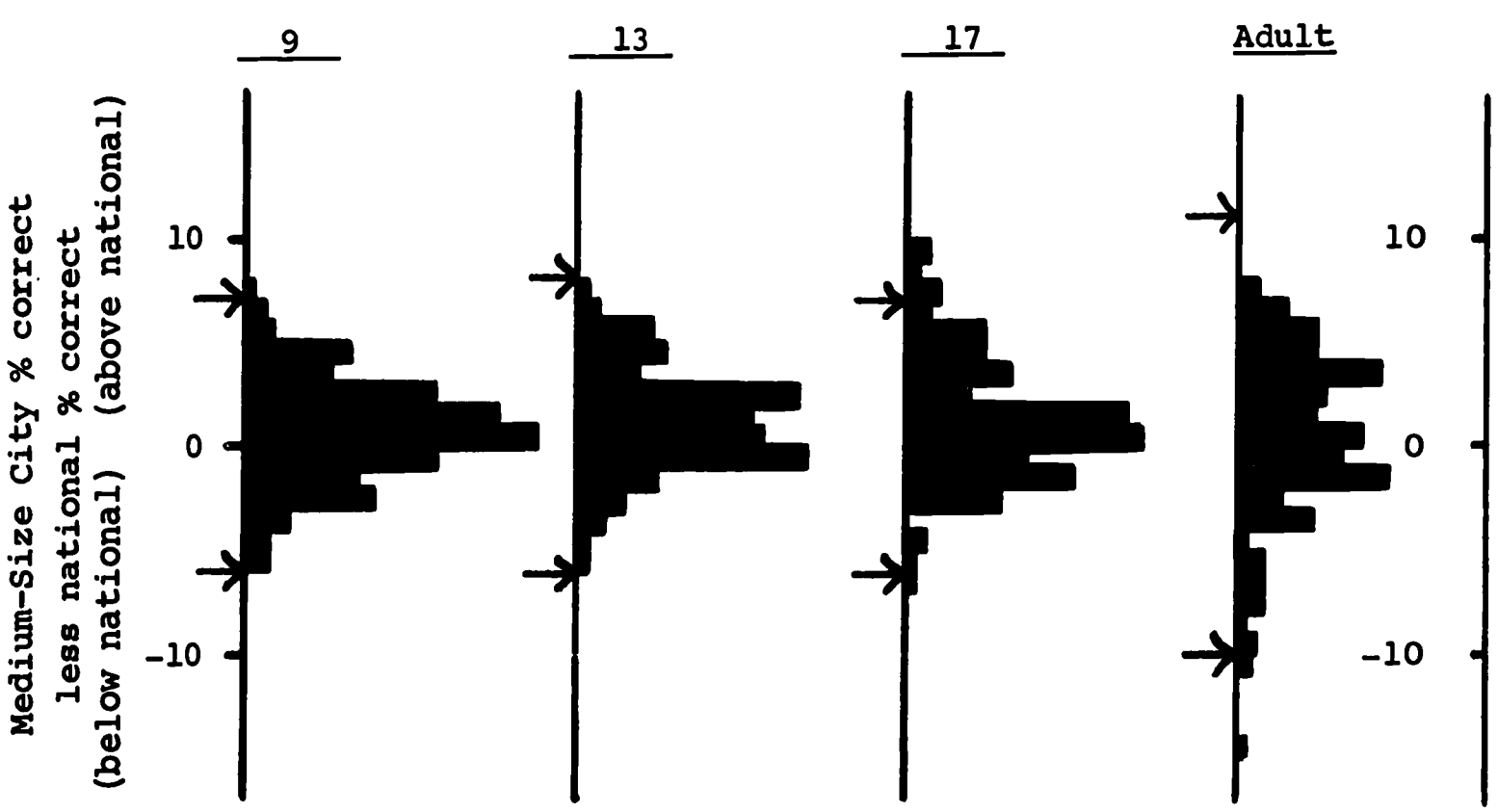


Exhibit 4-3

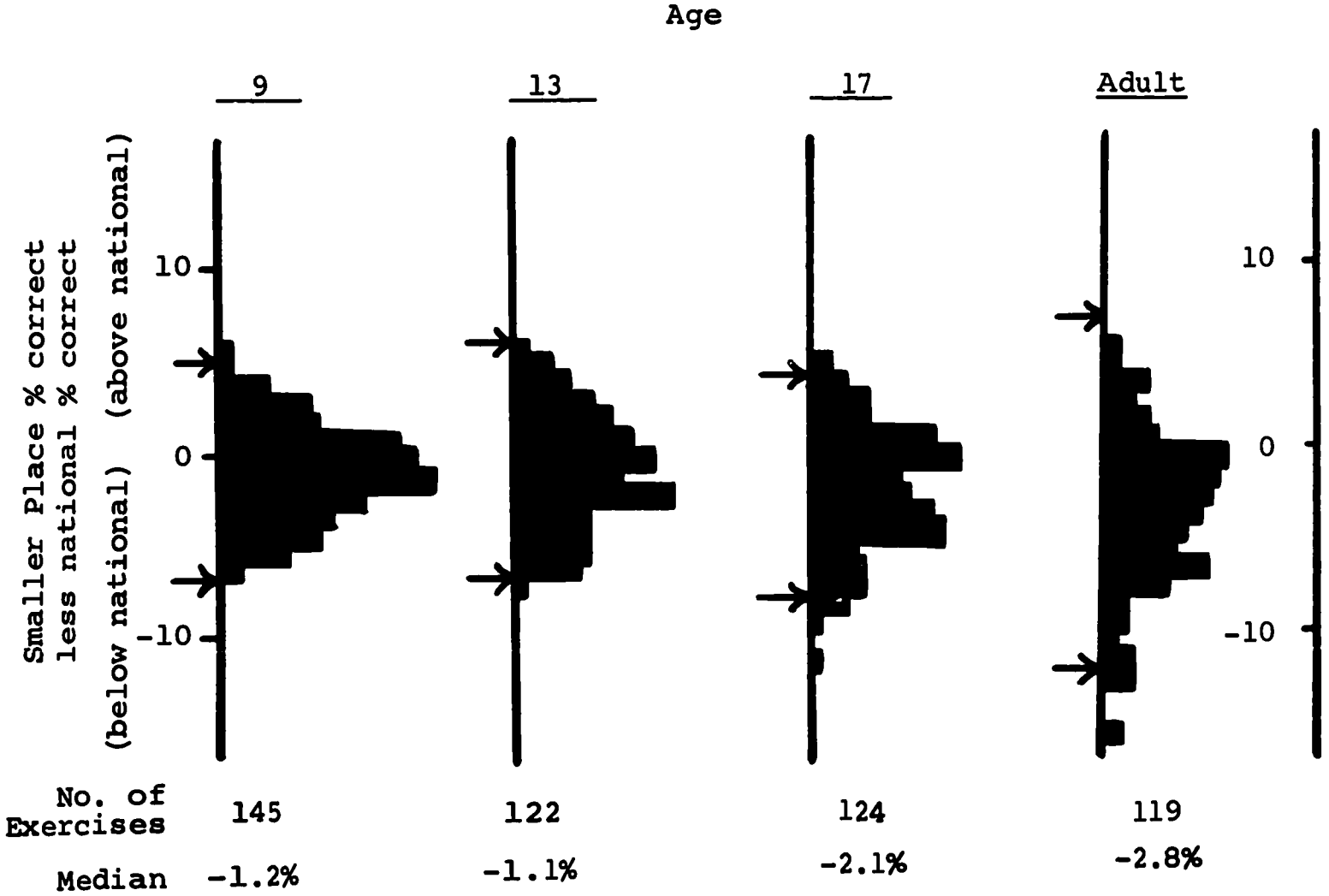
Distributions of Medium-Size City effects for all science exercises at four age levels



	9	13	17	Adult
No. of Exercises	145	122	124	119
Median	0.8%	1.1%	0.8%	0.4%

Exhibit 4-4

Distributions of Smaller Place effects
for all science exercises at four age levels



zero, by 1.2%, 1.1%, 2.1%, and 2.8% respectively. The proportions of exercises displaying a deficit are: 97 of 145 at age 9 (67%); 78 of 122 at age 13 (64%); 90 of 124 at age 17 (73%); 98 of 119 for adults (82%). The apparent worsening of Smaller Places' performance at the two upper levels, for adults especially, is of borderline statistical reliability. If this trend, though slight in terms of shifts in median performance, is taken to be a real effect, then one should note that it is the opposite of the Big City age trend. While Big Cities' performance improves by about 2% at ages 17 and adult over ages 9 and 13, Smaller Places' performance perhaps gets worse, by 1% or 2%.

Other Results

Detailed discussion of size-of-community effects for different individual exercises and groups of exercises is deferred to Chapter 7. Examination of exercises producing atypical effects for each SOC group does not yield clear findings, although a few speculations are also given in Chapter 7.

The sole result worthy of report in the present overview concerns the differences for exercises designed for science Objectives 1 and 2. For size-of-community groups, as for regional groups, it appears that the group effects are sharper for Objective 2 exercises then for Objective 1 exercises. In particular, this is true for the general Big City deficit and the general Urban Fringe advantage.

Exhibit 4-5 displays the generally sharper effects for Objective 2 for all sixteen SOC-by-age combinations, arranged in order of strength of the amount of sharpening. We note that this phenomenon is strongest for the adult age group, weaker for 13- and 17-year-olds, and non-existent for 9-year-olds.

Exhibit 4-5

Size-of-community median effects for exercises under objectives 1 and 2

SOC Group	Age	Medians for Obj. 1	Medians for Obj. 2	Amount by which Obj. 2 effect is more extreme
(Arranged in order of differences in effect between Objectives)				
Medium City	Adult	0.3	2.3	2.0 more
Big City	Adult	-2.3	-4.2	1.9 more
Smaller Place	Adult	-2.6	-4.2	1.6 more
Urban Fringe	Adult	3.0	4.4	1.4 more
Big City	17	-2.4	-3.8	1.4 more
Urban Fringe	17	1.9	3.2	1.3 more
Smaller Place	13	-0.9	-2.2	1.3 more
Urban Fringe	13	3.3	4.0	0.7 more
Urban Fringe	9	3.1	3.6	0.5 more
Medium City	13	1.2	1.7	0.5 more
Smaller Place	9	-0.9	-1.3	0.4 more
Big City	13	-4.6	-4.8	0.2 more
Big City	9	-5.0	-5.0	equal
Smaller Place	17	-1.9	-1.9	equal
Medium City	17	1.0	0.9	0.1 less
Medium City	9	0.9	0.1	0.8 less

5.

MALE-FEMALE DIFFERENCES IN DETAIL

Chapter 2 presented the major findings from an analysis of male-female performance differences on the science exercises at the four age levels. In this chapter, we consider in somewhat greater detail the nature of atypical exercises at each age, and also we present results of an analysis of exercises in terms of the science objectives that they were designed to assess and of whether they deal with physical or biological science. The text of all released exercises may be found in NAEP Report Number 1.

Age 9

At age 9, the median difference in performance between boys and girls over all 145 science exercises is 0.5%. This is negligibly different from 0%. Also, as seen in Exhibit 2-1 on page 6, the boy-girl differences are approximately symmetric about zero. We recognize that such differences are subject to sampling error, and that nonzero differences may be the consequence of sampling fluctuations. Thus, even with no general tendency for boys to perform better or worse than girls, some observed differences would be positive and some would be negative, clustered more or less tightly around zero. The actual distribution for age 9 in Exhibit 2-1 closely resembles the distribution to be expected if there were no systematic sex differences in performance.

Nevertheless, one science exercise at age 9 is atypical, in the sense that the boy-girl difference in performance is more distinct from the median difference for all exercises than we expect, based solely upon sampling variability. This is released Exercise No. 120, on which 76% of the boys give the right answer, compared with 68% of the girls. The exercise requires knowledge that a moving block striking a stationary block from the left will cause the latter to move to the right.

Age 13

At age 13, the median difference between boys and girls, over all 122 science exercises, is 1.7%. For 90 of these exercises, 74% of the total number, boys perform better than girls.

From Exhibit 2-1, it may be seen that performance of boys exceeds that of girls by at least 10%, the upper cutting point for male-female differences, for three exercises. Of these three exercises, one has been released (No. 214) and two remain unreleased

so that they may be administered again to 13-year-olds when science is reassessed. Exercise No. 214 asks where a two-pound weight must be hung on the left side of a (pictured) beam to make the beam balance, when a four-pound weight has been hung on the right side of the beam. Among boys, 61% give the correct response, while 48% of the girls answer correctly.

Both unreleased exercises for which the observed sex difference is at least 10% also are apparatus exercises; respondents are to find the correct answers by performing experiments in elementary physics. At age 13, then, exercises on which boys most clearly perform better than girls are exercises which pertain to simple experiments in physics.

Another four exercises at age 13, all unreleased, are atypical, showing about 6% (the lower cutting point for differences) higher performance by girls than boys. Analysis of the content of these four exercises provides no obvious clue as to why they are distinguished from the typical science exercise by the higher performance of girls. Perhaps these exercises only appear atypical due to unusually large sampling error.

Age 17

For 17-year-olds, the distribution of sex differences over the 124 science exercises is similar to that for 13-year-olds (Exhibit 2-1). The median difference is higher at age 17, 3.0%, and for a greater proportion of exercises (78%) boys perform better than girls.

For nine exercises the difference between percent success for boys and girls is at least 11%. Two of the exercises that show a male-female difference of at least 11% were released and seven remain unreleased for readministration. The released exercises are: No. 320, which asks how long it will take for a boat travelling at 5 m.p.h. down a river which flows at 5 m.p.h. to reach a point 10 miles downstream (males, 61% correct; females, 47% correct); and No. 341, an apparatus item requiring placing a weight on a beam so as to balance the beam (males, 82% correct; females, 68% correct).

All seven unreleased exercises that display male-female differences of at least 11% at age 17 involve tasks similar to those of the released exercises in that the correct answer is more likely to be known by a person with knowledge of physics. Four of them require the completion of a simple physics experiment. As at age 13, then, those exercises on which 17-year-old males outperform females are physical science exercises.

At age 17, one exercise atypically displays a sizable difference in favor of females. For this unreleased exercise, which taps knowledge of the reproductive system in the human female, 39% of the 17-year-old males and 47% of the females give the correct answer.

Adults

As noted in Chapter 2, many more exercises at the adult level show atypical sex differences than do exercises at the younger ages. The median difference in percent success for males versus females is 9.7%. For 82% of the 119 science exercises, male performance exceeded performance of females. However, several science exercises at the adult level are associated with a much higher level of success for women than for men.

The total number of adults to whom a given exercise was administered is smaller than the comparable numbers for 9-, 13-, or 17-year-olds. Typically, an exercise was administered to more than 2,000 respondents at the younger ages, but only to about 850 adults. Consequently, at the adult level a larger observed male-female difference is required in order that we be confident that the observed difference represents other than a sampling departure from the overall median difference. At the adult level, we give special attention only to exercises for which the observed male-female difference is in favor of males by 21% or more, or in favor of females by at least 2%.

For 17 of the adult science exercises, at least 21% more males than females gave a correct answer. For another 17 exercises, performance of females was at least 2% better than performance of males.

Of the 17 exercises for which males show a decisive advantage, six were released and are listed by exercise number in Exhibit 5-1. Of the 17 exercises for which females performed at least 2% better than males, 10 were released, and also are listed in Exhibit 5-1.

As for exercises at ages 13 and 17, the adult exercises for which success of men is most decisively superior to success of women are those assessing knowledge of electronics and physics. Exercise No. 413, for which 33% more males than females get the right answer, requires knowledge that most of the chemical energy of gasoline burned in a car is converted to heat. Exercise No. 408, with a male-female difference of 32%, is the same as Exercise

Exhibit 5-1

Released exercises at the adult level with atypical sex differences

Exercise No.	% Correct Males	% Correct Females	% Difference
413	77	44	33
408	81	49	32
415	71	40	31
410	76	50	26
438	83	61	22
430	33	11	22
407	67	69	-2
412	58	61	-3
402	89	93	-4
404	77	81	-4
405	69	73	-4
406	67	72	-5
441	43	54	-11
416	49	62	-13
418	41	62	-21
420	31	56	-25

No. 323 at age 17, and asks the purpose of a fuse in an electrical circuit. Exercise No. 415, with a sex difference of 31%, is identical to Exercise No. 320, administered at age 17. One must determine the time it will take a motorboat travelling 5 m.p.h. on a river flowing 5 m.p.h. to reach a point 10 miles downstream. Exercise No. 410 (26% difference) is correctly answered by indicating that an electric current involves the movement of electrons in a copper wire. Exercise No. 438 (22%) is the same as Exercise No. 341 at age 17, an apparatus exercise that requires placing a weight on a balance beam so as to balance the beam. Exercise No. 430 requires knowledge that, if two light waves are travelling in a vacuum, the wave with the higher frequency will have the shorter wavelength (22% male-female difference).

The exercises that are atypical in favor of women are very different from these physical science exercises. Exercise No. 420 asks the function of the placenta in a pregnant human female (to carry nourishment to the baby); 56% of females give the right answer, compared with 31% of males. Exercise No. 416 requires knowledge that, on the average, an egg is released in human females 14 days after menstruation begins; the sex difference is 13% in favor of females.

On Exercise No. 406, 5% more women than men state that adrenaline acts as a stimulant to the heart. Women perform better than men by 4% on an exercise (No. 405) assessing knowledge of the effects of sterilization in human males, and on an exercise (No. 404) requiring knowledge that whooping cough cannot be inherited.

Women outperform men by 4% in displaying knowledge that the sex of a human baby is determined by chromosomes (Exercise No. 402), and by 3% in indicating that transplant surgery might be most successful if the donor is an identical twin (No. 412). More women than men (2% more) also recognized that in mammals, sperm is produced by the testes (No. 407).

Both of the remaining exercises (No. 441 and No. 418) on which women did better than men offer special problems of interpretation. For Exercise No. 441, an apparatus exercise administered to young adults, performance of women (54%) is almost 11% higher than that for men (43%). The apparatus consists of a pendulum -- a weight on the end of a string. Given a watch with sweep second hand, the task is to find how long it takes for the weight to swing back and forth 10 times. When a respondent interpreted

"back and forth" as a swing only to the left or to the right, something that was not uncommon, the answer was scored incorrect. When this same task was administered to 17-year-olds (Exercise No. 344), and to 13-year-olds (Exercise No. 237), boys performed better than girls, by 9% in each case. Misinterpretation of "back and forth" may have played a substantial part in this anomaly.

Exercise No. 418, on which the difference between correct response for women and men is 21%, also presents special problems of interpretation; groups that generally perform well on other science exercises tend to give a wrong answer to this one. The respondent is told that a 5-pound rock is dropped from a cliff 500 feet high. The longer the rock falls, the greater is its: acceleration, potential energy, speed, total energy, or volume? "Acceleration" and "potential energy" are both popular answers among groups of respondents who perform well on other physical science exercises. Both of these answers are wrong. The correct answer is "speed," the answer supplied by 62% of women and by 41% of men.

The content of the unreleased adult exercises that display atypical male-female differences resembles that for the released exercises. All 10 of the unreleased exercises on which men succeed at least 21% more often than women tap knowledge of physics. Of the seven unreleased exercises on which women succeed at least 2% more often than men, one asks a question concerning the fertilization of an egg in a human female, and another concerns the development of the human embryo; two require familiarity with human diseases, one refers explicitly to knowledge of recipes and clothing design, and the other two are more general science exercises, one from biology and one from astronomy.

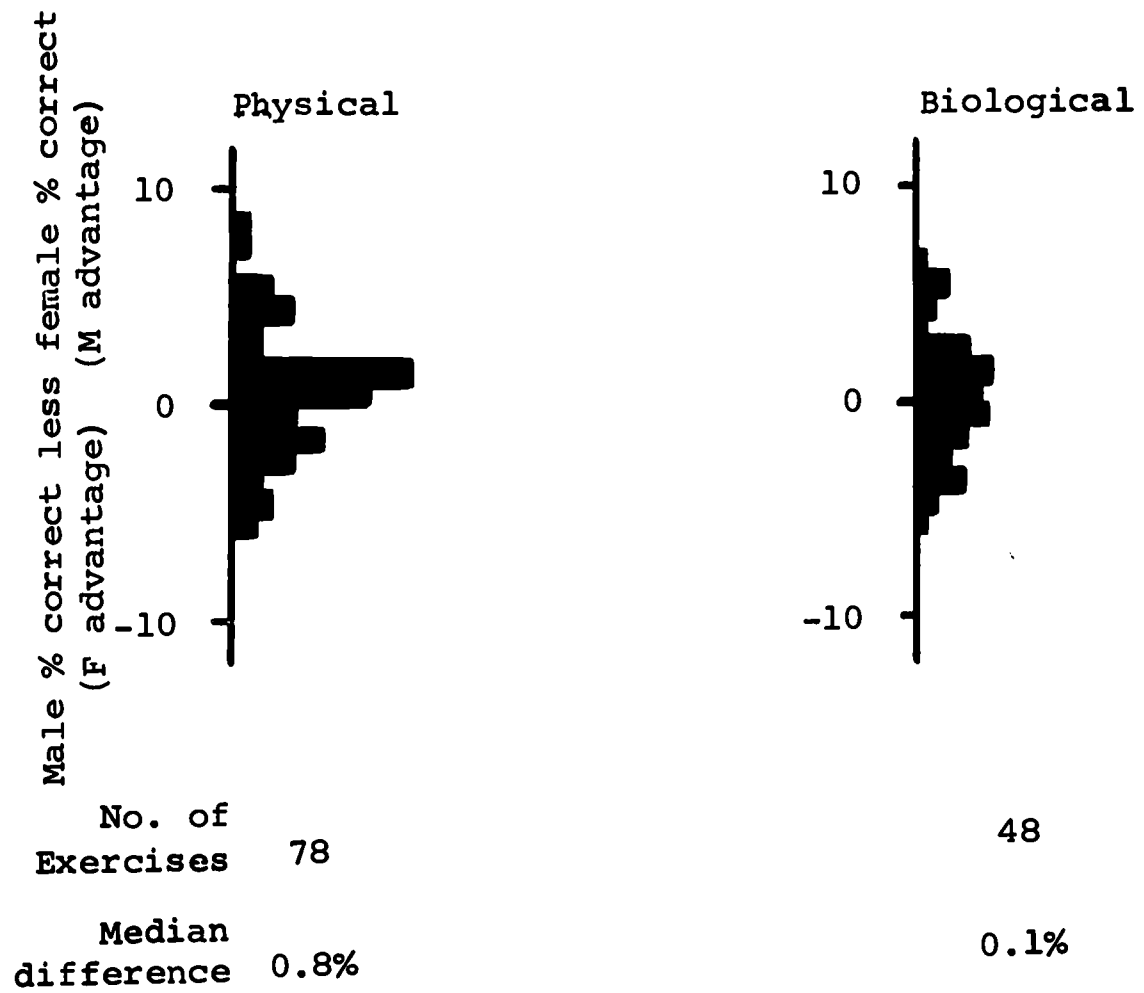
Physical Science versus Biological Science

At each age level, exercises have been classified on the basis of their content into classes of "physical science" or "biological science." (Some exercises at each age assess general science facts, principles, or attitudes; they could not be classified either as physical or biological science and are not considered further in this section.) Comparisons of the distributions of male-female performance differences at each of the four age levels appear in Exhibits 5-2 to 5-5.

Exhibit 5-2 shows that at age 9 sex differences are distributed nearly symmetrically about zero for both physical science exer-

Exhibit 5-2

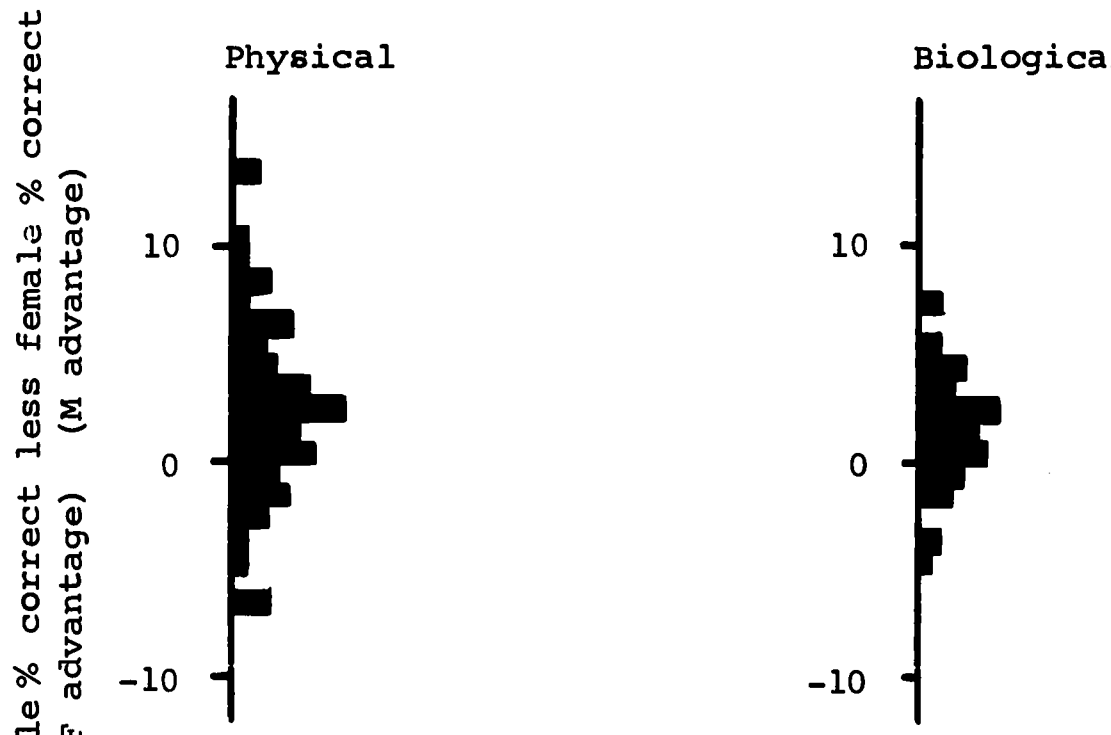
Male-female differences for
physical and biological science exercises--age 9



	Physical	Biological
No. of Exercises	78	48
Median difference	0.8%	0.1%

Exhibit 5-3

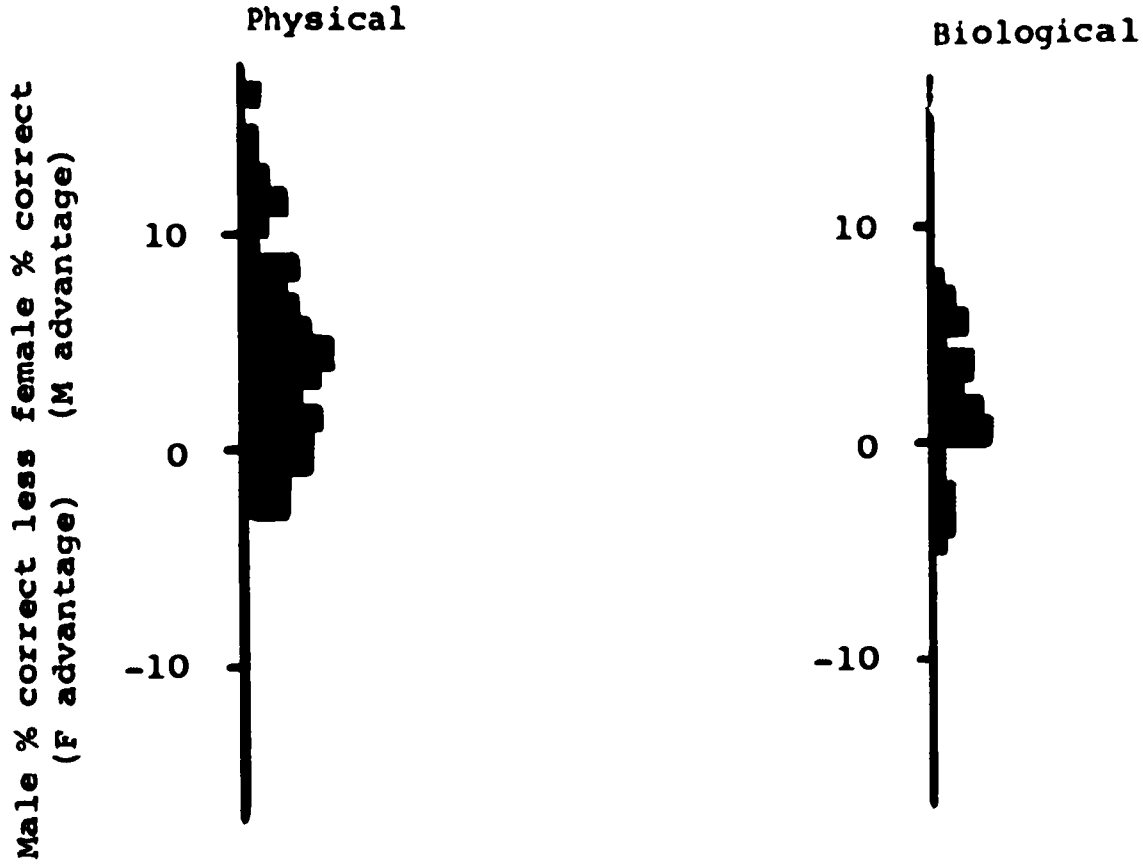
Male-female differences for
physical and biological science exercises--age 13



	Physical	Biological
No. of Exercises	67	39
Median difference	2.4%	1.5%

Exhibit 5-4

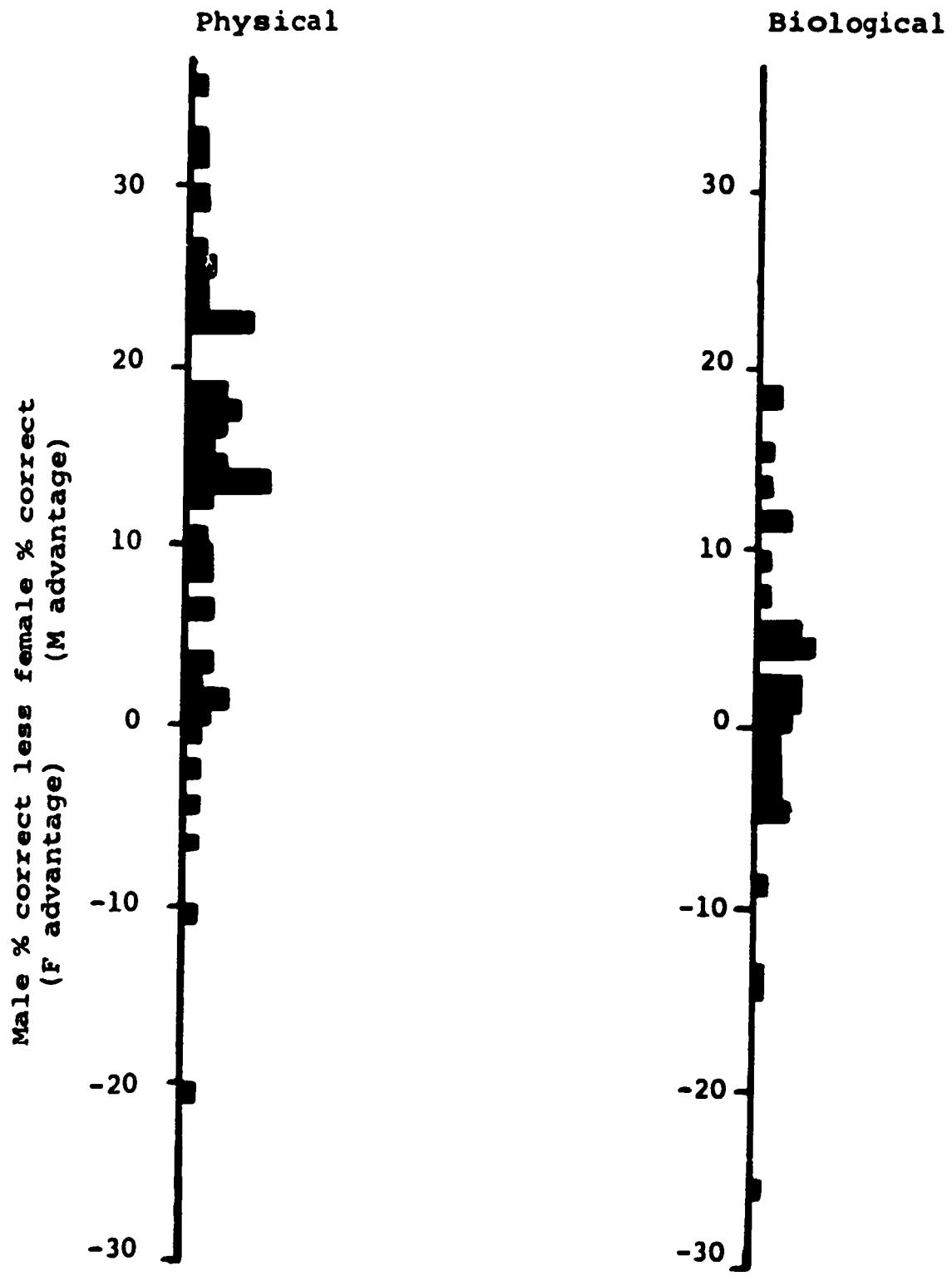
Male-female differences for
physical and biological science exercises--age 17



	Physical	Biological
No. of Exercises	78	33
Median difference	4.2%	1.6%

Exhibit 5-5

Male-female differences for
physical and biological science exercises--young adults



	Physical	Biological
No. of Exercises	63	44
Median difference	14.2%	2.3%

cises and biological science exercises. This finding is consistent with the general result that 9-year-old boys and girls perform about equally well on the NAEP science exercises.

Exhibit 5-3 shows the comparable distributions for age 13. Sex differences for physical and biological science items display similar distributions. However, as noted earlier, the only exercises on which boys perform at least 9% better than girls are physical science exercises.

Results for age 17 are shown in Exhibit 5-4. At this age, it is clear that all exercises on which boys perform much better than girls are physical science exercises. The results provide no evidence for any systematic sex difference on biological science exercises.

For adults, the effects noted for 17-year-olds are accentuated (Exhibit 5-5). The vast majority of exercises for which men perform much better than women are exercises assessing knowledge of physical science.

The pattern over age of medians for physical and biological science exercises was shown in Exhibit 2-2, Chapter 2, which clearly shows that the advantage of males over females on physical science exercises increases with age. This finding is consistent with an expectation one might have based upon knowledge of different choice of science curriculum by boys and girls in high school. Boys and girls alike tend to be exposed to physical and biological science topics in elementary grades. In high school, science courses--physics, chemistry, biology, etc.--more often are elective courses. Boys more frequently than girls choose to elect courses in physics and chemistry. The differential exposure of boys to a physical science curriculum might explain the advantage of boys and young men over girls and young women on the typical exercise that assesses physical science.

Science Objectives, and Other Ways to Classify Exercises

The finding of differential performance by males and females for physical science versus biological science exercises suggests that other ways to classify science exercises also may be sensitive to sex differences. One obvious way is by the science objective for which each exercise was designed.

Most of the science exercises written for each age level were intended to assess Objective 1. Fewer exercises were administered for Objective 2. (These include the apparatus exercises at ages 13, 17, and adult.) Still fewer exercises assessed Objectives 3 and 4. Exhibit 5-6 shows the number of exercises at each age level prepared for each objective. Exhibit 5-7 shows the median male-female differences for each set of exercises at the four age levels.

Such small numbers of exercises for Objectives 3 and 4 were administered as to make an evaluation of sex differences for those groups of exercises unrewarding. Larger numbers of exercises for Objectives 1 and 2 were administered at every age.

At all four ages, the median male-female difference is positive (greater than zero), both for exercises assessing Objective 1 and for exercises assessing Objective 2. However, at each age, the median male-female difference is greater for Objective 2 (Possess the abilities and skills needed to engage in the processes of science) than for Objective 1 (Know the fundamental facts and principles of science), although the differences between objectives are small except at age 17.

Exhibit 5-6

Number of exercises for each objective at four age levels

	Age			
Objective	9	13	17	Adult
1	96	75	89	85
2	29	31	24	24
3	11	8	6	5
4	9	8	5	5
All exercises	145	122	124	119

Exhibit 5-7

Median male-female differences in percentage correct by objective at four age levels

	Age			
Objective	9	13	17	Adult
1	.3	2.0	2.6	9.4
2	1.0	2.4	5.2	9.5
3	1.6	-.5	.9	11.7
4	-1.2	.5	.2	5.5
All exercises	.5	1.7	3.0	9.7

6.

REGIONAL EFFECTS IN DETAIL

The focus of Chapter 3 was on summary and interpretation of the regional effects. In this chapter we provide additional data to support the generalizations given in Chapter 3, both those concerning significant regional effects and those concerning lack of significant effects. Where appropriate, reference is made to the exhibits of Chapter 3. The text of all released exercises is published in NAEP Report Number 1.

Northeast

The distributions of regional effects for the Northeast are presented in Exhibit 3-1. At each age level, certain exercises fall so far from the median as to warrant special attention. Some of these have been released and can be examined by any reader of this report. They are listed by age level and by exercise number in Exhibit 6-1. The unreleased exercises exhibiting atypical effects, which are reserved for administration again, will be described here only in a general way.

Exhibit 6-1

Released exercises showing atypical effects for the Northeast

Age	Exercise Number	% Correct		% Difference
		Northeast	National	
9	128	66	55	11
	153	48	38	10
	126	68	59	9
	135	34	38	-4
13	222	31	38	-7
17	327	45	34	11
Adult	420	58	45	13
	441	33	48	-15

Age 9. At age 9 the median effect over all 145 exercises is 2.2%. The effect is positive for 118 exercises (81%) and negative for 27 (19%).

For six exercises the Northeast advantage is at least 8%. Of these exercises, three were released (see Exhibit 6-1) and three remain unreleased. Exercise No. 128 calls for knowledge that the sun is a star rather than a planet, satellite, or solar system. The Northeast advantage is 11% (Northeast 66% correct, national 55%). Exercise No. 153 (Northeast advantage 10%) requires selection of the one thing that could not cause a pipe to become stopped up (the sink is full). Exercise No. 126 requires the respondent to know that most scientists think the center of the earth is very hot, rather than cold, dusty, or muddy. The Northeast advantage is 9%. There appears to be no particular pattern characterizing these exercises. Of the three unreleased exercises, one falls under Objective 1 and two under Objective 2. Two of the unreleased exercises are classified as physical science, one as biological science.

There is a Northeast deficit exceeding 4% for three exercises, one of which has been released. Exercise No. 135 (Northeast 34%, national 38%) requires the examinee to recognize that if a rock is submerged in water, the water will remain at the same level after the rock is broken into pieces. It is classified under Objective 1. The other two exercises have not been released. Both are classified under Objective 1; one assesses knowledge of physical science, the other of biological science.

Age 13. At age 13 the median of the Northeast effects stands at 2%. For the 122 exercises, 90 (74%) of the effects are positive and 32 (26%) are negative. For only two of the exercises is the Northeast advantage as great as 9%, the value marking a positive atypical effect. Neither has been released. Both are laboratory exercises in physical science.

Only one exercise (No. 222) exhibits a Northeast deficit in excess of 5%. It asks the respondent to identify the explanation for why giraffes have long necks that is consistent with the theory of natural selection.

Age 17. The overall Northeast effect at age 17 is represented by the median of 2.4%. The difference is positive for 93 (75%) of the 124 exercises and negative for 31 (25%) of them. Of the three exercises with an advantage for the Northeast as great as 10%, one (No. 327) was released. It asks how sound is carried through the air. Of the two unreleased exercises, one

calls for specific information related to physical science, and the other is a laboratory exercise. For the latter, the estimated error is so large as to suggest that the atypical effect is quite likely due to sampling variability.

No exercise exhibits a Northeast deficit large enough to be considered atypical.

Adults. The median of the distribution of differences for adults is 0.7%, a difference so small that one feels safe in concluding that the adults in the Northeast perform about the same as the national sample when all exercises are considered. Of the 119 exercises, 62 are easier for the Northeast and 57 are easier for the national sample.

When the small positive difference and the relatively smaller size of the sample at the adult level are taken into account, one concludes that an advantage of 11% or a deficit of 9% would be required before the discrepancy could be considered atypical. Only one exercise exhibits an atypical Northeast advantage and two exercises an atypical Northeast deficit. Exercise No. 420 (Northeast advantage 13%) calls for knowledge of the function of the placenta. Exercise No. 441 (Northeast deficit 15%) is an apparatus exercise with an estimated sampling error large enough to account for the discrepancy. The unreleased exercise exhibiting an atypical deficit asks for physics information.

All Ages. Altogether there are 18 exercises exhibiting atypical effects for the Northeast, nine at age 9, three at age 13, three at age 17, and three for adults. Twelve show an advantage for the Northeast and six a deficit. A majority (11) assess knowledge (Objective 1). There is a Northeast advantage for six, a deficit for five. The other seven fall under Objective 2. Of these, two are laboratory exercises with estimated errors large enough to account for the atypical effect. One shows a Northeast advantage, the other a Northeast deficit. The other five all exhibit a Northeast advantage. Thus, there appears to be a tendency for the Northeast to show an atypical advantage on a higher proportion of Objective 2 than of Objective 1 exercises.

Science Objectives. The finding of a Northeast atypical advantage on Objective 2 exercises suggests that it might be appropriate to look at all the exercises in terms of their classification by objective. (See Chapter 1 for the list of objectives.)

The number of exercises classified under each objective varies; most fall under Objective 1, somewhat fewer under Objective 2, and only a small number under Objectives 3 and 4. Exhibit 6-2 presents the Northeast median effects by objective and identifies the number of exercises in each classification.

Exhibit 6-2

Median Northeast regional effects for objectives 1 and 2 and for all exercises (Numbers of exercises in parentheses)

Objective	Age			
	9	13	17	Adult
1	1.9 (96)	1.5 (75)	2.1 (89)	1.0 (85)
2	2.7 (29)	3.2 (31)	3.4 (24)	-1.1 (24)
All exercises	2.2 (145)	2.0 (122)	2.4 (124)	0.7 (119)

At ages 9, 13, and 17 the median effect is greater for Objective 2 exercises than for Objective 1 exercises. At age 9 the difference is 0.8%, at age 13, 1.7%, and at age 17, 1.3%. In no case is the difference larger than might be expected simply as a result of sampling fluctuations.

At the adult level, the difference is reversed. The adult median for Objective 1 exercises is 1.0%. For Objective 2 exercises it is -1.1%. The difference could well come from sampling variability.

Physical Science versus Biological Science. Exercises have been classified on the basis of their content as well as on the basis of the objective being assessed. Most exercises were classified as either physical science or biological science; a few were not so classified. A summary of the data for the Northeast sample relative to performance on physical science and biological science exercises is presented in Exhibit 6-3. No systematic differences are discernible.

Exhibit 6-3

Median Northeast regional effects for physical and biological science exercises (Numbers of exercises in parentheses)

	Age			
	9	13	17	Adult
Physical science	2.5 (78)	2.2 (67)	2.5 (78)	-0.2 (63)
Biological science	1.9 (48)	2.1 (39)	1.8 (33)	1.1 (44)

Southeast

The regional effects for the Southeast are presented in Exhibit 3-2 of Chapter 3. Here we examine the data in more detail. The released exercises exhibiting atypical effects for the Southeast are listed in Exhibit 6-4. There are 14 of them. An additional 28 unreleased exercises exhibited atypical Southeast effects.

Exhibit 6-4

Released exercises showing atypical effects for the Southeast

Age	Exercise Number	% Correct		% Difference
		Southeast	National	
9	138	38	35	3
	140	24	14	10
	123	44	67	-23
	130	39	53	-14
	156	66	80	-14
13	217	55	48	7
	227	30	26	4
	247	11	8	3
	233	57	71	-14
	234	49	63	-14
	236	46	61	-15
17	309	51	66	-15
	320	37	52	-15
	353	59	74	-15

Age 9. At age 9 the median effect for the Southeast is a deficit of 5.1%. On 13 of the 145 exercises the Southeast does better than the country as a whole; on 132 it performs less well.

Of the six exercises on which the Southeast performed at least 3% better than the country as a whole, two were released. Exercise No. 138 (Southeast advantage 3%) asks about the relationship of a cold front to the weather behind it. Exercise No. 140 (Southeast advantage 10%) assesses knowledge of the fact that coal was formed from the remains of dead plants. Of the four unreleased exercises, three ask for factual information (Objective 1), the other for an understanding of the investigative nature of science (Objective 3).

On six exercises the Southeast exhibits a deficit of 13% or more. One (Exercise No. 123) asks what scientists learn from studying fossils; one (Exercise No. 130) requires the knowledge that the most comfortable inside temperature is thought to be about 70 degrees; one (Exercise No. 156) probes awareness that natural phenomena, even though puzzling, must have a scientific explanation. All three of the unreleased exercises exhibiting a southeast deficit as large as 13% deal with physical science content. Two exercises ask factual questions; the third requires the reading of a simple bar graph.

Age 13. The median Southeast deficit at age 13 is 4.8%. There is a deficit for 108 of the 122 exercises (89%), and only 14 (11%) exhibit an advantage for the Southeast.

The advantage is at least 3% for four exercises, three of which are released. Exercise No. 217 requires an understanding that when gasoline is burned in an automobile engine, most of the energy is released as heat (Southeast advantage 7%). Exercise No. 227 assesses knowledge that the seat of intelligence in mammals is the cerebrum (Southeast advantage 4%). Exercise No. 247 is directed at an attitude about science. Compared to the national sample, 3% more of the Southeast sample reported they often asked scientific questions. However, in neither case is the percentage large (Southeast 11% correct, national 8%). The unreleased exercise showing a Southeast advantage also assesses an attitude about science.

At age 13 there are 11 exercises showing a Southeast deficit of at least 12%, seven of which are classified under Objective 2. All three of the released exercises involve skills, two the reading of graphs and one the manipulation of laboratory equip-

ment. Exercise No. 233 (Southeast 57% correct, national 71%) requires the selection of the statement which correctly reports what is represented on a graph. Exercise No. 234 (Southeast deficit 14%) asks the student to determine where a weight of two grams must be placed to balance a bar with a four-gram weight on the other side of the pivot. Exercise No. 236 (Southeast deficit 15%) asks for an inference about the feeding schedule of a dog from an examination of a graph of weight over time. Of the unreleased exercises, four resemble the released: two call for interpretation of a graph or table, one for manipulating a balance beam, and one for conducting an experiment and graphing the data. Of the four remaining, two ask for physical science information, one for biological science information, and one involves an attitude toward science.

The number of questions showing atypical effects at age 13 is larger than that observed at other ages. When the estimates of sampling error for the individual exercises are examined, it appears that for five of the seven laboratory exercises, the estimated sampling error is large enough to account for the atypical effect. The two for which this is not the case are released Exercise Nos. 233 and 236.

Age 17. At age 17 the median Southeast effect is a deficit of 4.8%, exactly the same as at age 13. On only 18 (15%) of the 124 exercises is there an advantage for the Southeast.

Of five exercises showing an advantage as great as 3%, none of which have been released, four seek factual knowledge in the physical sciences (Objective 1) and one seeks knowledge of the investigative nature of science (Objective 3). Seven exercises exhibit a Southeast deficit as great as 13%, three of which have been released. One (Exercise No. 309) requires the ability to relate Darwin to the theory of natural selection; one (Exercise No. 320) asks for solution of a problem involving determining the time to travel downstream a distance of 10 miles, given the speed of the boat and the speed of the current. The third (No. 353) presents the statement, "U.S. scientists are ahead of scientists in every other country in every field of research." In the total sample 74% responded, "I don't believe this." In the Southeast only 59% gave that response. Of the unreleased exercises with Southeast deficits in excess of 13%, three are biological science content and assess Objective 1; the other is a laboratory exercise requiring the respondent to make a physical measurement.

Adults. The median effect for adults in the Southeast is a deficit of 5.1%. For 15 of the 119 exercises (13%) the Southeast does better than the country as a whole and for 104 exercises (87%) the Southeast does less well. Three exercises show a Southeast deficit of 18% or more, none of which have been released. They all test science knowledge; one is related to human reproduction, one to the solar system, and one to the basic nature of living organisms.

All Ages. As reported in Chapter 3, when the 42 exercises exhibiting atypical Southeast regional effects are accumulated over ages, there do seem to be systematic differences between those showing an atypical advantage and those showing an atypical deficit. One difference is in the relative frequency of exercises testing Objective 2 skills, none of 15 exercises showing an advantage in contrast to nine of 27 exercises showing a deficit. Some, but certainly not all, of this contrast may be the result of the larger sampling errors for laboratory exercises. The other difference is in the nature of the exercises assessing Objective 1. Those exhibiting a Southeast advantage seem to deal with everyday phenomena -- coal from a neighboring mountain, transformers, automobiles, food, rainbows, and the weather. Those exhibiting a disadvantage tend to deal either with facts learned in textbooks--the size and motion of the planets, the scientific vocabulary of human reproduction, Darwin and natural selection, the significance of fossils--or with more than simple recall--the ability to recognize the example that fits a definition or to calculate a quantity given the basic relationships.

Science Objectives. The median Southeast effects for exercises, grouped by science objectives, are reported in Exhibit 6-5. The only systematic pattern that emerges is the larger deficit for Objective 2 exercises at ages 13 and 17. At age 13 the median disadvantage for the 75 Objective 1 exercises is 4.5% while that for the 31 Objective 2 exercises is 7.7%. At age 17, the corresponding figures are 4.2% and 7.3%. The differences at ages 9 and adult could easily be attributed to sampling fluctuations.

Exhibit 6-5

Median Southeast regional effects for Objectives 1 and 2 and for all exercises (Numbers of exercises in parentheses)

Objective	Age 9	13	17	Adult
1	-5.1 (96)	-4.5 (75)	-4.2 (89)	-5.5 (85)
2	-5.6 (29)	-7.7 (31)	-7.3 (24)	-4.5 (24)
All exercises	-5.1 (145)	-4.8 (122)	-4.8 (124)	-5.1 (119)

Physical Science versus Biological Science. Median Southeast regional effects and numbers of exercises classified according to content are reported in Exhibit 6-6. At ages 9, 17, and adult the medians show less of a deficit for biological science than for physical science; at age 13 the direction is reversed. None of the contrasts is statistically significant.

Exhibit 6-6

Median Southeast regional effects for physical and biological science exercises (Numbers of exercises in parentheses)

	Age 9	13	17	Adult
Physical science	-5.2 (78)	-4.8 (67)	-5.1 (78)	-5.3 (63)
Biological science	-4.7 (48)	-5.0 (39)	-4.6 (33)	-4.9 (44)

Central

The distributions of regional effects for the Central region are displayed in Exhibit 3-3 and discussed in Chapter 3. The medians at ages 9 and 13 are higher than for the national sample, those for ages 17 and adult about the same as for the national sample.

All Ages. Over all four ages, there are 12 exercises showing atypical effects, three of which have been released. At age 9, Exercise 123 (Central 76% correct, national 67%) asks what scientists can learn from studying fossils. Exercise 138 (Central 29% correct, national 35%) tests knowledge of the effect on weather of the passage of a cold front. The three unreleased exercises at age 9, one showing a positive effect, the other two a negative effect, do not seem to help in establishing a pattern.

Nor do the exercises at other ages. There are nc atypical exercises at age 13 and only two, both unreleased, at age 17. For adults, Exercise 405 (Central 81% correct, national 71%) asks about the effects of tying off sperm ducts.

When all atypical exercises, both reported and unreported at the four ages, are examined, one is left with the impression that most of the atypical effects are the result of sampling fluctuations. There appears to be no pattern characterizing these exercises. Furthermore, of the 12 exercises, seven were administered at more than one age, yet in no case did an exercise exhibit an atypical effect at more than one age level.

It may be noted, however, that four of the nine exercises on which the Central region performs markedly better than the country as a whole are classified under Objective 2 and that none of the three exercises exhibiting a deficit fall in this classification. To investigate the possibility that these findings mark a trend, we examine all the exercises after grouping them by objectives.

Classes of Exercises. The median effects for exercises classified under Objectives 1 and 2 and for all exercises are reported in Exhibit 6-7.

Exhibit 6-7

Median Central regional effects for objectives 1 and 2 and for all exercises (Numbers of exercises in parentheses)

Objective	Age			
	9	13	17	Adult
1	1.3 (96)	2.1 (75)	-0.3 (89)	0.1 (85)
2	2.7 (29)	2.3 (31)	0.2 (24)	2.1 (24)
All exercises	1.6 (145)	1.9 (122)	0.0 (124)	0.6 (119)

At each age the median effect shows a greater advantage for Objective 2 exercises than for Objective 1 exercises. The difference for adults is the largest of the four. Of 85 adult exercises classified under Objective 1, 44 show an advantage, and 41 a deficit. Of 24 classified under Objective 2, 21 show an advantage and only three a disadvantage. The median over all exercises for adults in the Central region is only slightly above the national: 0.6%. If

there is an advantage for adults in the Central region, it must be attributed to superior performance on Objective 2 exercises.

The classification of exercises according to science content (Exhibit 6-8) provides no evidence of any significant contrasts.

Exhibit 6-8

Median Central regional effects for physical and biological science exercises (Numbers of exercises in parentheses)

	Age			
	9	13	17	Adult
Physical science	1.6 (78)	2.3 (67)	-0.3 (78)	0.9 (63)
Biological science	1.6 (48)	1.8 (39)	1.1 (33)	-0.1 (44)

West

The distributions of West regional effects at the four age levels are presented in Exhibit 3-3 and discussed in Chapter 3.

All Ages. Over all ages there are 17 exercises showing atypical regional effects for the West, only two of which have been released. At age 17, Exercise No. 309 (West 75% correct, national 66%) requires relating Darwin to the theory of natural selection. (It was also administered to adults and at that age the West advantage was 5%)

The other exercise, No. 445 (West 1% correct, national 11%), is a laboratory exercise requiring the adult examinees to calculate the density of a wooden block after finding the mass and the volume. It did not exhibit an atypical effect when it was administered at ages 13 or 17.

The 17 atypical exercises are divided about equally (eight versus nine) between those above the median for the West and those below; the number (four) of exercises classified under Objective 2 is too small to show any trend.

Classes of Exercises. When exercises are grouped by objective, the median effects for the West for objectives are those reported in Exhibit 6-9. None of the differences between medians for Objective 1 and Objective 2 exercises is statistically

significant. However, when these data are summarized across all comparisons of region and age (see Exhibit 3-5) the tendency for Objective 2 effects to be in the same direction but more extreme than those for Objective 1 is a statistically significant tendency at ages 17 and adult in the West.

Exhibit 6-9

Median West regional effects for Objectives 1 and 2 and for all exercises (Numbers of exercises in parentheses).

Objective	Age			
	9	13	17	Adult
1	0.6 (96)	-0.6 (75)	1.1 (89)	2.3 (85)
2	-1.3 (29)	-0.6 (31)	2.6 (24)	2.9 (24)
All exercises	0.0 (145)	-0.6 (122)	1.7 (124)	2.6 (119)

In this context, the median effects at ages 9 and 13 in the West appear as exceptions to the general finding.

The pattern of median effects for physical science and biological science exercises for the West (Exhibit 6-10) follows closely the pattern for all exercises reported in Chapter 3.

Exhibit 6-10

Median West regional effects for physical and biological science exercises (Numbers of exercises in parentheses)

	Age			
	9	13	17	Adult
Physical science	-0.2 (78)	-0.9 (67)	1.5 (78)	1.8 (63)
Biological science	0.5 (48)	-0.1 (39)	2.0 (33)	3.3 (44)

Exercises Administered At More Than One Age

Most of the exercises administered at an age level were developed especially for that age; however, some of the exercises at each age level were also administered at one or more other ages.

The numbers of these overlapping exercises varied from 14 administered to both 9s and adults to 62 given to both 17s and adults.

The comparisons reported in Chapter 3 and thus far in Chapter 6 were developed using data from all the exercises available at an age and for a classification. Would the picture be the same if one were to limit the comparisons to exercises common to more than one age?

In those instances where there are few exercises common to two ages, the data are insufficient either to confirm or to refute the conclusions based on all exercises. Whenever there are a sufficient number of common exercises to warrant drawing a conclusion, the data in general support the trends observed over all exercises.

7.

SIZE-OF-COMMUNITY EFFECTS IN DETAIL

Chapter 4 was mainly concerned with the size of community effects which were typical across all ages and exercises. Here we turn to the details characterizing atypical exercises and predefined classes of exercises. (Each of the released exercises is available in NAEP Report Number 1.) Each of the four size-of-community (SOC) groups is considered in turn.

Big Cities

Atypical Exercises. We first examine specific exercises on which Big City performance is atypically high or atypically low. The procedure for identifying such atypical exercises is explained in Appendix A.

At age 9, Big City performance on one exercise exceeds the upper cutting point of 3%, determining those exercises which are atypical for this group (37% Big City correct versus 33% national). It is an unreleased exercise about words used to refer to scientific generalizations. On four other exercises at age 9, all unreleased, Big City performance is atypically low--at least 13% worse (the lower cutting point for this group) than national. Three of these four exercises, which cover simple properties of campfires, garden plants, and fish, involve content material to which Big City children may have had less real-life exposure than small town, country and suburban children. The fourth exercise deals with household uses of electricity, and it is not clear why there is a large Big City deficit on this particular exercise.

Only one exercise can clearly be considered atypical for Big City 13-year-olds, an unreleased exercise concerning the concept of "fact" in science, on which there was a Big City deficit of 14%. One of the incorrect alternatives, which was open to an unplanned interpretation, was 10% more attractive to the Big City respondents than to all 13s.

At age 17, Big City respondents do atypically well on four exercises, two of which are released. Exercise No. 328 (Big City advantage 6%) requires the knowledge that DNA is present equally in egg and sperm cells. Exercise No. 322, which shows a Big City advantage of 5%, requires the respondent to attri-

bute overweight in a light eater to "highly efficient utilization of food by the body." The two unreleased exercises with Big City advantages as large as 5% concern the properties of temperature, and the proper arrangement of certain chemical apparatus. These four exercises are thus seen to involve rather miscellaneous content.

Six exercises at this age show atypical deficits (-10% or more). Exercise No. 323, with a Big City deficit of 11%, tests the knowledge that the purpose of a fuse is to prevent possible damage to the circuit. Exercise No. 320 (Big City deficit of 11%) is a boat and river arithmetic problem requiring simple addition of velocities to deduce the time necessary to reach a downstream destination. In Exercise No. 305 (deficit 11%), the respondent must select "the movement and characteristics of air masses" as the most important of several factors in predicting weather. One might conjecture that the crucial common element of these exercises, as for age 9, is material with which Big City 17-year-olds have less practical personal experience: fuses, flowing streams, and weather prediction. The three unreleased exercises with Big City deficits exceeding 10% involve bits of knowledge concerning cement, transformers, and building materials--again consistent with the "practical experience" explanation.

There are fewer clues among the atypical exercises at the adult level. One unreleased multi-part apparatus exercise has the curious property that Big City adults perform 16% worse than the national average on the first part and 11% better on the last part. In view of the large sampling error for apparatus exercises, perhaps this instability is due to chance. On released Exercise No. 407 involving the perhaps unfamiliar word "testes" in connection with the production of sperm cells, 15% fewer Big City adults than all adults give the correct answer. An unreleased exercise on the world's food supply displays a 16% Big City deficit.

Science Objectives. The lack of out-of-school experience with certain kinds of content (e.g., "outdoor" things, such as gardens, streams, campfires and cement) may contribute substantially to atypically large Big City deficits. This speculation does not explain why there is a consistent small Big City deficit on the majority of exercises at all ages.

Another way to categorize exercises is by the four science objectives. Exhibit 7-1 presents the median Big City effects at each age level for exercises falling under each of the objectives.

Exhibit 7-1

Median Big City effects for exercises under each objective

(Numbers of exercises in parentheses)

Objective	Age 9	13	17	Adult
1	-5.0 (96)	-4.6 (75)	-2.4 (89)	-2.3 (85)
2	-5.0 (29)	-4.8 (31)	-3.8 (24)	-4.2 (24)
3	-4.0 (11)	-5.0 (8)	-1.9 (6)	1.2 (5)
4	-2.3 (9)	-1.9 (8)	-1.7 (5)	0.4 (5)
All exercises	-4.8 (145)	-4.7 (122)	-2.6 (124)	-2.4 (119)

The comparison based on the most exercises is between Objectives 1 and 2. The data of Exhibit 7-1 suggest a very slightly worse Big City performance on Objective 2 exercises (Possess the abilities and skills to engage in the processes of science) than Objective 1 exercises (Know the fundamental facts of science) at ages 17 and adult. The differences between Objective 1 and Objective 2 medians at these age levels are 1.4% and 1.9%. Each of these differences might plausibly have arisen from sampling error. Nevertheless, a consistent pattern of difference between the two objectives for other SOC groups suggests that the apparent slight difference between performances on the two objectives for Big City respondents may be real.

The Big City median on Objective 4 (Show appreciation of scientists and science), is above the medians for Objectives 1 and 2 at all ages. This relatively better performance is based on very small numbers of exercises, but the consistency over ages gives a fair degree of assurance of its reality. It is perhaps not surprising that Big City children and adults have attitudes almost as favorable toward science as respondents in general, despite the fact that there is a median deficit of 2% to 5% in science knowledge and skill for Big City respondents.

Objective 3 (Understand the investigative nature of science) falls somewhere in between the others. At ages 9 and 13 there is a deficit comparable to that for Objectives 1 and 2, but at

ages 17 and adult, performance on Objective 3 seems somewhat better than on Objectives 1 and 2, and in fact is close to national performance. The number of exercises is too small, however, to draw firm conclusions about something as subtle as an age trend for this objective. The trend over ages for Objective 1, however, is based upon enough exercises to be regarded as reliable. We note from Exhibit 7-1 that, for Objective 1 exercises, there is approximately a 2.5% improvement in 17 and adult Big City performance over 9- and 13-year-old performance. This trend quite closely mirrors the Big City age trend for all exercises.

Physical Science versus Biological Science. Exhibit 7-2 presents the median Big City effects at each age level for exercises classified as physical or biological science. A few unclassified exercises are omitted from this summary. There is no consistent difference in Big City performance between the two types of science exercises. The smaller deficits at the upper age levels reflect the general age trend.

Exhibit 7-2

Median Big City effects for physical and biological science exercises

(Numbers of exercises in parentheses)

	Age			
	9	13	17	Adult
Physical science	-4.5 (78)	-4.6 (67)	-3.3 (78)	-2.8 (63)
Biological science	-5.3 (48)	-4.7 (39)	-1.9 (33)	-3.0 (44)

Urban Fringe

Atypical Exercises. At age 9, three exercises show atypically large Urban Fringe advantages. One of these, released Exercise No. 123, asks what scientists learn by studying fossils. Fifteen percent more 9-year-olds in the Urban Fringe, compared to all 9s, know the answer concerns animals who lived long ago. An unreleased exercise with an Urban Fringe advantage of 11% involves a simple geological fact. Another unreleased exercise with a 9% advantage deals with household uses of electricity. Two

atypical unreleased exercises with deficits of 3% and 5% respectively involve simple properties of nutrition and weather.

At age 13, two unreleased exercises on which Urban Fringe respondents do much better than the national average (by 10% and 12%) involve quantitative matters from genetics and from a mechanical apparatus set-up, and a third (11% advantage) asks for general knowledge about atoms. Among the five atypical exercises with Urban Fringe disadvantages of from 3% to 5% are parts of three released apparatus exercises, No. 234, No. 237, and No. 240. Respondents are asked to select a weight to balance a balance pan, to use the measured density of a wood block to specify the fraction of it which would be above water during floating, and to time 10 swings of a pendulum. (We have already noted special problems of interpretation for the last of these, at least when given to adults.) Two unreleased exercises with similar Urban Fringe deficits concern blood cells and measurement concepts.

At age 17, two released exercises with Urban Fringe advantages of 9% are No. 342 and No. 353. The former is an ecological question about the effects of a decrease in a rabbit population on grass and on hawks. The latter seeks a correct judgment that U.S. scientists are not ahead of the scientists of all other countries in all fields. Two unreleased exercises (Urban Fringe advantages of 12% and 11%) concern straightforward chemical and genetic matters, and one (10% advantage) is a complex question about conditions on the moon. The one exercise on which Urban Fringe respondents do atypically worse (5%) than national is No. 344, the same as No. 240 noted above at age 13. This requires timing 10 swings of a pendulum, and as given to adults has been noted (in Chapter 5) as presenting special problems of interpretation.

In contrast to the fact that Urban Fringe 13- and 17-year-olds do atypically poorly on timing a pendulum (Exercise No. 441 for adults), Urban Fringe adults perform 17% better than the national average on this same exercise! Again, misinterpretation of wording is a likely contributing cause. On two other released adult exercises, No. 409 and No. 447, the Urban Fringe advantage is 14% and 16%, respectively. In No. 409, the name of Darwin must be associated with the theory of evolution. In No. 447, the respondent must choose the answer, "A possible explanation for observations," as the best of several given meanings of the term "theory." A final example of atypically high Urban Fringe advantage (14%) is the unreleased quantitative

mechanics exercise on which 13-year-old Urban Fringe respondents also had an advantage (12%). No exercises at the adult level fell below the cutoff used to define atypically poor performance.

There seems nothing strongly in common among the various examples of exercises with especially good Urban Fringe performance at all ages, except possibly a tendency toward slightly esoteric science content (fossils, atoms, definition of a "theory," etc.).

Science Objectives. Exhibit 7-3 shows median Urban Fringe effects by science objective at each age level.

Exhibit 7-3

Median Urban Fringe effects for exercises under each objective

(Numbers of exercises in parentheses)

Objective	Age 9	13	17	Adult
1	3.1 (96)	3.3 (75)	1.9 (89)	3.0 (85)
2	3.6 (29)	4.0 (31)	3.2 (24)	4.4 (24)
3	2.5 (11)	4.2 (8)	4.2 (6)	7.1 (5)
4	2.0 (9)	1.0 (8)	3.3 (5)	2.4 (5)
All exercises	3.0 (145)	3.4 (122)	2.4 (124)	3.2 (119)

Comparing Urban Fringe effects on Objectives 1 and 2, we find consistently better performance on Objective 2 exercises: by .6%, .7%, 1.3%, and 1.4% at the four age levels. The net magnitude of these consistent differences is sufficient to have moderate confidence that they are not accidents of sampling error. Objective 2 exercises slightly sharpen the general advantage of Urban Fringe respondents. These same exercises slightly sharpen the general deficit of Big City respondents, as noted in the last section.

The small number of exercises for Objectives 3 and 4, and the irregularity of the pattern of results from them in Exhibit 7-3, preclude making any confident generalizations about their

effects. However, in most cases the median advantages are smaller (nearer zero) for Objective 4. Recalling that Big City median deficits were nearer zero for Objective 4, we might conjecture that the exercises on this objective tend to show smaller distinctions between population groups.

Physical Science versus Biological Science. Exhibit 7-4 gives median Urban Fringe effects for physical and biological science exercises. No consistent difference between these two types of exercises is revealed.

Exhibit 7-4

Median Urban Fringe effects for physical and biological science exercises

(Numbers of exercises in parentheses)

	Age			
	9	13	17	Adult
Physical science	3.6 (78)	3.3 (67)	2.3 (78)	3.0 (63)
Biological science	2.4 (48)	2.9 (39)	1.9 (33)	3.5 (44)

Medium-Size Cities

Atypical Exercises. In general, the Medium Cities distributions in Exhibit 4-3 (page 25) are more compact than was true for previous SOC categories (compare Exhibits 4-1 and 4-2 on pages 23 and 24). Thus there are fewer atypical or highly extreme exercises.

At age 9, Medium City respondents do atypically well (7% advantage) on one unreleased exercise concerning the relative densities of common substances.

No atypical exercises appear at age 13. At age 17, Medium Cities respondents performed unusually well (7-10% above national) on one released and five unreleased exercises. Exercise No. 318 requires the respondent to know that in most chemical changes, atoms are rearranged into new molecules. The unreleased exercises tap knowledge about pendulums, simple diseases, electric charge, simple analytic geometry, and how to plot and interpret

data from an experiment in mechanics. The one exercise with an unusual Medium City deficit (6%) at age 17 is No. 322. It requires the respondent to attribute overweight in a light eater to "highly efficient utilization of food by the body."

At the adult level, two unreleased exercises yield atypically low Medium Cities performance. One concerns a fact of astronomy, and the other requires a generalization from measurements the respondent has just made with a simple apparatus.

Science Objectives. Exhibit 7-5 gives median Medium City effects by objective. With only one possible exception, the differences from objective to objective may reasonably reflect only inevitable sampling fluctuations. At the adult level, Objective 2 performance is 2.0% better than Objective 1 performance, a difference of borderline statistical reliability.

Exhibit 7-5

Median Medium City effects for exercises under each objective

(Numbers of exercises in parentheses)

Objective	Age 9	13	17	Adult
1	0.9 (96)	1.2 (75)	1.0 (89)	0.3 (85)
2	0.1 (29)	1.7 (31)	0.9 (24)	2.3 (24)
3	1.4 (11)	0.3 (8)	0.1 (6)	-0.2 (5)
4	0.9 (9)	0.5 (8)	0.2 (5)	-0.2 (5)
All exercises	0.8 (145)	1.1 (122)	0.8 (124)	0.4 (119)

Physical Science versus Biological Science. Exhibit 7-6 gives medians for physical and biological science exercises. It is difficult to interpret the small variations displayed.

Exhibit 7-6

Median Medium City effects for physical and biological science exercises

(Numbers of exercises in parentheses)

	Age			
	9	13	17	Adult
Physical science	0.6 (78)	0.8 (67)	0.6 (78)	2.0 (63)
Biological science	1.2 (48)	2.1 (39)	1.5 (33)	-0.2 (44)

Smaller Places

Atypical Exercises. As was the case for Medium Cities, there are few exercises atypical for Smaller Place respondents.

At age 9, Smaller Place performance is uncommonly good (6% above national) on one unreleased exercise about rocks.

There are no atypical exercises at age 13. At age 17, there are two examples of notably high Smaller Place effects (4% above national), released Exercises No. 322 and No. 344. The former is the same body chemistry exercise on which Big City 17s do especially well and Medium City 17s especially poorly. This profile of atypicality across SOC groups may reflect the unexpected correct answer of this exercise. Exercise No. 344 involves timing a pendulum, the same apparatus exercise that has previously been noted as having special problems of interpretation. Two unreleased exercises on which Smaller Place respondents perform below the national average by 9% and 11%, respectively, elicit simple information about analytic geometry and about the solar system.

There are no atypically good exercises for Smaller Place adults. The four examples of especially poor performance (12-15% below national) include released Exercise No. 409, which requires associating the name of Darwin with the theory of evolution, an exercise on which Urban Fringe respondents did especially well. Local variations in the emphasis given to the theory of evolution would not be surprising. (The Southeast performance on this exercise is 12% below the national average.) Exercise

No. 406 requires identification of adrenaline as a heart stimulant. One unreleased exercise involves recognition of a technical term from biology, and another necessitates realizing that uncertainty surrounds a certain statement about the solar system. This handful of exercises on which Smaller Place respondents do very poorly seems to emphasize isolated bits of "bookish" fact.

Science Objectives. Exhibit 7-7 gives median Smaller Place effects by objective. A comparison of Objectives 1 and 2 reveals but slight differences, although the direction of the general tendency is for Objective 2 performance to seem worse than Objective 1 performance (except at age 17, when they are equal).

Exhibit 7-7

Median Smaller Place effects for exercises under each objective

(Numbers of exercises in parentheses)

	Age			
Objective	9	13	17	Adult
1	-0.9 (96)	-0.9 (75)	-1.9 (89)	-2.6 (85)
2	-1.3 (29)	-2.2 (31)	-1.9 (24)	-4.2 (24)
3	-0.9 (11)	1.4 (8)	-3.9 (6)	-7.2 (5)
4	-1.3 (9)	-1.1 (8)	-2.1 (5)	-2.7 (5)
All exercises	-1.2 (145)	-1.1 (122)	-2.1 (124)	-2.8 (119)

Such a tendency is consistent with the pattern whereby Objective 2 exercises sharpen the general effect for each particular SOC group (see Exhibit 4-5). For Smaller Place respondents, Objective 4 shows no differential effects, with each Objective 4 median lying very close to the overall median for the particular age group. The Objective 3 effects are ragged from age to age. Especially prominent is the median Smaller Place deficit of 7.2% on the five Objective 3 exercises at the adult level. No obvious explanation for such an effect suggests itself.

Physical Science versus Biological Science. The median Smaller Place effects for the two types of science content appear in Exhibit 7-8. There are no noteworthy differences between physical and biological science except at age 17, where there is a 3% greater deficit for biological than physical science exercises. This difference between physical and biological science performance is larger than that for any other SOC and age combinations (see Exhibits 7-2, 7-4, 7-6, 7-8), and is clearly reliable statistically. Is biology relatively less emphasized than physics and chemistry in rural and small town high schools? If so, this might be responsible for the 3% difference.

Exhibit 7-8

Median Smaller Place effects for physical and biological science exercises

(Numbers of exercises in parentheses)

	Age			
	9	13	17	Adult
Physical science	-1.3 (78)	-0.9 (67)	-0.9 (78)	-3.2 (63)
Biological science	-1.1 (48)	-1.6 (39)	-3.9 (33)	-2.3 (44)

APPENDIX A

CHOOSING THE CUTOFFS

Our observed percentages of success are based on samples, but our interest is in whole populations. Thus our information is always less than complete. As a result, conclusions stated either in numbers or in words are approximate rather than exact, slightly blurred rather than sharp. Whatever rule we choose to fix the cutoffs, and thus to decide which comparisons are atypical and worth serious consideration, the performance of that rule will be less than perfect.

However we choose a cutoff rule, there will be some chance that an exercise whose population value is typical or close to typical will have a sample value classed as atypical by our rule. The more one tries to avoid this by stiffening the rule, thus calling fewer exercises atypical, the more often sample values will fail to be recognized as atypical when their population values are far from typical. This is a general problem that arises whenever sample results (including differences and effects) are examined in detail.

In choosing a rule, we must balance these two kinds of unfortunate consequences. We may also need to consider what sizes of differences or effects are likely to be practically meaningful. Besides discussing individual exercises, we want to discuss the groups of exercises found atypical in a given direction. Our choice of cutoffs affects our ability to describe such groups. The rule whose details are given below was chosen with some attention to all these considerations.

Variances and Standard Errors

The samples drawn for the first assessment, both in and out of school, involved careful designs in which the country was divided into areas called strata. For each exercise, results were obtained for two groups of respondents in each stratum.*

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*The two groups come from two "primary sampling units" in each stratum. (See Appendix C of NAEP Report No. 1.) Because of the existence of planned half strata and the loss of some primary sampling units, losses that were duly allowed for in the estimation procedure, it was necessary to "collapse" a few pairs of strata by combining two original strata in one stratum for the purpose of assessing sampling variability.

To assess sampling variability, it is necessary to estimate a suitable measure of how far the results of the 1969-70 administration of a science exercise would have varied had different groups of respondents been selected in any or all strata. Our concern has to be with other possible selections according to the same random procedures used in the actual administration.

In this situation, the use of two groups of respondents per stratum allows us to calculate an estimate of such a measure of variability, the sampling variance, defined as the average square of the difference in result between a single administration and the average result for all possible administrations.

In this report, our immediate concern is with the estimated sampling variance of sex differences, regional effects, and size-of-community effects. It is equally useful to look at the standard errors of these comparisons, defined as the square roots of the estimated sampling variances.

These estimated sampling variances or standard errors will vary from one exercise to another for several reasons, including:

1) Different sample sizes for some exercises. (The time-consuming apparatus exercises were given to fewer respondents. Certain other exercises were excluded in a few jurisdictions. Shortness of class periods occasionally caused omission of later exercises.)

2) The automatic decrease in variance accompanying very easy or very hard exercises.

3) Larger or smaller differences in the sizes of actual school-to-school differences. (In some cases these presumably reflect the greater or lesser effect or extent of curriculum variations.)

4) Sampling variations inevitable in the process of estimating sampling variability.

For reference, Appendix D presents estimated standard errors for the sex effects, regional effects and size-of-community effects for each science exercise.

Kinds of Cutoffs

If we wanted to look at results only for individual exercises, it would be natural to compare each deviation (whether from zero or from a typical comparison) with a suitable multiple of

the standard error available for that deviation. Doing this would correspond, in terms of cutoffs, to using a separate cutoff for each exercise. This would have been quite possible by using the estimated standard errors given in Appendix D. However, it was felt that this would involve more details and complications than would be warranted by the likely gains. (The interested reader can use Appendices C and D as a basis for his own experiments with this type of analysis.)

Instead, the choice was to use a single pair of cutoffs for each class of exercises. To do this, it was necessary to combine standard errors or estimated sampling variances across exercises. For this purpose, it is appropriate to use a combined standard error, which is the square root of a combined estimated sampling variance, this latter being the arithmetic mean of the estimated sampling variances for the exercises involved. The combined standard errors actually used are given in Exhibit A-1.

Size of Cutoffs

The easiest way to use the combined standard error to fix the cutoffs is to start from the corresponding median and lay off a suitable multiple of the combined standard error on either side. If the multiple is large, very few exercises will be falsely called atypical, but we will fail to take advantage of the information provided by intermediate deviations.

There are circumstances under which we might be able to make good use of quite small multipliers, even fractions. When comparing one subclass of exercises well below the median with another subclass of exercises well above the median, larger subclasses could be helpful, so helpful as to outweigh the fact that a substantial fraction of each subclass would fall in that subclass purely by accident.

A multiplier of about 2 is conventional for many purposes. This choice leads to about 5% of all items entering one distinctive subclass or the other purely by chance. Since we deal with classes of about 120 exercises (and since 5% of 120 is six), this would mean an average of about 3 "atypically high" exercises and about 3 "atypically low" exercises purely by chance. Thus this choice seemed more likely to confuse the picture than to clarify it.

Another practical detail should concern us. Our exhibits show

Exhibit A-1

Combined standard errors used to establish cutoffs for sex, region, and size of community

	Age			
	9	13	17	Adult
Male-female difference	3.0	3.0	3.0	4.5
Region				
Northeast	2.26	2.53	2.67	3.87
Southeast	2.88	2.85	3.12	4.79
Central	2.46	2.49	2.32	3.42
West	2.49	2.49	2.43	4.37
Size of Community				
Big City	2.91	2.95	2.64	4.78
Urban Fringe	2.32	2.47	2.47	3.88
Medium City	2.36	2.53	2.49	3.83
Smaller Places	2.38	2.55	2.41	3.60

only the integer percentage for a difference or effect. Thus all comparisons between 3.1 and 3.9 are shown as 3, for example. If our cutoffs are to be simply related to our pictures, they should fall at the end of such a range. A cutoff between 2.9 and 3.1 or one between 3.9 and 4.1 is easily pictured and used. One between 3.4 and 3.5, or at 3.74, is not.

As a result, it was decided to set the cutoffs in the following way:

1, start from the median comparison for all the exercises involved,

2, move up and down distances equal to 2.5 times the combined standard error,

3) move further in each direction until the cutoff divides one integer-percent range from the next.

Thus if the median were -1.7% and the combined standard error were 1.9%, we would find first

$$(2.5)\ (1.9\%) = 4.75\%$$

then

$$-1.7\% - 4.75\% = -6.45\% \quad \text{and} \quad -1.7\% + 4.75\% = 3.05\%$$

and then place the arrows between

$$-7.9 \text{ to } -7.0 \quad \text{and} \quad -6.9 \text{ to } -6.0$$

on the low side and between

$$3.0 \text{ to } 3.9 \quad \text{and} \quad 4.0 \text{ to } 4.9$$

on the high side.

For each class of rather more than 100 exercises, an average of perhaps one or two exercises can be expected to fall outside these cutoffs because of sampling fluctuations. (The smaller sample sizes for apparatus exercises can increase these numbers somewhat.) A substantial number of exercises that we might have liked to consider atypical will of course fail to be recognized as such. Some such compromise is, however, necessary.

APPENDIX B

Definition of Terms

The major reporting categories used in this report are: Age, Region, and Size of Community (SOC).

1. Age: Four age levels were assessed. Three of these were in-school--9, 13, and 17-year-olds; and two--17s and young adults--were out-of-school, sometimes referred to as the household sample. The criteria used or the operational definitions of the four ages are as follows:

   9s--Born between 1/1/60 and 12/31/60
   13s--Born between 1/1/56 and 12/31/56
   17s--In-school: Born between 10/1/51 and 9/30/52
   Out-of-school: Born between 10/1/50 and 9/30/51 and <u>not</u> enrolled in school in March '68 OR born between 10/1/51 and 9/30/52 and <u>not</u> enrolled in school in March 1969.
   young adults--Born between 7/1/33 and 6/30/43

2. Region: Four geographical regions are being used for <u>all</u> age levels--<u>Northeast</u>, <u>Southeast</u>, <u>Central</u>, and <u>West</u>. The states falling in each of these four regions, for reporting purposes, are as follows:

<u>Northeast</u>	<u>Southeast</u>	<u>Central</u>	<u>West</u>
Del.	Ala.	N.D.	Hawaii
Maine	Ark.	S.D.	Alaska
N.H.	Fla.	Iowa	Idaho
Vt.	Ga.	Kansas	Mont.
D.C.	Ky.	Minn.	Wyo.
Md.	La.	Mo.	Utah
N.J.	Miss.	Neb.	N.M.
N.Y.	N.C.	Ill.	Nev.
Conn.	S.C.	Ind.	Cal.
Pa.	Tenn.	Mich.	Ore.
Mass.	Va.	Ohio	Wash.
R.I.	W. Va.	Wis.	Ariz.
			Colo.
			Tex.
			Okla.

This classification is that used by the Office of Business Economics, Department of Commerce; the names for regions used by OBE differ from National Assessment names for three regions:

National Assessment	OBE
Northeast	Northern Atlantic
(Southeast)	(Southeast)
Central	Great Lakes and Plains
West	West and Northwest

3. Size of Community (SOC): The four reporting categories for SOC were (1) Big Cities, (2) Urban Fringe, (3) Medium-Size Cities, and (4) Smaller Places. They were defined as follows:

SOC Category	Description
Big Cities	All central cities of the U.S. with a population of 200,000 or greater.
Urban Fringe	For each county containing a city in the Big City SOC category, the region of the county not within the city limits plus all counties within the same Standard Metropolitan Statistical Area (SMSA) as the "Big City."
Medium-Size Cities	All SMSA counties not included in Big Cities or Urban Fringe SOC categories plus all counties which contain at least one city of 25,000 people or more. If such a city was a part of more than one county, the county with a majority of the city population was classified here.
Smaller Places	All counties and combinations of counties with a population under 25,000 not included in the above categories.

APPENDIX C

NATIONAL PERCENTAGES OF SUCCESS, AND EFFECTS FOR REGION, SIZE OF COMMUNITY, AND SEX FOR RELEASED AND UNRELEASED SCIENCE EXERCISES

Data on the percentage of success for released and unreleased exercises are presented in this appendix. Exercises are ordered by age, and for a given age all exercises assigned to Objective 1 are listed first, followed, in turn, by the exercises for Objectives 2,3, and 4. For an objective, released exercises are shown in order from highest to lowest percentage of national success; unreleased exercises, which then follow, are also ordered by national percentage of success. Exercises are identified by three digits preceded by an R (released) or a U (unreleased). The system is:

	Released	Unreleased
Age 9	R100's	U600's
Age 13	R200's	U700's
Age 17	R300's	U800's
Adult	R400's	U900's

The national percentage of success for an exercise is shown in column 2, headed NATL %. The deviation from the national percentage of success--called the effect--for each of four regions, each of four sizes of community, and males and females follows.

Chapters 2 and 5 deal with the differences between male and female performance, rather than with the difference between males and national, or females and national. To obtain the male-female differences, it is only necessary to subtract the sex effect for females from the sex effect for males.

For the four region and four size-of-community groups, atypical exercises--those whose effects lie above or below the cutoffs described in Appendix A--are indicated by triangles pointing up to indicate atypically high performance, by triangles pointing down to indicate atypically low performance. This notation is modified to indicate atypical sex differences. A triangle pointing up, located to the right of the male effect, indicates an atypical male advantage. An up-pointing triangle located

to the right of the female effect indicates an atypical female advantage.

The next two columns of the appendix indicate the objective for which each exercise was written, and whether the exercise was classified as assessing biological (B) or physical (P) science. Exercises not classified either as physical or biological are marked U.

The final column identifies exercises also given at other ages--overlap exercises.

Small apparent discrepancies between effects given in this appendix and effects discussed or displayed in Chapters 2 to 7 may be due to the fact that an effect of 11.96, for example, is reported here as 11.9, but appears as 12.0 in the text.

EX. NO.	NATL %	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F	OBJ	SCI. TYPE	OVERLAP EX. NO.
(Age 9)														
R101	93.8	1.8	- 7.2	2.7	1.1	- .2	1.9	.5	- 2.2	- .1	.2	1	B	R201
R102	92.9	1.0	- 7.5	2.3	1.8	- 3.3	1.5	2.2	- 1.4	.4	- .3	1	P	
R103	92.6	.9	- 3.8	1.6	.5	- 2.9	3.0	- 1.3	.1	- .8	1.0	1	B	R202
R104	91.3	2.8	- 3.2	1.6	- 1.9	- 6.5	.1	3.7	.9	.3	- .2	1	P	
R105	90.7	- .1	- 5.1	2.1	2.3	- 8.5	4.7	- 1.3	1.8	1.2	- 1.2	1	B	
R106	88.7	.9	- 3.9	3.5	- 1.1	- 7.6	4.5	.3	- .1	.5	- .4	1	P	R203
R107	87.8	1.1	- 1.0	3.2	- 3.3	- 4.4	.5	.6	2.0	1.5	- 1.4	1	P	
R108	87.6	2.8	- 4.2	3.1	- 3.6	- 4.2	3.9	.9	- 2.6	.5	- .4	1	B	
R109	86.3	1.1	- 6.0	6.0	- 3.5	- 2.5	.5	.8	.8	2.3	- 3.1	1	P	
R110	85.3	.5	- 2.5	.7	1.2	-10.0	3.8	.6	2.0	.5	- .5	1	P	
R111	83.0	- 1.4	- 4.9	4.4	1.1	- 2.6	1.6	- 1.0	1.3	.7	- .7	1	P	
R112	83.2	- 1.5	- 5.7	4.2	.7	- 6.4	6.4	- 1.9	- .4	- .7	.7	1	B	
R113	83.3	5.4	- 4.5	3.6	- 6.1	-11.2	1.6	3.0	2.3	- 1.6	1.9	1	B	
R114	80.9	4.8	- 2.3	- .6	- 1.9	- 6.7	1.5	1.3	1.8	.6	- .3	1	B	
R115	79.3	- 2.4	2.0	- 1.1	2.3	- 2.7	- .4	.0	2.7	- 1.7	2.2	1	P	
R116	79.8	4.1	- 9.6	- .3	3.8	- 7.0	5.9	2.2	- 3.8	- 2.8	2.5	1	B	
R117	76.5	1.9	- 3.0	- .7	2.1	- 7.4	7.6	.9	- 4.0	- .6	.8	1	P	
R119	72.9	4.4	- 4.1	- .3	- .9	- 3.1	2.0	1.2	- .8	.6	- .7	1	P	
R120	71.8	3.7	- 6.8	6.3	- 4.2	- 2.5	3.6	- .8	- 1.5	4.2△	- 4.2	1	P	
R121	71.7	.9	- 9.2	6.4	- 1.4	- 8.4	6.1	1.5	- 1.7	2.4	- 3.3	1	P	
R122	71.4	- 1.6	- 7.3	5.5	.9	- 9.2	4.5	4.1	- 1.9	1.0	- 1.3	1	B	
R123	67.3	3.9	-22.8▽	8.6△	2.3	-11.3	14.5△	- 3.8	- 4.0	.1	- .0	1	B	
R124	63.1	1.1	- 2.8	2.6	- 1.7	- 4.3	2.7	2.7	- 2.3	- .8	1.1	1	P	
R125	61.5	4.0	- 4.0	- 1.6	1.8	-10.5	1.4	5.6	.5	- .3	.5	1	B	
R126	59.4	8.4▲	- 4.9	- 3.2	- .2	- 6.8	4.4	4.6	- 4.9	- .4	.5	1	P	
R127	60.2	3.3	- 7.4	5.1	- 4.2	- 5.1	5.3	2.6	- 5.3	- 1.0	1.2	1	P	
R128	55.1	11.0△	-11.9	1.3	- 1.9	- 1.6	7.8	- 1.2	- 5.5	2.2	- 2.6	1	P	
R129	54.8	4.6	-10.1	5.9	- 2.6	- 6.3	1.9	1.2	.8	- .8	1.0	1	B	
R130	52.7	4.6	-13.9▽	6.7	- 1.4	- 5.6	6.5	2.0	- 5.1	- 2.2	2.4	1	U	R205
R131	51.4	1.5	- 1.1	.5	- 1.0	- 9.9	1.8	4.3	1.8	.6	- .7	1	B	
R132	48.6	3.1	- 9.4	.7	2.9	- 4.6	5.8	- .3	- 2.5	3.3	- 4.6	1	P	R226
R134	45.8	- 3.1	- 2.0	2.2	2.5	.1	.5	1.3	- 1.7	.5	- .5	1	B	
R135	38.3	- 4.1▽	- 5.0	5.4	2.0	- 5.2	3.2	- 2.7	2.1	1.5	- 1.5	1	P	
R136	36.0	5.3	- 4.9	- .2	- 1.0	- 7.2	8.2	- 1.1	- 3.9	- 2.1	2.4	1	P	
R137	33.5	1.2	- 2.6	- 1.3	2.6	.8	- 1.1	2.2	- 1.4	2.6	- 2.1	1	P	
R138	35.0	1.3	3.2△	- 5.5▽	2.8	- 4.2	.5	2.9	- .0	- .0	.1	1	P	
R139	28.0	4.4	- 2.8	- .4	- 1.4	- 5.5	.5	3.5	- .6	.0	.0	1	P	
R140	14.0	- 2.9	10.1△	- 2.6	- 2.2	- 5.2	5.1	- .7	- 1.2	2.2	- 2.2	1	B	
R141	7.2	1.8	- 2.8	.5	.1	- 1.3	1.4	- .1	- .2	.5	- .4	1	P	
U601	95.7	1.2	- 1.4	- .4	.7	- 1.9	.4	.2	.7	.3	- .2	1	B	
U602	95.4	1.9	- 4.6	1.0	1.0	- 3.2	1.6	1.9	- 1.1	- .0	.1	1	B	
U603	95.1	2.4	- 5.8	.9	.8	- 5.5	2.3	1.0	.3	.7	- .5	1	B	
U604	94.8	.7	- 3.7	.5	2.0	- 1.7	1.2	.3	- .1	- .1	.3	1	P	
U605	93.1	1.4	- 1.3	2.0	- 2.1	- 3.7	3.9	- 2.2	.3	.7	- .6	1	P	
U606	92.1	2.7	- 3.0	2.1	- 2.8	- 4.2	3.7	- .2	- .5	.4	- .2	1	P	

EX. NO.	NATL %	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F	OBJ	SCI. TYPE	OVERLAP EX. NO.
U607	92.0	2.8	- 8.3	2.0	.9	- 3.0	3.2	.5	- 1.8	2.8	- 3.9	1	B	
U608	91.3	1.5	- 7.6	3.7	.5	- 3.9	2.7	3.6	- 3.6	.0	.1	1	B	
U609	89.3	2.4	- 7.7	1.6	1.4	- 5.6	3.6	.2	- .1	- .8	.8	1	P	
U610	87.5	1.9	- 1.3	- 2.9	3.0	.3	- .2	- 2.3	3.1	- 1.4	1.2	1	B	
U611	87.3	1.9	- 7.0	3.3	.0	- 6.8	3.9	1.8	- 1.3	.1	.0	1	B	
U612	86.4	4.2	- 5.0	.4	- .7	- 4.1	.1	- .3	3.4	- .1	.1	1	P	
U613	82.0	- 2.5	- 5.5	5.5	.2	- 8.3	4.6	- 1.7	2.2	.0	.0	1	B	
U614	81.5	3.4	- .9	.3	- 3.0	- 6.9	5.8	4.1	- 5.4	.7	- .9	1	P	
U615	81.2	- .1	- 2.5	2.6	- 1.1	-13.1▽	3.0	1.6	4.3	1.0	- .7	1	P	
U616	80.6	5.6	-14.4▽	4.5	- .4	-13.9▽	9.4△	.7	- 1.3	- 1.4	1.3	1	P	
U617	78.2	1.8	- 5.3	- .1	3.6	- 4.2	1.7	.0	1.1	- .5	.7	1	P	
U618	77.9	3.0	- 7.4	- .2	2.8	- 7.9	4.2	4.4	- 2.9	2.3	- 3.1	1	B	
U619	77.9	6.9	-12.0	5.0	- 2.3	-10.1	5.2	.9	.4	- .2	.4	1	P	
U620	76.7	1.5	- 9.3	1.0	4.4	- 2.4	- .3	2.5	- .3	- 1.1	1.1	1	P	U911
U621	76.5	3.3	3.8△	- 3.5	- 1.9	- 1.7	- 2.9▽	4.3	.6	- 1.3	2.0	1	B	
U622	75.3	1.2	- 5.7	3.0	.6	-12.8	4.1	4.2	- .4	- 2.3	2.7	1	P	U903
U623	74.9	6.4	- 7.7	3.0	- 4.1	- 2.3	2.9	1.8	- 3.5	.5	- .3	1	P	U704
U624	74.8	- 3.0	-11.4	4.5	7.7△	- 7.9	8.8	- 3.3	- 1.5	.1	- .0	1	P	U910 U703
U625	73.2	3.2	- 3.8	1.6	- 1.7	- 3.2	- .2	5.0	- 2.4	- 1.7	2.2	1	B	
U626	72.5	9.2△	-14.5▽	4.7	- 1.9	- 9.6	7.1	1.2	- 2.0	.7	- .6	1	P	
U627	71.3	6.4	- 5.7	- 1.9	.4	- 4.7	7.1	.4	- 4.8	- 1.6	1.5	1	B	
U628	69.6	1.3	- 2.6	4.6	- 5.6	- 5.6	2.3	1.0	.1	- .7	.9	1	B	
U629	69.0	- .5	- 7.3	2.8	3.6	- 3.3	6.0	.8	- 4.8	- .6	.7	1	P	U912
U630	68.2	4.0	- 4.7	.8	- .7	- 7.6	2.3	7.4△	- 4.5	- .0	.1	1	P	
U631	67.5	4.9	- 6.5	4.7	- 6.2	-15.2▽	7.3	2.3	- .8	.4	- .4	1	P	
U632	66.7	3.6	-11.0	3.8	.6	- 3.2	4.4	2.4	- 5.2	.1	- .0	1	P	U708
U633	64.7	6.9	-12.6	.7	1.9	- 4.8	6.9	- 1.5	- 2.1	1.0	- .6	1	P	U709
U634	63.3	3.2	- 7.9	- .0	3.6	- 5.6	6.1	- .1	- 3.0	.9	- .8	1	P	U913
U635	62.2	- 8.9▽	- 9.2	9.1△	4.6	-12.8	5.0	- 2.2	5.9△	- 2.0	1.8	1	P	
U636	61.7	.3	- 6.5	.0	4.8	- 3.5	6.7	1.3	- 6.1	.0	.0	1	P	U918
U637	56.8	.7	- 5.5	1.2	2.7	- .4	1.9	4.0	- 5.4	- 2.2	2.5	1	P	U915
U638	56.8	- 4.4▽	4.2△	1.3	- .5	- 3.4	- .8	2.2	.6	- 2.1	2.4	1	B	U701
U639	55.7	- 1.2	- 3.0	- 2.0	5.8	- 8.4	10.9△	- 3.9	- 3.1	.5	- .4	1	P	U904
U640	53.8	1.8	- 6.8	- 3.3	7.2△	- 5.7	1.5	6.6	- 3.7	.7	- .9	1	P	U926
U641	49.2	.2	- 2.6	- 2.3	4.8	- 5.5	- 1.8	3.0	2.7	- .4	.4	1	B	
U642	49.2	3.0	- 5.1	- 2.4	3.9	- 5.1	8.3	- 2.8	- 3.5	1.4	- 1.4	1	P	U719 U916
U643	41.6	2.6	- 5.9	1.7	.6	- 5.4	- 1.0	1.9	3.2	1.4	- 1.6	1	B	
U644	41.2	2.5	- 6.5	4.4	- 3.1	-10.7	2.6	3.7	.4	- 1.4	1.6	1	P	
U645	40.6	6.3	-11.0	- 3.3	6.3	- 5.1	8.5	.7	- 6.4	- 1.0	.9	1	P	
U646	38.8	7.6	-12.0	.2	1.2	- .1	6.0	- 2.5	- 3.7	1.4	- 1.1	1	P	
U647	37.8	- .3	- 8.6	- 2.0	9.6△	- 6.5	7.2	- 1.5	- 2.4	- .8	.9	1	B	
U648	37.1	7.6	- 5.6	- .7	- 2.6	- .4	.9	.5	- 1.1	2.1	- 2.9	1	P	
U649	36.6	4.9	- 1.3	- 4.2▽	1.6	1.4	1.3	.1	- 2.5	2.8	- 2.0	1	P	U909
U650	35.8	4.3	- 5.7	- 2.1	3.6	- 3.0	- .8	2.0	.7	.7	- .7	1	P	
U651	34.5	.6	- 3.4	1.6	.6	- 7.3	4.8	- 1.0	.5	- 1.0	1.2	1	P	

EX. NO.	NATL %	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F	OBJ	SCI. TYPE	OVERLAP EX. NO.
U652	33.6	- 1.0	- 1.7	1.7	.4	- 4.5	3.3	- .8	.5	.3	- .2	1	P	
U653	21.7	- 2.0	4.4▲	- 3.5	3.4	- .9	- 4.1▼	3.4	1.9	.2	- .1	1	P	
U654	20.7	1.3	- 4.8	- .6	4.2	- .8	5.9	- 5.1	- .5	- .6	.8	1	U	
U655	14.2	- .3	- .2	- 1.2	2.5	1.7	- 1.0	2.2	- 2.0	.4	- .4	1	B	U736
U656	13.0	- .0	.0	1.5	- 2.0	- .8	1.0	- 3.1	2.3	1.2	- 1.2	1	P	
U657	11.6	2.5	- 2.2	1.1	- 1.8	- .1	- 2.3	2.8	- .2	2.1	- 2.5	1	P	U935
R133	46.0	6.4	-10.9	3.0	- 1.5	- .2	1.3	1.1	- 2.4	- 1.2	1.3	2	B	
R142	96.7	- 2.0	.2	1.6	.0	- .0	1.7	- .5	- 1.2	.5	- .4	2	P	
R144	90.5	.0	- 5.6	2.7	.9	.7	3.9	- 2.4	- 2.2	- .2	.3	2	B	
R145	81.3	1.7	- 5.6	2.8	.0	- 4.6	.9	.4	1.7	- .4	.5	2	U	R229
R146	75.8	5.4	- 9.1	4.1	- 3.6	- 7.9	4.0	3.2	- 2.4	- 1.3	1.5	2	P	
R147	68.6	.8	- 7.8	7.9	- 2.3	- 7.1	3.7	- .3	1.1	1.7	- 1.6	2	U	
R148	66.9	5.6	- .9	- 3.0	- 1.4	- 6.1	5.4	.1	- 1.4	1.0	- .9	2	B	
R149	65.0	4.5	- 5.1	3.3	- 4.2	- 8.0	3.6	3.4	- 1.3	.6	- .6	2	P	
R150	56.0	1.8	- 9.2	6.0	- .4	- 6.4	- .4	1.9	2.5	- .3	.5	2	U	R231
R151	54.0	3.9	- 4.6	- .2	.4	- 2.5	.5	2.8	- 1.4	2.8	- 2.7	2	B	
R152	53.3	2.4	- .6	2.5	- 5.6	- 7.3	3.0	2.2	- .7	1.1	- 1.0	2	B	R435
R153	38.2	9.5▲	- 4.9	- 1.3	- 3.7	- 7.6	6.0	1.4	- 2.7	.8	- .5	2	P	
R154	17.2	2.0	1.9	- 1.6	- 1.2	.4	4.0	- 5.1	.6	.5	- .3	2	P	
U658	95.6	2.1	- 3.7	1.1	.0	- 3.1	2.2	1.3	- 1.5	.0	.0	2	B	
U659	91.4	1.3	- 4.7	1.9	- .0	- 2.4	.9	1.6	- .9	- .7	.7	2	P	
U660	91.3	1.0	- 3.1	2.7	- 1.7	- 1.6	2.9	.2	- 2.2	2.1	- 2.9	2	B	
U661	86.8	3.0	- 7.9	2.1	1.4	- .5	4.5	.0	- 4.2	- .7	.8	2	P	
U662	81.3	5.6	-13.1▼	5.9	- 2.7	- 8.2	8.1	.8	- 5.0	1.7	- 1.6	2	P	
U663	76.2	2.7	- 5.8	2.7	- 1.5	- 5.2	.6	- .4	3.8	- 2.3	1.9	2	P	
U664	74.2	4.2	-11.1	2.4	1.1	- 7.0	6.1	- .0	- 1.2	1.9	- 2.6	2	P	
U665	70.8	2.7	- 7.9	5.0	- 1.0	- 8.7	7.8	- 2.6	- .4	.8	- .7	2	B	
U666	66.3	1.6	- 6.3	2.6	.7	- 4.9	2.8	- 1.6	1.9	- 1.5	1.7	2	B	U953
U667	63.5	10.8▲	- 6.9	4.5	-12.5▼	-13.7▼	1.8	4.3	2.9	.6	- .5	2	B	
U668	63.4	4.8	-11.6	4.1	.0	- 6.9	7.8	- .4	- 3.2	- 2.3	2.5	2	P	
U669	52.0	9.1▲	2.0	.2	-10.2▼	- 4.0	.3	- .5	3.3	2.0	- 2.0	2	P	
U670	48.0	.3	- 4.3	2.9	- .4	-10.4	4.8	.2	.9	- .5	.7	2	P	
U671	31.8	2.5	-10.8	6.6	- 2.7	- 4.0	6.1	- 4.7	1.1	.6	- .4	2	P	
U672	19.7	.5	- 3.3	4.4	- 3.0	- .5	6.3	- 2.6	- 4.1	2.4	- 3.3	2	P	
U673	11.9	2.8	- .1	- 1.1	- 1.1	1.4	.5	.0	- 1.5	- .0	.2	2	P	
R155	92.8	2.8	- 1.8	2.7	- 4.5	- 1.9	2.3	- 1.9	1.0	1.2	- 1.5	3	U	
R156	79.6	2.9	-13.9▼	2.5	4.5	- 3.9	3.6	1.9	- 3.1	- 1.9	1.7	3	P	
R157	39.4	- .9	- 2.4	3.1	- .7	- 7.1	- .0	6.0	- .8	1.2	- 1.4	3	B	R242
R158	23.6	2.2	- 3.6	.6	.4	- 2.8	7.7	- 3.6	- 3.5	.8	- .7	3	U	R244
R159	23.0	- 1.5	- 4.8	3.7	1.1	- 3.9	4.0	- 1.6	.0	- .1	.2	3	U	
U674	93.8	2.0	- 3.9	2.4	- 2.0	- 3.6	2.3	1.8	- 1.9	- .8	.9	3	U	
U675	75.4	.8	- 4.8	4.7	- 2.5	- 7.5	5.1	1.4	- 1.2	2.1	- 2.8	3	U	
U676	41.1	7.5	- 2.1	- 3.8	- .6	- 4.9	2.7	.8	- .1	1.6	- 1.1	3	U	
U677	33.4	2.9	6.2▲	- 5.6▼	- 1.0	3.9▲	- .8	2.7	- 4.5	- 1.3	1.7	3	U	
U678	26.0	- 2.2	2.3	1.1	- .9	- 6.5	2.5	1.3	.4	1.0	- 1.0	3	U	

EX. NO.	NATL %	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F	OBJ	SCI. TYPE	OVERLAP EX. NO.
U679	22.1	.3	- 2.3	2.1	- .6	- 5.7	1.5	2.7	- .7	- 1.9	2.2	3	U	
R160	74.2	- 2.4	2.1	- 2.8	3.6	1.2	- .4	.3	- .4	.1	- .0	4	B	
U680	86.1	2.6	- 6.1	- 1.7	4.5	- 3.1	2.0	1.7	- 1.6	- 1.4	1.3	4	U	
U681	83.4	- .6	- 2.4	1.2	1.4	- 5.1	6.0	- 2.6	- .4	- 1.3	1.5	4	B	
U682	72.0	2.6	- 6.6	2.9	- .3	- 8.3	1.6	5.5	- 1.2	2.1	- 2.4	4	U	
U683	70.6	3.7	- 7.0	.6	2.0	- 2.2	2.5	3.2	- 4.3	- 1.0	1.2	4	B	
U684	62.2	5.0	- 8.5	- 2.1	4.3	- .6	5.1	- .8	- 3.9	3.1	- 2.3	4	U	
R161	46.9	- 1.7	-12.1	5.0	6.1	- 1.4	- 2.2	4.8	- 1.2	- 2.3	2.5	4	U	
U686	43.9	2.4	- 5.2	3.3	- 2.1	- 5.2	5.4	.9	- 3.2	2.3	- 2.3	4	B	
U687	29.7	4.0	- 4.6	.2	- .6	2.5	- .4	- .7	- .3	.8	- .6	4	U	
(Age 13)														
R201	98.4	.9	1.1	.4	- 2.3	- 3.1	1.3	1.3	- .0	.8	- .8	1	B	R101
R202	98.2	.5	- 1.7	- .2	1.3	- .4	.4	.8	- .6	.5	- .3	1	B	R103
R203	92.6	.5	- .6	2.8	- 2.5	- 1.8	.7	.1	.9	.0	.0	1	P	R106
R204	89.4	.9	- 4.3	2.7	- .6	- 2.7	3.4	1.6	- 2.4	2.2	- 2.8	1	B	R302
R205	85.7	5.8	-10.5	5.0	- 2.7	- .5	2.9	2.1	- 5.0	2.0	- 1.4	1	B	R130
R206	78.5	1.9	- 8.9	3.7	1.6	- 9.9	3.0	2.0	2.4	3.4	- 2.6	1	P	
R207	77.9	1.5	- 3.3	.6	.9	- 5.0	5.4	1.5	- 2.5	.2	- .0	1	B	
R208	74.0	1.3	- 2.5	- 2.0	4.2	- 1.3	4.6	2.4	- 4.8	1.5	- 1.6	1	P	
R209	65.1	1.5	- 1.3	1.9	- 1.9	- 9.6	5.6	.3	2.3	- .5	.5	1	P	
R210	63.0	7.7	- 7.4	- 1.3	.4	- 3.0	4.6	4.8	- 5.6	- 1.5	1.9	1	B	
R211	61.1	2.5	-10.3	5.4	- .4	- 4.0	3.8	- .9	.1	1.5	- 1.2	1	P	R419
R212	59.0	4.3	-10.2	4.8	- 2.8	- 5.7	4.7	2.7	- 2.2	- 1.7	2.1	1	P	R305 R403
R213	57.4	5.2	- 9.9	2.2	- .0	- 8.3	6.9	.8	- 1.6	- .8	.8	1	B	
R214	54.9	5.5	- 9.4	4.1	- 3.3	- 9.5	6.7	.1	.2	6.0△	- 7.3	1	P	
R215	53.7	- 1.3	- 7.2	6.8	- 2.5	- 9.6	2.4	2.4	2.4	2.6	- 2.9	1	B	R411
R216	50.9	6.0	- 2.4	.5	- 3.8	- 6.7	9.1	- .0	- 3.2	.5	- .3	1	P	
R217	48.4	- 2.9	6.7△	- .4	- 2.3	- 7.5	.6	4.3	.6	1.5	- 1.1	1	P	R413
R218	45.4	1.6	- 6.5	3.7	- .9	- 7.7	4.7	- .1	1.1	3.1	- 3.3	1	P	R317
R219	40.7	2.2	- 5.8	2.9	- 1.0	- 5.2	6.9	- .8	- 2.2	.1	.0	1	B	
R220	39.1	3.3	- 4.3	- 2.9	3.6	- 6.0	4.6	2.1	- 1.5	1.3	- .9	1	P	
R221	38.4	- .3	.6	- 1.2	1.5	- 9.7	3.0	1.7	2.4	- 1.3	1.3	1	P	R422
R222	38.4	- 7.8▽	.6	6.9	- .0	- 2.5	2.5	.6	- 1.2	1.0	- .9	1	B	R314
R223	36.2	- .4	- 1.6	.6	1.3	- 7.0	5.2	.8	- .6	1.6	- 2.5	1	B	R321
R224	33.9	- 2.3	- 2.9	2.9	1.6	- 2.2	6.7	.3	- 5.3	.6	- .2	1	P	
R225	31.7	3.1	- 7.7	- .6	4.2	- 7.5	6.0	2.6	- 2.9	1.1	- .8	1	B	
R226	27.4	- .4	- 2.1	4.7	- 2.2	- .8	- .8	3.8	- 2.2	1.6	- 1.2	1	P	R132
R227	25.9	1.0	4.3△	- 1.4	- 2.9	- 1.6	- .4	1.5	.4	1.9	- 2.3	1	B	R427
R228	26.0	- .2	- 6.1	5.4	.1	- 4.1	.3	2.5	.1	1.1	- 1.2	1	B	R425
U701	95.0	- .5	- .4	1.4	- .3	- 2.2	1.4	2.1	- 1.7	- .3	.5	1	B	U638
U702	94.7	.8	- 2.4	- .4	2.0	- 2.1	.0	1.6	.0	.3	- .1	1	B	U902
U703	93.8	- .5	- 2.8	2.7	.3	- 5.4	1.6	.2	3.0	- .9	.8	1	P	U910 U624
U704	93.6	1.7	- 4.4	.6	1.5	- .5	1.6	- 1.5	.4	.1	- .0	1	P	U623
U705	93.2	1.1	- 4.2	1.0	1.5	- .5	- 1.2	1.2	.6	2.9	- 2.2	1	P	U921

EX. NO.	NATL %	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F	OBJ	SCI. TYPE	OVERLAP EX. NO.
U706	85.6	1.5	- 2.7	2.9	- 1.7	- 4.3	1.4	.7	1.7	1.6	- 1.1	1	B	
U707	84.7	4.0	- 4.7	.2	- .5	- 7.5	6.1	- .5	.0	- 2.1	2.1	1	B	
U708	82.4	4.6	- 6.3	2.2	- 2.6	- 8.3	6.1	2.6	- 2.0	1.9	- 2.5	1	P	U632
U709	81.7	2.7	-15.1▽	5.4	2.1	- 4.9	4.9	- .0	- .8	1.6	- 1.8	1	P	U633
U710	79.0	.4	- 5.4	1.1	2.7	- 1.8	4.7	- .2	- 2.5	1.8	- 2.0	1	P	U908
U711	76.9	5.7	.5	1.1	- 8.3▽	- 3.6	1.8	1.8	- .9	.7	- .4	1	B	U906
U712	75.9	- .2	- 6.8	5.4	.8	- 6.5	3.3	- 1.4	3.8	.6	- .4	1	P	
U713	74.4	4.7	- 8.8	2.9	- .4	- 4.9	2.5	3.2	- 2.4	4.4	- 3.3	1	B	
U714	71.5	2.2	- 2.6	1.8	- 1.7	1.4	.9	1.8	- 3.5	- .0	.0	1	P	U808
U715	69.9	8.0	- 4.7	1.6	- 7.0▽	- 2.5	4.4	.8	- 2.8	2.8	- 3.5	1	P	
U716	67.9	3.3	- .3	.4	- 3.9	- .4	- .2	6.3	- 4.5	1.1	- 1.1	1	P	
U717	63.3	7.3	-11.6	1.3	1.4	- 1.9	3.2	4.4	- 5.9	3.6	- 4.1	1	P	
U718	61.9	- 3.3	2.2	7.5	- 6.7	-11.8	4.9	- .8	5.3	.7	- .3	1	B	U927
U719	61.8	6.0	- 8.0	1.0	- .5	.1	5.8	- 2.6	- 3.1	- .9	.8	1	P	U916 U642
U720	61.7	2.4	- 7.0	1.5	2.3	- 6.4	4.5	5.5	- 5.1	1.0	- 1.1	1	B	U914
U721	60.2	2.3	- 3.2	- 2.6	4.1	- .1	4.6	1.9	- 6.3	- 1.2	.8	1	P	
U722	58.9	- .1	- 3.6	3.1	- 1.2	- 5.2	- 1.1	4.2	1.2	1.3	- 1.3	1	B	
U723	58.7	- 2.1	- 6.3	6.9	- .5	- 5.1	3.6	1.0	- .8	.6	- .5	1	P	
U724	58.5	4.4	-12.3▽	1.8	4.1	- 5.4	9.0	- .3	- 4.9	- .1	- .0	1	B	
U725	58.4	- .0	- 5.3	1.3	2.9	- 5.0	10.6△	- .2	- 6.6	- 3.1	3.0△	1	P	
U726	56.8	1.8	-11.1	7.6	- 1.6	- 5.6	6.6	.2	- 2.6	- 2.3	2.2	1	P	U922
U727	53.5	2.2	- 3.6	- .6	1.4	- 6.1	2.8	4.6	- 3.7	- 1.4	2.2	1	B	
U728	53.3	7.4	- 3.8	3.2	- 8.5▽	-11.5	3.4	5.5	- .7	3.8	- 2.9	1	P	U810
U729	53.1	- 1.3	- .5	2.1	- 1.1	- 2.5	- 3.9▽	2.5	3.2	3.6	- 4.1	1	B	U818
U730	50.6	- .7	- 8.3	5.2	2.1	-11.9	.0	6.1	2.6	.9	- .6	1	B	
U731	49.8	2.1	- 4.9	3.8	- 1.3	- 9.7	6.5	- 1.3	3.3	.4	- .2	1	B	U928
U732	49.6	2.2	-13.1▽	6.4	1.9	- 5.8	5.5	- 2.2	1.2	2.3	- 1.7	1	P	U932
U733	48.0	- 3.2	- 3.8	7.0	- 3.8	- 8.2	2.4	- .8	4.1	4.0	- 4.5	1	P	U923
U734	47.6	1.2	- 6.1	1.9	1.5	- 3.3	3.3	- .0	- .7	2.2	- 2.0	1	P	
U735	45.6	3.4	- 7.5	5.9	- 4.1	- 7.7	- .1	5.9	- .2	4.7	- 3.6	1	P	
U736	44.4	.2	-10.1	4.6	4.0	- 4.5	- 1.8	5.7	- .6	1.0	- 1.3	1	B	U655
U737	42.6	.6	- 4.7	4.9	- 1.2	- 3.7	6.3	- 3.9	1.1	1.2	- .8	1	P	U940
U738	40.7	.0	1.8	.5	- 1.9	- .9	.2	- 1.1	1.9	.0	.0	1	P	U925
U739	38.8	2.3	- 1.6	3.2	- 4.1	- 6.5	1.3	4.7	- 1.2	1.6	- 2.1	1	P	U933
U740	36.8	.5	- 4.4	4.5	- 2.5	- 2.6	4.3	- 2.1	- .1	1.3	- 1.0	1	U	U930
U741	34.9	7.8	- 3.4	- 3.6	- 1.7	1.9	3.9	- .1	- 5.0	- .5	1.0	1	B	U924
U742	30.1	2.5	- 7.0	6.0	- 5.6	-10.0	4.1	- .9	3.9	3.0	- 3.4	1	P	
U743	29.0	- .6	- 5.4	1.8	3.7	- 4.4	1.5	2.7	- 1.0	2.7	- 2.0	1	B	U820
U744	28.5	3.2	- 4.7	.4	.5	- 3.6	- .2	7.7	- 4.8	1.1	- .8	1	P	U827 U931
U745	25.2	1.1	- .7	.2	- .8	.3	.5	- .4	- .1	.3	.2	1	P	U831 U938
U746	21.1	- .5	- 3.9	2.8	.5	- 2.0	3.8	- .9	- 1.0	.6	- .4	1	P	U830 U939
U747	8.1	.3	.8	.6	- 1.5	.8	- .7	1.7	- 1.5	.6	- .4	1	P	U843
R229	92.2	2.0	- 3.3	1.9	- 1.0	- .2	1.2	- .6	- .1	- .8	1.0	2	P	R145
R230	83.0	- .1	-10.1	4.6	4.2	- 6.4	3.3	1.2	1.1	- 1.1	1.0	2	P	R436
R231	81.0	6.7	-11.5	3.8	- .6	- 2.6	3.1	5.5	- 6.4	.0	.2	2	P	R150

EX. NO.	NATL %	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F	OBJ	SCI. TYPE	OVERLAP EX. NO.
R232	75.2	2.2	- 2.5	.7	- 1.1	- 1.9	.8	.3	.4	.3	- .2	2	P	
R233	70.8	6.4	-13.6▽	1.8	2.8	- 4.7	7.7	- .1	- 4.0	1.9	- 1.5	2	B	
R234	62.5	8.3	-14.1▽	3.1	- 1.3	- 1.2	- 1.8	4.5	- 2.0	6.1△	- 4.2	2	P	R341 R438
R235	62.1	3.2	- 8.0	5.6	- 3.9	- 7.1	3.9	4.2	- 2.2	3.8	- 5.0	2	P	R439 R340
R236	60.7	6.7	-14.3▽	8.5	- 3.0	- 6.8	8.7	2.8	- 6.0	2.1	- 1.9	2	B	
R237	35.4	.5	1.7	- 1.5	.0	- 1.4	- 5.5▽	5.3	2.1	4.6	- 4.4	2	P	R344 R441
R238	35.7	5.5	- 6.3	3.8	- 4.8	- 6.0	5.6	2.7	- 4.4	3.1	- 2.3	2	P	
R239	27.4	5.1	- 8.3	1.4	- .6	- 6.5	5.0	3.1	- 3.9	- .6	.8	2	B	R442
R240	4.2	1.9	- 1.8	.3	- .8	1.4	- .6	1.7	- 2.1	.7	- .4	2	P	R348 R445
U748	92.9	3.5	- 8.5	3.5	- 1.5	- 4.9	4.1	.3	- .4	.8	- .8	2	P	U952
U749	90.6	2.7	- 3.9	- 1.9	2.6	- 2.9	2.8	2.3	- 3.3	.0	.0	2	B	
U750	79.3	5.5	- 9.3	- .1	2.6	- 4.5	4.5	- .7	- .3	1.9	- 1.6	2	B	
U751	73.4	3.9	- 2.7	- 3.1	2.0	- 8.5	7.1	3.5	- 3.4	1.4	- .9	2	P	
U752	72.3	- 3.1	- 7.6	8.6	- .5	-12.8	6.7	3.2	.6	.1	- .0	2	P	U954
U753	69.9	- 3.8	- 5.5	7.7	- .5	-13.8▽	9.5	- 1.6	3.4	- .4	.7	2	P	
U754	63.1	7.9	- 6.8	- .6	- 1.4	- 5.1	5.8	5.8	- 7.5	1.8	- 2.0	2	P	
U755	59.2	2.9	-12.6▽	5.2	1.1	- .1	- 3.0▽	2.5	.4	7.7△	- 5.3	2	P	U852 U955
U756	55.0	6.0	-12.5▽	5.1	- .3	- 8.1	7.1	4.5	- 5.4	.6	- .6	2	B	
U757	52.4	- .5	- 4.0	2.3	1.1	- 4.4	1.8	- .1	1.9	1.5	- 1.3	2	P	
U758	50.4	14.3△	-14.6▽	- 3.8	2.0	- 2.2	9.2	- 3.4	- 4.0	1.3	- 1.0	2	P	U856 U956
U759	46.9	4.6	- 9.4	2.9	1.0	- 6.1	12.3△	- 1.9	- 5.1	.5	- .3	2	U	
U760	42.9	14.8△	-13.8▽	- 4.2	1.3	- 2.8	13.3△	- 5.1	- 5.9	2.6	- 2.7	2	P	U854 U957
U761	41.2	3.2	-10.5	4.0	1.8	- 4.6	5.8	2.8	- 4.8	.1	- .0	2	B	
U762	22.3	- 3.6	2.8	3.3	- 1.9	- 4.9	- 5.2▽	3.6	4.9	2.1	- 1.5	2	P	U862 U963
U763	16.6	2.7	- 1.6	1.2	- 2.9	- 6.5	.7	1.2	2.9	2.7	- 1.9	2	P	U859 U960
U764	12.9	2.2	- 5.5	- 1.4	4.4	.2	2.1	- .1	- 2.0	- 3.0	3.6△	2	P	U860 U962
U765	12.7	2.4	- 6.2	- 1.2	4.6	.4	2.3	.0	- 2.6	- 2.8	3.8△	2	P	U863 U964
U766	11.1	3.8	- 6.6	3.3	- 2.6	- 4.7	6.6	.6	- 3.4	2.0	- 1.5	2	P	U861 U961
R241	79.0	5.9	-10.7	1.9	- .0	- 5.5	4.2	2.0	- 1.6	1.9	- 2.3	3	U	R349
R242	72.6	4.1	- 8.4	- .0	2.5	- 7.0	7.0	- .5	- 1.3	1.9	- 2.2	3	U	R157
R243	68.8	- 3.8	.4	5.0	- 1.8	- 4.5	.8	1.1	1.4	.2	- .0	3	P	R350 R446
R244	56.4	6.3	- 9.2	3.8	- 2.2	- 6.3	6.2	5.2	- 6.4	1.2	- 1.1	3	U	R158
U767	89.0	- .5	- 1.0	4.9	- 4.2	- 5.1	.3	- .4	4.1	- 1.0	1.2	3	U	
U768	67.7	.3	- 7.1	6.0	- 1.3	- 4.7	4.3	- 2.5	2.1	- 3.3	3.2△	3	U	
U769	66.5	- 2.7	- .8	.8	3.0	- .1	- 3.1▽	2.1	1.4	- .6	.7	3	U	
U770	45.9	1.8	- 4.2	4.9	- 2.7	- 4.6	4.5	- 3.0	2.7	- 1.6	1.3	3	U	U965
R245	93.5	- .2	- .3	- 1.6	2.8	- 1.6	.5	3.0	- 2.7	.6	- .6	4	U	
R246	90.7	2.4	- 5.8	1.9	- .0	- 6.4	4.8	.3	- .4	.1	.0	4	U	
R247	7.6	- .4	3.4△	- 2.3	.7	.6	- 2.1	- .0	1.7	- .6	.8	4	U	
U771	93.4	- .4	- 2.2	1.5	1.1	- 2.1	.3	2.9	- 1.5	.1	.2	4	B	
U772	92.0	- 1.3	- .2	1.2	.3	- 2.7	2.0	.7	- .5	.3	- .1	4	U	
U773	37.9	4.6	-12.0▽	5.4	- 1.8	- 3.4	6.4	- .4	- 2.6	.6	- .4	4	U	
U774	19.0	1.2	4.3△	- 2.9	- 1.1	- 1.2	.1	- 3.0	4.2	1.9	- 1.6	4	U	
U775	5.3	1.8	- .5	.7	- 2.3	.4	1.5	1.1	- 2.7	.3	- .1	4	U	

EX. NO.	NATL %	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F	OBJ	SCI. TYPE	OVERLAP EX. NO.
(Age 17)														
R301	97.6	- .6	- 1.9	1.2	1.0	- 2.7	1.4	1.5	- .4	.3	- .3	1	B	R401
R302	93.8	- 2.9	.3	.9	2.3	- 3.1	3.5	1.7	- 3.8	- .6	.7	1	B	R204
R303	92.2	- 3.9	2.1	2.4	.2	- 4.3	- 1.0	.1	3.9	.8	- .6	1	P	
R304	88.4	1.8	- .6	- 2.4	1.9	- 1.0	1.4	2.1	- 3.0	.8	- .6	1	B	
R305	77.5	2.3	-10.7	5.9	- .7	-11.5▽	6.4	3.5	- 2.0	.2	- .1	1	P	R403 R212
R306	66.9	3.3	-14.3▽	3.2	4.9	- 7.4	2.8	1.2	.5	2.9	- 2.8	1	B	R417
R307	68.0	6.3	- 4.7	- 1.3	- .5	2.9	4.8	- 2.3	- 4.5	- .3	.4	1	P	
R308	65.2	- 3.7	.9	3.9	- 2.0	- 3.7	1.0	2.2	.1	.1	- .1	1	P	R410
R309	66.0	.9	-14.5▽	2.6	9.1△	- .1	4.4	1.2	- 5.1	3.3	- 2.6	1	B	R409
R310	68.1	6.9	- 3.1	- 1.3	- 2.7	- 9.0	.9	3.7	1.1	3.1	- 2.3	1	P	
R311	63.7	8.1	- 5.6	- 1.6	- 2.1	- 3.4	7.9	- 1.3	- 6.0	2.4	- 2.3	1	P	R426
R312	58.9	2.0	- 6.7	- 1.4	6.1	- 1.8	4.7	4.7	- 7.3	1.6	- 1.2	1	P	
R313	56.5	2.0	-10.8	2.4	4.6	- 1.7	3.2	- 4.5	2.7	2.4	- 2.4	1	P	
R314	56.0	1.6	- 9.0	3.6	1.6	2.2	.5	3.2	- 5.1	- 2.2	2.3	1	B	R222
R315	56.9	1.8	-10.1	3.2	3.0	- 4.8	4.5	1.8	- 3.5	1.6	- 1.2	1	P	
R316	54.0	6.7	-12.2	- 2.7	7.8	- 4.9	6.4	4.4	- 8.8	3.6	- 3.2	1	B	R406
R317	54.9	.5	- 8.1	1.2	5.5	.1	- 2.7	4.7	- 1.4	4.8	- 3.8	1	P	R218
R318	51.6	7.0	- 7.8	- 4.0	4.2	- 2.9	2.4	7.1△	- 7.9	1.0	- .7	1	P	
R319	54.6	- 3.9	1.8	.2	2.0	- 1.6	2.5	- 1.4	.3	.1	- .0	1	P	R418
R320	51.6	5.0	-14.9▽	1.6	5.6	-10.7▽	5.5	3.0	- 2.4	8.4△	- 8.3	1	P	R415
R321	49.6	- 1.9	- 8.3	1.8	7.4	- 6.3	2.2	1.6	.3	3.0	- 2.2	1	B	R223
R322	49.3	- .5	.8	- 1.3	2.0	4.9	- 1.1	- 6.1▽	4.6△	.5	- .5	1	B	R421
R323	48.5	- .4	- 3.0	- 1.0	3.7	-10.9▽	3.5	.2	3.0	4.8	- 3.9	1	P	R408
R324	45.3	9.9	-12.7	- 1.9	2.3	- 6.7	5.5	.6	- 2.6	1.9	- 1.4	1	P	
R325	40.7	2.4	- 5.9	1.2	.9	2.7	- 2.4	6.9	- 5.7	- .1	.2	1	B	R420
R326	35.0	9.8	- 8.1	- 3.5	1.9	- 7.3	8.0	.3	- 2.5	5.2	- 5.3	1	P	
R327	34.5	10.0△	- 3.5	- 1.8	- 4.7	- 1.2	4.2	- 4.6	1.2	- .0	.1	1	P	
R328	31.4	- 1.1	- 7.1	.6	7.3	5.8△	- 1.0	3.9	- 6.6	.3	- .1	1	B	R431
R329	29.9	2.1	- 3.1	- 1.2	2.0	- 3.7	4.1	- 1.1	- .7	2.8	- 2.2	1	P	R430
R330	28.9	2.1	- 2.9	.1	.5	- 3.8	1.8	5.6	- 4.2	- 1.5	1.7	1	B	R416
R331	23.3	3.3	- 5.3	3.6	- 2.7	- 3.8	1.5	1.8	- .2	3.0	- 3.1	1	P	
R332	20.5	4.1	- 4.2	- .8	- .1	1.2	4.1	- 2.0	- 3.0	2.4	- 1.9	1	P	R433
R333	16.3	6.2	- 3.0	- .9	- 1.9	- 2.6	1.6	- .9	1.5	1.9	- 1.9	1	P	
R334	15.9	- .6	- 1.3	- 2.7	6.1	.0	3.1	- 2.3	- .9	1.1	- .8	1	B	
R335	7.3	4.6	- 2.8	- .8	- .4	1.6	1.3	- 1.3	- .9	- .4	.6	1	P	R434
R336	6.1	.6	1.6	- 1.7	.2	- .2	- .1	.7	- .1	1.0	- .7	1	P	
R337	2.6	.2	- .6	1.0	- .7	- .5	.8	.5	- .7	.5	- .4	1	P	
R338	2.6	.2	.7	- .2	- .5	- .3	.1	.7	- .4	.6	- .5	1	P	
U801	96.6	.3	- 2.3	1.3	.1	- 2.7	2.1	.2	- .4	- 1.7	1.5	1	B	U901
U802	93.9	.0	- .7	1.2	- .8	.3	3.0	.6	- 4.3	- .9	.9	1	P	
U803	89.2	2.9	-13.2▽	3.3	4.2	- 1.8	1.7	1.4	- 2.1	2.9	- 2.7	1	B	U907
U804	84.7	3.9	- 6.5	3.5	- 2.2	- 1.9	1.2	5.0	- 3.9	.9	- .7	1	B	
U805	83.0	4.0	- 4.5	- 2.4	2.7	- 3.5	7.4	- .2	- 6.3	.3	- .1	1	B	U917
U806	78.5	- 4.7	- .6	1.9	3.7	- 3.2	- .7	.3	2.6	1.7	- 1.3	1	P	
U807	77.6	3.4	- .1	- 2.5	- .1	- 4.2	.8	2.0	.1	3.4	- 2.6	1	P	

EX. NO.	NATL %	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F	OBJ	SCI. TYPE	OVERLAP EX. NO.
U808	76.1	3.4	- 2.4	- 3.2	2.9	.0	7.9	1.8	-11.1▽	- .7	.7	1	P	U714
U809	72.2	7.5	-12.0	6.2△	- 3.4	- 3.8	4.4	7.0△	- 7.1	.4	- .3	1	B	U905
U810	71.3	6.5	- 7.4	.2	- .6	- 9.2	11.4△	1.5	- 8.7	- .2	.3	1	P	U728
U811	71.2	1.2	- 7.8	2.0	3.7	- 6.9	- .4	5.8	.4	4.4	- 5.1	1	P	
U812	68.9	- 2.5	- 7.1	4.3	3.5	.8	2.9	- .8	- 2.4	1.7	- 1.7	1	B	U950
U813	67.1	4.0	- 9.0	2.6	.9	-14.4▽	8.1	.3	2.6	5.8△	- 6.0	1	P	U919
U814	66.0	- 4.1	- 4.1	- 1.0	9.3△	- 1.4	1.6	5.4	- 5.8	3.2	- 2.7	1	B	
U815	63.6	1.3	- 4.2	- 1.3	4.2	- 6.3	1.9	4.5	- 2.3	4.0	- 3.3	1	P	
U816	61.2	2.1	3.3△	- 1.5	- 3.3	-11.1▽	2.7	3.4	1.0	4.1	- 4.0	1	P	
U817	60.6	3.0	-11.0	5.5	- .8	1.8	- 1.1	4.9	- 4.3	- 1.3	1.4	1	P	
U818	59.8	2.9	- 1.6	- 4.2	4.3	- 4.2	1.9	6.9	- 4.7	- 1.1	1.1	1	B	U729
U819	57.7	2.8	- .2	- 3.1	1.6	- 7.6	4.1	7.9△	- 4.8	2.0	- 2.2	1	P	
U820	55.3	3.0	-13.0▽	- .5	9.2△	- 4.9	2.6	3.8	- 3.3	2.1	- 1.7	1	B	U743
U821	54.8	9.6	- 3.9	- 1.6	- 5.1▽	-10.9▽	1.3	3.2	2.6	3.4	- 3.0	1	P	
U822	53.9	8.4	-12.7	- .2	1.8	- 2.0	4.3	- .1	- 3.7	1.9	- 1.8	1	P	
U823	47.0	11.2△	-10.6	- 1.6	- .6	- 6.4	4.3	5.6	- 6.5	4.0	- 3.6	1	P	
U824	46.5	4.1	- .1	- 1.9	- 2.0	- 4.3	10.4△	- 5.5	- 3.9	.8	- .7	1	B	
U825	43.5	.8	- 4.5	- .2	3.9	- 2.3	6.8	.7	- 4.5	2.4	- 2.6	1	P	
U826	43.4	4.2	-12.6	5.1	1.4	1.0	8.6	- .2	- 7.8	- 3.9	3.7△	1	B	U920
U827	43.0	7.3	- 7.0	- 2.6	.7	- 2.3	3.9	- 2.2	- .3	2.3	- 1.9	1	P	U931 U744
U828	39.8	2.7	- 9.2	8.6△	- 6.2▽	- 5.8	.7	- .8	3.8	4.2	- 3.1	1	P	U929
U829	35.4	5.0	- 7.0	1.3	- 1.4	- 2.2	- 2.5	9.7△	- 4.5	1.6	- 1.5	1	P	
U830	31.3	- 1.4	- 1.9	- 3.3	8.3△	- 4.3	9.8△	- 1.7	- 6.9	- .2	.3	1	P	U939 U746
U831	30.0	.3	- 7.5	2.9	2.6	.3	3.6	- 2.8	- .8	3.1	- 3.1	1	P	U938 U745
U832	27.6	.0	- 2.7	- 2.1	5.6	- 7.0	- .9	4.6	1.0	6.7△	- 5.5	1	P	U941
U833	27.6	- 2.9	- 5.5	4.3	2.9	- 1.1	- 1.8	4.9	- 1.8	.2	- .1	1	P	
U834	26.8	1.9	- 5.2	2.1	.6	2.5	2.9	- 1.1	- 3.1	- .3	.4	1	P	
U835	25.6	2.6	.6	- 2.3	- .1	5.6△	- 1.5	- 1.6	- .1	1.6	- 1.3	1	B	
U836	24.1	4.2	- 7.2	.8	.8	- 4.0	1.6	1.0	.1	3.2	- 2.5	1	P	U934
U837	23.2	- 1.7	4.0△	- .1	- 1.2	- 2.2	- 1.2	.3	2.6	2.2	- 1.8	1	P	
U838	23.2	6.0	1.2	- 5.7	- .2	- 4.7	5.6	- 1.6	- 1.6	6.1△	- 5.5	1	P	
U839	21.0	- .3	- 3.5	1.7	1.4	.7	.0	.5	- .8	1.2	- .9	1	B	U944
U840	20.5	- 3.1	6.4△	- 3.3	2.5	- 3.5	- .0	- .7	3.4	- .0	.1	1	P	U943
U841	18.6	2.5	5.7△	- 5.0	- 1.1	- .3	- 3.2	2.4	1.3	1.2	- .9	1	P	
U842	17.3	- .0	- 5.7	1.4	3.7	1.1	- .5	3.1	- 3.0	2.6	- 2.0	1	B	U945
U843	15.7	- .5	- 5.9	4.2	1.1	- .8	- .9	- .7	2.1	.4	- .2	1	P	U747
U844	15.7	1.2	- 2.5	- 1.0	2.5	- 1.2	- 1.3	2.5	- .2	1.5	- 1.0	1	P	U946
U845	14.8	.4	- .1	1.1	- 1.6	- .2	2.8	2.0	- 4.6	1.2	- 1.0	1	B	U949
U846	12.7	- 1.0	- 2.6	- 1.0	5.4	- 1.5	.9	5.5	- 4.7	.9	- .6	1	P	U947
U847	12.0	3.7	- 5.9	2.8	- 2.7	- 3.4	1.1	.2	.8	.8	- .7	1	P	
U848	11.1	2.7	.8	- .8	- 2.1	1.5	- .7	- .3	.1	- 1.3	1.4	1	B	U942
U849	7.4	3.3	- 1.0	- 1.4	- .3	1.2	- 1.8	.3	.4	2.0	- 2.2	1	P	U948
U850	4.9	- .1	- 3.2	2.7	- .4	1.3	- .0	.5	- 1.2	.4	- .4	1	B	
U851	3.6	2.5	- .3	- 1.8	.3	.3	2.3	.0	- 2.1	.8	- .8	1	P	
R339	84.6	-4.5	-1.5	2.9	2.3	-8.6▽	2.8	1.7	1.2	5.0	-4.9	2	P	

EX. NO.	NATL %	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F	OBJ	SCI. TYPE	OVERLAP EX.	NO.
R340	80.0	- .0	- 5.3	2.1	2.3	- 2.1	3.4	1.8	- 4.4	1.4	- 1.4	2	P	R235	R439
R341	74.9	9.0	-10.4	- 4.7	5.0	- 4.5	7.5	- 2.6	- 2.7	5.5Δ	- 5.9	2	P	R234	R438
R342	65.8	3.6	-12.4	4.6	2.6	- 3.8	9.5Δ	.9	- 5.9	1.6	- 1.7	2	B	R440	
R343	56.7	- .3	- 7.8	- .3	7.5	3.2	- .3	- 1.0	- .7	- 1.0	1.0	2	P		
R344	55.3	- .2	- 5.3	3.1	.2	- 5.2	- 4.9▽	4.1	4.5Δ	4.5	- 4.2	2	P	R237	R441
R345	39.6	5.7	.6	- 4.5	- 1.1	- 7.8	5.8	5.6	- 7.1	1.5	- 1.0	2	U	R443	
R346	31.1	4.5	- 9.5	1.9	2.4	3.3	4.8	- 2.5	- 4.2	2.4	- 2.6	2	P	R444	
R347	17.8	5.6	- 3.6	- .7	- 1.7	- 4.1	1.3	1.9	- .4	1.0	- .6	2	B		
R348	11.2	7.3	- 9.1	- 1.7	2.0	.6	3.0	- .0	- 3.7	5.6Δ	- 6.1	2	P	R240	R445
U852	73.1	8.0	- 8.7	- 3.9	3.8	- 3.6	7.1	- 2.2	- 3.1	5.8Δ	- 6.2	2	P	U755	U955
U853	65.1	5.5	-10.0	.9	1.4	- 3.2	2.2	9.0Δ	- 9.2▽	3.6	- 3.4	2	P		
U854	64.1	- 3.9	- 6.5	- .0	9.5Δ	- 9.7	.3	8.7Δ	- 3.0	2.8	- 2.5	2	P	U760	U957
U855	62.8	5.3	- 9.4	3.4	- .6	- 2.2	5.5	5.9	- 8.3	- .8	.8	2	U	U958	
U856	60.1	1.1	- 9.4	1.1	5.1	- 8.2	2.6	1.9	.5	- 1.2	1.2	2	P	U758	U956
U857	56.6	- .5	- 6.0	- .0	6.5	- 6.0	8.8	.7	- 7.5	.1	- .0	2	B	U959	
U858	49.6	3.3	-11.0	.0	5.8	- 6.5	6.0	- .3	- 1.1	5.2	- 4.5	2	U		
U859	35.0	4.5	- 6.3	- 4.8	6.6	- 3.4	4.4	- 1.1	- 1.4	6.3Δ	- 6.8	2	P	U763	U960
U860	30.1	- 4.3	- 2.0	.4	5.6	- 4.3	1.0	1.0	.7	2.4	- 2.1	2	P	U764	U962
U861	29.2	10.9Δ	-15.4▽	- 3.1	4.8	- 3.3	3.7	- 1.1	- .5	6.8Δ	- 7.3	2	P	U766	U961
U862	25.4	3.4	.4	2.3	- 6.6▽	- 5.6	4.0	1.5	- 2.1	1.7	- 1.7	2	P	U762	U963
U863	24.8	1.5	- 9.7	1.7	4.3	.8	.0	- 1.4	1.0	- .9	.9	2	P	U765	U964
U864	21.8	2.5	- 3.0	- 1.5	1.8	- 1.3	.4	1.0	- .4	4.7	- 3.9	2	P		
U865	20.7	2.6	- 4.6	3.2	- 2.1	5.1Δ	- .3	- 1.9	- 1.3	2.9	- 3.0	2	P		
R349	91.3	1.0	- 3.9	.1	2.2	- 2.6	5.3	- .5	- 4.1	- 1.0	.9	3	U	R241	
R350	72.0	2.4	- 7.0	4.1	- .8	- 3.0	.4	- 1.0	2.5	- .8	.9	3	U	R446	R243
R351	27.6	6.5	- 3.6	.3	- 3.9	- .2	- .2	.3	.2	2.0	- 1.7	3	P		
U866	30.6	5.3	- 8.7	- .5	3.9	- .3	4.2	3.3	- 6.2	1.7	- 1.9	3	U	U966	
U867	18.9	- 1.3	5.4Δ	- .8	- 1.9	- 1.5	4.3	1.0	- 5.3	- 1.5	1.8	3	U	U967	
U868	6.1	5.8	- 2.6	- 2.1	- 1.6	- 2.2	4.2	- .0	- 3.5	2.2	- 2.1	3	U		
R352	79.4	3.6	- 7.3	.7	1.8	- 1.6	4.9	.2	- 3.6	- .4	.4	4	U		
R353	73.8	5.9	-14.3▽	3.1	3.9	- 5.4	9.0Δ	- 1.6	- 2.9	.1	- .0	4	U	R448	
R354	15.9	- 3.6	- .2	1.1	2.8	- 2.5	2.0	1.9	- 2.0	- .1	.1	4	U	R449	
U869	9.0	1.8	- .5	- .9	.1	- .2	3.3	- 1.4	- 1.1	.5	- .5	4	U	U969	
U870	5.0	.9	.5	- .7	- .4	- .4	- .0	1.2	- .7	2.0	- 1.7	4	U	U970	
(Adult)															
R401	95.4	2.4	- 6.0	- .7	2.3	- 3.1	4.2	.5	- 4.7	1.1	- .9	1	B	R301	
R402	91.2	1.1	- 8.4	1.7	3.4	- 3.5	2.7	.1	- 1.5	- 1.8	1.7Δ	1	B		
R403	84.8	- 1.3	- 8.3	.7	7.5	- 5.5	1.5	4.2	- 2.6	4.9	- 4.4	1	P	R212	R305
R404	78.8	2.0	-13.1	2.5	4.6	- 1.8	4.4	- 5.9	1.7	- 2.0	2.0Δ	1	B		
R405	70.6	- 5.0	- 6.9	10.0Δ	- 2.5	-11.1	9.0	2.6	- 2.7	- 2.2	1.9Δ	1	B		
R406	69.6	3.5	-10.7	- 2.0	7.5	- 6.9	11.2	- 1.2	-11.9▽	- 2.4	2.3Δ	1	B	R316	
R407	68.3	3.5	- 5.2	1.6	- 1.7	-14.9▽	12.7	- 1.4	- 4.2	- 1.2	1.2Δ	1	B		
R408	64.4	- .7	- 3.7	- .5	5.2	- 5.5	- .1	1.0	4.3	16.6Δ	-15.1	1	P	R323	
R409	63.1	4.6	-12.5	- .1	4.9	- 6.0	13.4Δ	- 3.2	-15.2▽	2.5	- 2.3	1	B	R309	

EX. NO.	NATL %	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F	OBJ	SCI. TYPE	OVERLAP EX. NO.
R410	62.1	5.8	.1	- 3.1	- 3.5	- 6.2	5.2	- .8	- 2.4	13.5Δ	-12.1	1	P	R308
R411	62.3	- .2	- 6.5	1.2	4.3	- 8.3	12.0	- 7.0	- 6.4	2.6	- 2.3	1	B	R215
R412	59.9	4.2	-10.7	.4	3.1	- 3.4	5.8	- 1.3	- 5.6	- 1.6	1.5Δ	1	B	
R413	60.0	4.7	- 5.9	- .2	- .1	- 4.0	- .1	6.2	- 3.4	17.1Δ	-15.7	1	P	R217
R414	57.0	- 2.3	- .5	2.8	- .1	.3	- 2.4	3.6	.0	5.2	- 4.6	1	P	
R415	55.8	5.3	- 8.1	2.9	- 4.0	- 7.7	5.8	.4	- 3.7	15.4Δ	-14.1	1	P	R320
R416	55.4	2.3	- 5.7	- 2.5	5.1	-12.8	8.6	2.3	- 6.1	- 6.8	6.4Δ	1	B	R330
R417	55.3	6.2	- 2.5	- 4.8	.6	-15.9▽	9.9	- 2.2	.2	5.9	- 5.4	1	B	R306
R418	51.4	.7	- 1.9	.1	.6	2.2	- 1.9	3.7	- 3.3	-10.7	10.3Δ	1	P	R319
R419	49.3	4.3	- 6.5	- 1.3	2.4	- 6.7	6.5	3.4	- 6.3	8.8	- 8.1	1	P	R211
R420	44.5	13.7Δ	-10.7	- 6.1	1.2	.3	3.3	.9	- 6.5	-13.1	12.2Δ	1	B	R325
R421	45.1	- 3.6	- 1.5	- 1.9	9.5	- .3	- 3.9	6.8	- 2.0	7.0	- 6.3	1	B	R322
R422	42.2	- .1	-16.0	5.2	4.8	- 3.3	2.0	- .7	1.2	9.7	- 8.9	1	P	R221
R423	41.9	2.5	-17.2	- .6	10.6	3.4	- 3.0	1.1	.4	9.6	- 8.8	1	B	
R424	40.3	5.0	- 2.0	- .2	- 4.3	- .8	3.4	- 5.0	1.4	.4	- .2	1	B	
R425	39.1	- 2.3	- 3.7	- 2.7	10.1	.2	4.2	3.2	-11.2	6.2	- 5.6	1	B	R228
R426	36.0	- 1.0	- 5.4	5.9	- 2.6	- .1	7.6	2.7	-10.1	7.8	- 6.4	1	P	R311
R427	35.6	2.2	- 1.7	- 3.1	2.6	.9	1.4	.4	- 3.8	1.4	- 1.1	1	B	R227
R428	30.7	- .2	.2	2.6	- 3.5	1.1	- .7	- 2.3	3.7	5.2	- 4.5	1	B	
R429	26.0	3.1	-11.8	- 2.2	8.7	5.0	3.2	- .6	- 9.6	9.0	- 8.1	1	P	
R430	22.3	- .1	- 3.8	1.3	1.8	5.1	- .3	2.9	- 7.4	11.8Δ	-10.8	1	P	R329
R431	21.3	1.0	2.6	- 3.4	1.0	- 4.0	1.8	6.4	- 7.3	.1	.0	1	B	R328
R432	15.9	.0	- .5	1.4	- 1.7	4.5	3.2	- 1.5	- 4.9	7.5	- 6.1	1	P	
R433	15.1	- .5	- 7.4	- 1.7	9.9	4.0	7.4	- 6.7	- 7.5	7.0	- 6.3	1	P	R332
R434	3.0	- .4	.8	.0	- .0	1.1	- .3	.0	- .2	.7	- .5	1	P	R335
U901	97.1	- .2	- .7	1.6	- 1.2	- 2.9	1.3	.7	- .3	- .3	.7	1	B	U801
U902	95.8	.1	- 2.6	1.0	.8	- .8	1.1	- .3	- .6	1.2	- .7	1	B	U702
U903	91.3	- .3	- .1	- .2	1.0	- 8.2	1.6	4.5	.0	- .2	.3	1	P	U622
U904	88.3	1.0	- 9.6	.8	5.7	1.2	1.1	- 2.3	- .0	4.6	- 3.9	1	P	U639
U905	88.1	.8	- 6.5	3.7	- .5	- 6.8	6.3	- 2.9	- 1.2	- 4.5	4.2Δ	1	B	U809
U906	87.6	- .7	- 5.0	3.3	1.2	- 5.6	3.7	- 3.1	3.0	5.9	- 5.3	1	B	U711
U907	84.8	- 1.1	- 2.9	.1	3.9	- 4.0	3.7	- 1.0	- 1.1	.1	- .0	1	B	U803
U908	83.6	4.2	- 9.3	1.2	1.8	- 2.0	6.7	- 5.5	- 2.5	7.1	- 6.4	1	P	U710
U909	83.3	.8	-12.0	6.2	- .7	-13.4	4.5	4.8	- .3	- 1.3	1.3Δ	1	P	U649
U910	81.6	3.0	- 9.7	- .6	5.4	- 2.7	.9	3.1	- 2.4	- 2.1	2.0Δ	1	P	U624 U703
U911	81.4	2.8	- 2.4	2.1	- 4.4	- 9.2	2.1	3.2	1.2	3.3	- 3.0	1	P	U620
U912	81.1	- 5.3	- 2.3	6.6	- 1.4	- 6.4	3.7	1.8	- .3	6.0	- 4.9	1	P	U629
U913	77.6	5.5	-20.5▽	1.6	5.4	- 1.3	3.0	- 3.8	1.8	12.2Δ	-11.1	1	P	U634
U914	75.7	6.4	- 9.7	- 3.6	5.0	- 1.7	9.8	- 9.5	- 3.3	2.8	- 2.6	1	B	U720
U915	74.0	- 5.4	1.6	1.5	3.6	- 4.0	1.4	2.4	- .6	12.5Δ	-10.3	1	P	U637
U916	73.1	8.7	- 3.4	- 5.4	- .1	- 4.7	5.2	- .8	- 2.7	.9	- .7	1	P	U642 U719
U917	71.8	1.6	- 7.4	3.3	.1	- 6.5	5.2	.3	- 3.4	3.0	- 2.5	1	B	U805
U918	65.0	2.4	- 7.0	1.0	1.8	- 2.2	1.6	3.6	- 5.3	8.4	- 7.6	1	P	U636
U919	64.7	- .4	.2	3.4	- 3.3	- 8.1	.9	5.5	- .1	9.4	- 8.5	1	P	U813
U920	64.3	3.4	-18.3▽	4.0	3.2	.8	4.0	2.7	-11.6	- 7.7	7.2Δ	1	B	U826

EX. NO.	NATL %	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F	OBJ	SCI. TYPE	OVERLAP EX.	NO.
U921	62.9	8.4	- 3.2	- 2.0	- 4.4	7.3	- 3.0	5.1	- 8.0	1.7	- 1.3	1	P	U705	
U922	62.8	- 2.2	- 7.0	5.2	.6	- 1.1	6.8	- 7.0	- 1.3	13.9Δ	-12.7	1	P	U726	
U923	57.2	- 8.9	- .9	2.7	9.0	- 8.3	1.2	2.7	2.8	18.5Δ	-16.9	1	P	U733	
U924	56.2	4.2	-18.0▽	3.5	6.0	5.8	1.7	- 5.4	- 2.4	3.7	- 3.3	1	B	U741	
U925	55.3	- .2	- 1.8	2.0	- .1	- 5.8	2.8	- 2.4	3.6	9.6	- 8.7	1	P	U738	
U926	52.3	2.5	- 7.9	6.5	- 5.8	1.7	1.8	- 1.2	- 1.6	8.7	- 7.2	1	P	U640	
U927	50.3	3.5	- 7.6	- 3.2	6.4	- 1.2	8.9	- 1.5	-12.7▽	2.9	- 2.6	1	B	U718	
U928	49.6	- 7.7	- 4.1	2.0	10.4	- 1.8	4.5	- 4.7	.0	9.7	- 8.9	1	B	U731	
U929	49.1	- .4	-13.6	6.8	1.1	- 6.3	.7	4.1	- .2	9.2	- 8.4	1	P	U828	
U930	49.0	- 1.9	- 7.4	.6	8.2	- 8.3	4.7	3.0	- 3.9	8.9	- 8.0	1	U	U740	
U931	48.7	9.3	- 6.3	- 4.5	- .5	- 2.3	5.8	- 3.2	- 3.9	7.4	- 6.4	1	P	U744	U827
U932	43.6	6.1	- 5.6	- 3.7	2.8	1.2	3.1	.4	- 6.8	11.6Δ	-10.6	1	P	U732	
U933	36.4	8.8	-10.5	- 3.0	1.8	1.8	2.9	- .8	- 5.7	6.3	- 5.7	1	P	U739	
U934	15.2	- .6	- 7.6	.2	6.7	- .0	3.9	- 3.4	- 1.8	9.3	- 8.4	1	P	U836	
U935	33.7	10.8	- 8.5	- 2.2	- 2.1	- 2.2	5.7	3.0	-11.3	11.8Δ	-10.7	1	P	U657	
U936	20.3	7.0	- 9.4	.7	- 1.0	2.2	1.5	.0	- 4.7	2.5	- 2.2	1	B		
U937	30.1	1.2	5.8	- 6.8	2.1	- 4.9	.1	7.2	- 4.4	3.1	- 2.6	1	B		
U938	27.4	- .7	- 4.8	.1	5.1	- 5.6	3.5	.3	- 1.0	9.6	- 8.8	1	P	U745	U831
U939	25.8	1.9	- 5.2	- 1.0	3.4	- 4.2	1.5	6.6	- 6.8	13.0Δ	-11.8	1	P	U746	U830
U940	34.1	- 4.7	- 1.5	- .4	7.6	- .9	7.1	-10.4▽	- .0	11.1	-10.1	1	P	U737	
U941	20.0	- .2	- 2.0	- .3	2.6	- 2.1	2.6	3.1	- 6.0	8.5	- 7.7	1	P	U832	
U942	15.6	- 2.1	4.4	1.1	- 4.3	- 3.0	5.5	- 1.4	- 1.2	1.5	- 1.1	1	B	U848	
U943	15.1	.9	1.6	- 4.5	3.2	1.7	- .7	2.6	- 3.3	7.1	- 6.4	1	P	U840	
U944	14.0	4.1	- 4.7	- 3.3	4.2	3.1	.6	- .9	- 2.4	- .1	.2	1	B	U839	
U945	12.0	- .8	- 2.6	- .3	4.0	- 3.9	.5	3.7	- 1.3	- 1.1	1.1Δ	1	B	U842	
U946	11.4	- 3.2	2.3	- 1.3	3.5	- 1.6	1.5	3.6	- 5.6	.2	- .1	1	P	U844	
U947	11.3	3.7	- 6.1	- 2.2	3.8	- .2	2.7	- .9	- 3.1	1.9	- 1.7	1	P	U846	
U948	9.2	- 1.7	- .0	- 2.2	6.2	- 3.2	4.3	- 1.6	- 1.7	6.4	- 5.8	1	P	U849	
U949	6.3	1.0	1.4	- .7	- 1.3	2.0	- 2.9	- 1.2	5.4	1.1	- .8	1	B	U845	
U950	57.6	- 2.3	- 7.0	1.3	7.5	- .3	- 3.7	7.2	- 1.8	.7	- .4	1	B	U812	
U951	5.4	- 2.9	6.3	- .0	- 1.7	- .2	- .1	1.4	- 1.0	2.1	- 1.9	1	B		
R435	94.8	- .3	- 3.9	1.2	2.3	- 3.9	3.0	1.1	- 2.9	- .5	.5	2	B	R152	
R436	94.1	- 1.0	- 1.0	.5	1.6	- 4.4	2.0	2.7	- 2.6	1.4	- 1.2	2	P	R230	
R437	88.8	- .6	- 3.1	.1	3.4	- 7.7	3.3	1.3	- .0	2.1	- 1.9	2	B		
R438	72.9	- 6.3	- 1.7	4.1	3.9	- 6.3	- .5	4.8	.1	11.5Δ	-10.5	2	P	R234	R341
R439	62.5	- 2.5	- 6.3	3.3	3.6	- .2	4.6	- 9.4	3.9	6.9	- 6.2	2	P	R235	R340
R440	51.6	5.2	-10.7	- 5.9	10.6	- 1.0	6.7	- 3.3	- 7.2	7.8	- 7.2	2	B	R342	
R441	48.2	-15.5▽	- 4.6	9.0	3.5	-13.6	17.2Δ	3.9	- 6.3	- 5.5	5.4Δ	2	P	R237	R344
R442	38.8	2.2	- 3.8	- 4.4	7.1	- 7.7	- 1.0	4.7	3.1	.9	- .5	2	B	R239	
R443	24.8	- 2.3	- 1.0	1.2	2.4	3.4	.7	- .5	- 4.2	9.7	- 8.8	2	U	R345	
R444	24.5	9.7	- 5.0	- 4.9	- 1.7	.5	4.8	- 2.7	- 5.5	7.9	- 7.0	2	P	R346	
R445	11.4	.1	.4	6.6	- 9.8▽	- 3.4	3.7	4.5	- 5.4	4.3	- 3.8	2	P	R240	R348
U952	94.1	- .7	- 5.1	2.4	2.4	- 5.1	.0	1.3	- 2.0	.9	- .7	2	P	U748	
U953	93.5	- .9	- 4.3	1.8	3.8	.9	.1	- 3.6	- .6	- .3	.4	2	B	U666	
U954	80.0	1.8	-17.5	.9	9.5	- 2.9	- 1.2	5.1	- 1.7	7.9	- 7.2	2	P	U752	

EX. NO.	NATL %	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F	OBJ	SCI. TYPE	OVERLAP EX.	NO.
U955	71.9	- 4.7	4.2	.6	2.3	-14.5▽	9.6	5.8	- 4.1	13.3△	-12.1	2	P	U755	U852
U956	57.0	- 4.0	- 9.5	14.1△	- 2.7	-15.6▽	14.2△	2.0	- 4.2	.5	- .3	2	P	U758	U856
U957	52.7	3.8	-14.8	11.4△	.9	- 8.2	6.3	5.4	- 5.8	8.0	- 5.3	2	P	U760	U854
U958	51.0	- .6	-10.0	1.1	7.2	5.6	- .9	6.2	-12.8▽	5.7	- 5.1	2	U	U855	
U959	43.1	- 3.8	- 2.5	2.4	3.9	- 9.3	3.1	3.1	- .5	1.4	- 1.2	2	B	U857	
U960	29.6	- 4.7	-12.0	14.9△	- 5.7	- 7.2	9.6	5.4	- 8.8	7.1	- 6.4	2	P	U763	U859
U961	23.5	- 7.9	- 4.2	4.9	6.9	- 9.0	8.3	5.0	- 6.1	12.0△	-10.9	2	P	U766	U861
U962	22.3	- 3.8	- 6.3	11.5△	- 4.9	10.9△	10.6	-14.1▽	- 7.4	9.2	- 6.2	2	P	U764	U860
U963	20.0	- 1.6	-16.9	8.0	3.8	3.7	6.4	- 1.5	- 6.5	1.0	- .9	2	P	U762	U862
U964	18.5	1.1	- .3	.5	- 2.8	3.7	6.1	- 6.3	- 3.7	4.0	- 2.6	2	P	U765	U863
R446	57.2	3.6	.4	- 1.0	- 3.4	-12.0	7.1	- 1.2	.1	6.1	- 5.5	3	U	R243	R350
R447	43.5	- 5.5	- 6.2	5.4	6.3	- 7.7	16.4△	- .1	- 9.5	3.8	- 3.1	3	U		
U965	56.7	2.1	-17.5	2.1	7.3	5.3	.8	.3	- 7.3	7.4	- 6.7	3	P	U770	
U966	31.9	4.0	- 7.3	- 5.1	8.4	1.2	8.9	- 8.1	- 6.6	11.3△	-10.3	3	U	U866	
U967	12.1	7.6	- 3.9	- 1.9	- 3.0	5.4	.5	.8	- 7.1	5.5	- 5.0	3	U	U867	
R448	75.0	1.8	- 8.7	- 1.1	6.0	.9	2.4	- 1.8	- 2.3	2.9	- 2.6	4	U	R353	
R449	28.5	- 3.0	- 2.7	3.5	1.6	-10.6	6.8	4.2	- 2.6	1.4	- 1.1	4	U	R354	
U968	44.8	- 7.4	- 3.0	5.5	3.6	- 1.6	- .3	- .1	2.4	- 7.1	6.6△	4	U		
U969	25.8	1.1	- 1.6	- 3.8	4.5	.4	- .2	5.6	- 6.5	8.4	- 7.6	4	U	U869	
U970	14.0	1.9	- 3.4	- 3.2	5.3	2.6	6.0	- 7.6	- 3.1	5.8	- 5.2	4	U	U870	

APPENDIX D

STANDARD ERRORS FOR REGION, SIZE-OF-COMMUNITY, AND SEX EFFECTS

This appendix follows the same format as Appendix C, but presents the standard errors for national percentage of success, for each of four regional effects, each of four size-of-community effects, and for the male and female effects. Exercises are identified by a letter and a three-digit number in the first column; they are ordered by age and, within age, by the four science objectives.

As mentioned in Appendix C, the data shown here for sex performance are in a different form than that presented in the text. Chapters 2 and 5 discuss differences between percentage of male success and percentage of female success, rather than the sex effects which compare each sex's performance with the national performance. The appropriate standard error to use for a sex difference is obtained from the standard errors for the sex differences in the following way:

$$\sqrt{2\left[\left[\text{SE(male effect)}\right]^2 + \left[\text{SE(female effect)}\right]^2\right]}$$

STANDARD ERRORS

EX. NO.	NATL	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F
(Age 9)											
R101	0.9	1.3	1.9	1.0	2.3	3.0	1.3	1.1	1.5	1.0	1.0
R102	0.7	1.1	1.8	1.1	1.0	1.6	1.2	0.9	1.3	0.9	0.8
R103	0.8	1.1	1.7	1.1	1.2	1.7	1.0	1.3	1.3	0.9	0.9
R104	0.9	1.4	2.1	1.3	1.8	3.0	1.5	1.2	1.3	0.9	1.1
R105	0.9	1.6	2.2	1.3	1.2	2.4	1.1	1.5	1.3	0.9	1.0
R106	0.9	1.5	2.3	1.4	1.6	2.7	1.3	1.5	1.5	0.9	0.9
R107	1.0	1.7	2.4	1.6	1.7	2.5	1.4	1.9	1.8	1.0	1.0
R108	1.0	1.3	2.5	1.3	1.8	2.8	1.2	1.4	2.0	1.0	1.0
R109	1.2	1.9	2.5	1.5	2.8	2.5	2.0	2.3	1.7	1.1	1.6
R110	1.1	1.6	2.6	1.5	1.8	2.1	1.6	1.5	2.0	0.8	1.0
R111	1.1	1.9	2.2	1.7	1.8	2.2	1.9	1.9	1.9	1.0	1.2
R112	1.0	1.6	2.2	1.6	1.7	2.0	1.4	1.9	1.5	1.4	1.2
R113	1.1	1.5	2.4	1.7	2.0	2.6	1.8	1.5	1.8	1.2	1.3
R114	1.3	1.9	2.6	1.9	2.0	2.7	2.3	1.8	2.1	1.5	1.2
R115	1.3	2.7	2.3	1.8	2.1	2.3	2.4	2.0	2.0	1.2	1.5
R116	1.3	1.8	2.7	2.2	1.9	3.2	2.0	1.7	2.1	1.4	1.1
R117	1.9	2.5	3.7	3.3	2.6	3.7	2.5	2.5	3.8	1.5	1.6
R119	1.4	2.3	2.8	2.3	2.5	2.8	2.5	2.6	1.9	1.3	1.8
R120	1.7	2.5	3.6	2.4	3.4	3.7	2.9	2.6	2.5	1.6	1.6
R121	1.5	2.3	3.3	1.9	3.0	3.4	2.1	2.6	2.6	1.3	1.8
R122	1.8	2.8	3.4	2.6	3.5	4.2	2.8	3.2	3.0	1.5	2.2
R123	1.7	2.7	3.5	2.5	2.7	3.6	2.5	3.2	2.7	2.4	2.1
R124	1.1	2.1	2.1	1.8	2.1	2.7	2.0	1.8	1.8	1.1	1.4
R125	1.5	2.5	3.4	2.4	2.2	2.6	2.5	2.7	2.2	1.2	1.5
R126	1.5	2.1	3.2	2.4	2.5	2.7	2.2	2.8	2.5	1.4	1.5
R127	1.8	2.7	3.0	2.7	3.0	3.8	2.8	2.7	2.5	1.7	1.8
R128	1.8	3.1	3.4	3.0	2.6	3.1	3.1	3.3	2.5	1.5	1.9
R129	1.6	2.6	3.4	2.4	2.7	2.8	2.4	2.5	3.2	1.4	1.6
R130	1.7	2.7	3.2	2.8	2.6	3.4	2.4	3.0	2.8	1.7	1.8
R131	1.7	2.4	3.5	2.7	3.3	3.7	2.6	3.2	2.8	1.5	2.1
R132	1.8	2.8	3.6	2.7	3.3	3.4	2.6	3.3	3.4	1.4	2.0
R134	1.7	2.6	3.3	2.9	2.7	3.5	2.6	3.0	2.7	1.6	1.6
R135	1.4	2.4	2.5	2.0	2.5	2.8	2.0	2.3	2.3	1.5	1.7
R136	1.8	2.8	2.9	2.7	3.4	2.9	2.6	2.7	2.9	1.9	1.9
R137	1.9	3.2	3.5	3.0	2.8	2.7	3.6	2.7	2.9	1.8	1.4
R138	1.3	2.2	2.7	1.9	2.3	2.5	2.1	2.2	2.4	1.1	1.6
R139	1.4	1.9	3.2	2.0	2.7	2.6	1.9	2.6	2.6	1.4	1.1
R140	1.5	2.1	3.3	2.1	2.0	2.2	2.6	2.1	2.3	1.5	1.4
R141	0.7	1.3	1.2	1.1	1.4	1.1	1.1	1.2	1.3	0.6	0.7
U601	0.6	0.9	1.3	0.9	0.9	1.2	1.1	0.8	1.0	0.4	0.5
U602	0.7	1.1	2.3	0.9	0.9	1.7	1.1	0.9	1.5	0.7	0.8
U603	0.6	0.9	1.6	1.0	0.8	1.3	0.9	0.9	1.0	0.7	0.6
U604	0.7	1.0	1.8	0.9	0.8	1.3	1.1	0.9	1.2	0.7	0.9

STANDARD ERRORS

EX. NO.	NATL	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F
U605	0.8	1.1	1.5	1.0	1.6	2.0	0.8	1.4	1.4	0.8	0.8
U606	0.9	1.1	2.0	1.0	1.7	1.7	1.1	1.6	1.4	1.1	0.8
U607	0.9	1.0	1.9	1.3	1.8	2.2	1.1	1.8	1.5	0.8	1.1
U608	0.8	1.3	2.3	1.0	1.4	2.3	1.0	1.0	1.7	0.8	0.9
U609	0.9	1.5	2.0	1.4	1.4	2.5	1.3	1.5	1.4	1.1	0.9
U610	1.1	1.8	2.2	1.9	1.6	1.8	2.2	1.6	1.5	1.4	1.1
U611	1.1	1.6	2.9	1.5	2.0	2.7	1.5	2.2	1.4	1.4	1.4
U612	1.1	1.6	1.9	1.6	1.7	2.2	1.9	1.5	1.6	1.3	1.0
U613	1.1	1.6	2.2	1.5	2.2	2.9	1.5	2.1	1.5	1.3	1.4
U614	1.0	1.3	2.7	1.8	1.5	2.1	1.4	1.8	1.6	0.9	1.3
U615	1.4	2.1	2.1	2.4	2.5	3.0	2.4	2.2	2.0	1.5	1.2
U616	1.3	1.7	2.8	1.9	2.1	3.6	1.8	1.9	2.1	1.8	1.5
U617	1.4	2.3	2.3	2.5	2.3	2.3	2.8	2.2	2.1	1.3	1.4
U618	1.4	2.2	2.9	2.6	2.3	2.8	2.5	2.4	2.4	1.2	1.8
U619	1.4	1.8	3.5	1.8	2.5	3.3	1.8	2.0	2.6	1.3	1.4
U620	1.6	2.2	3.1	2.9	2.2	2.9	3.1	2.4	2.2	1.4	1.2
U621	1.2	1.9	2.3	2.0	2.3	3.1	1.6	2.3	1.9	1.1	1.5
U622	1.4	2.5	3.0	2.3	2.2	2.6	2.0	2.5	2.4	1.4	1.6
U623	1.5	2.3	2.5	2.1	2.8	2.7	2.2	3.0	2.4	1.7	1.3
U624	1.3	1.9	3.6	2.0	1.8	2.9	1.6	2.5	2.4	2.1	2.0
U625	1.5	2.2	3.6	2.2	2.3	2.6	2.5	2.0	2.7	1.4	1.7
U626	1.5	2.3	3.4	2.1	2.4	3.5	2.3	2.2	2.8	1.6	1.7
U627	1.5	1.9	2.3	2.7	2.2	2.5	1.9	2.4	3.3	1.8	1.5
U628	1.6	2.4	3.2	2.1	3.1	2.7	2.6	2.3	2.5	1.4	1.5
U629	1.5	2.5	3.5	2.4	2.0	2.7	2.4	2.7	2.5	1.6	1.6
U630	1.6	2.7	3.2	2.6	2.3	3.5	3.0	2.4	2.4	1.4	1.7
U631	1.7	2.1	3.4	2.8	3.0	3.6	2.6	2.6	2.6	1.6	1.7
U632	1.8	2.5	3.5	2.9	2.5	3.5	3.0	2.4	2.7	1.7	1.8
U633	1.9	3.1	3.3	2.6	3.7	3.4	2.6	3.1	3.4	2.3	1.8
U634	1.4	2.6	3.6	2.1	2.2	3.1	1.9	3.0	2.2	1.5	1.5
U635	1.4	2.4	2.6	2.1	2.2	3.0	2.2	2.3	2.5	2.0	1.6
U636	1.4	2.0	3.0	2.3	2.0	3.1	1.7	1.9	2.9	1.8	1.5
U637	2.0	2.6	2.8	4.1	2.7	2.8	2.8	2.5	4.3	1.7	2.0
U638	1.6	2.8	2.9	2.5	2.9	2.4	3.0	2.6	2.6	1.6	1.8
U639	1.8	2.6	4.0	2.9	3.0	3.5	3.1	2.9	2.4	1.8	1.8
U640	2.0	3.1	4.2	3.2	3.8	3.4	2.9	3.8	4.1	1.8	2.5
U641	1.7	2.2	3.2	2.7	3.0	3.1	2.2	3.4	2.6	2.0	1.6
U642	1.4	2.1	2.5	2.2	2.9	2.6	2.2	2.5	2.0	1.5	1.6
U643	1.3	2.6	3.3	1.8	2.2	2.4	2.2	2.5	1.8	1.3	1.6
U644	1.9	3.0	3.9	3.2	2.9	3.6	3.0	3.6	3.2	1.9	2.0
U645	2.0	3.6	3.2	3.4	2.8	3.7	3.2	3.3	2.7	2.4	1.8
U646	1.6	2.9	3.2	2.4	2.7	2.8	3.0	2.9	2.8	2.1	1.8
U647	1.5	3.1	2.7	2.3	2.3	2.7	2.1	3.0	2.4	1.8	1.7

STANDARD ERRORS

EX. NO.	NATL	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F
U648	2.0	2.9	3.3	3.7	3.1	3.4	3.5	3.5	3.0	1.8	2.5
U649	1.6	2.7	3.4	2.2	2.6	3.3	2.6	2.4	2.8	1.9	1.4
U650	1.8	2.9	2.9	3.4	3.2	3.6	3.2	2.6	3.2	1.8	1.9
U651	1.3	2.1	2.8	2.1	2.1	2.8	2.1	2.2	2.1	1.6	1.5
U652	1.3	1.8	2.7	2.2	2.3	1.9	2.4	2.1	2.0	1.6	1.3
U653	1.0	1.7	2.1	1.6	1.5	2.2	1.3	1.9	1.6	1.4	1.1
U654	1.4	2.1	2.4	2.2	2.8	2.3	2.4	2.4	2.0	1.3	1.4
U655	1.1	1.9	1.7	2.0	1.9	2.0	1.6	2.0	1.9	1.2	1.3
U656	1.3	1.6	2.3	2.6	1.8	1.6	2.6	1.7	1.9	1.3	1.3
U657	1.1	2.1	1.8	1.7	1.6	1.8	1.7	1.9	1.9	0.9	1.1
R133	1.2	1.5	1.8	2.0	2.0	2.8	1.7	2.2	2.0	1.2	1.3
R142	0.5	1.3	1.0	0.7	0.8	1.1	0.7	1.1	0.9	0.5	0.5
R144	0.9	1.7	1.7	1.3	1.3	1.5	1.3	1.6	1.5	1.0	0.8
R145	1.1	1.8	2.5	1.5	1.7	2.2	1.7	1.8	1.9	1.1	1.2
R146	1.5	1.8	3.7	1.9	2.9	3.5	1.8	2.5	2.8	1.5	1.5
R147	1.7	2.1	3.9	2.8	2.9	3.6	2.8	2.4	2.7	1.5	1.6
R148	1.4	2.3	2.9	2.3	2.6	2.6	2.5	2.4	2.4	1.3	1.4
R149	1.4	2.3	3.2	2.1	2.7	3.4	2.1	2.1	2.6	1.5	1.9
R150	1.8	3.0	3.3	2.8	2.6	3.4	3.5	2.6	2.9	1.7	1.8
R151	1.9	2.7	3.4	3.1	4.0	3.4	3.5	2.8	2.8	1.5	1.6
R152	1.9	2.6	3.8	3.3	2.8	3.1	3.0	3.3	3.2	1.8	1.9
R153	1.5	2.7	3.0	2.0	2.0	3.1	2.3	2.3	2.3	1.9	1.5
R154	1.5	2.1	2.5	2.8	2.1	2.3	2.8	1.9	2.3	1.3	1.2
U658	0.6	0.7	1.5	0.8	1.0	1.6	0.7	0.9	1.0	0.6	0.6
U659	0.9	1.2	1.9	1.3	1.2	1.6	1.4	1.1	1.7	0.8	0.6
U660	1.1	1.5	1.8	1.4	2.5	2.0	1.6	2.4	1.5	1.0	1.3
U661	1.4	1.9	3.6	2.3	1.9	2.5	1.8	2.5	2.3	1.3	1.4
U662	1.5	2.0	3.9	2.0	2.4	3.1	1.9	2.3	2.9	1.4	1.5
U663	1.5	2.8	3.1	2.2	2.6	3.7	2.5	2.4	2.1	1.8	1.4
U664	1.4	2.0	2.5	2.4	2.4	3.0	2.4	2.5	2.4	1.1	1.5
U665	1.5	2.1	4.2	2.5	2.2	3.4	2.3	3.0	2.1	1.5	1.5
U666	1.6	2.5	2.3	2.7	2.4	3.6	2.6	2.3	2.7	1.3	1.4
U667	1.5	2.1	3.3	1.9	2.6	3.9	2.1	2.6	2.4	1.5	1.6
U668	1.7	2.4	3.3	3.0	2.4	3.5	2.3	2.7	2.8	1.5	1.5
U669	1.8	2.9	3.3	2.8	3.5	2.9	3.2	2.5	3.2	2.6	2.4
U670	1.4	2.0	2.6	2.4	2.2	3.0	1.9	2.5	2.2	1.5	1.5
U671	1.9	2.4	2.4	3.5	2.6	2.9	3.6	2.7	2.7	1.9	1.6
U672	1.3	1.8	2.6	2.3	1.7	2.0	2.2	2.0	1.5	1.0	1.4
U673	1.0	1.6	2.1	1.7	1.4	2.2	1.6	1.7	1.8	0.8	1.0
R155	1.0	1.3	1.6	1.2	2.4	1.8	1.4	2.3	1.3	1.0	1.4
R156	1.1	2.0	2.5	1.9	1.5	2.6	1.9	1.9	1.8	1.3	1.1
R157	1.8	2.9	3.6	2.8	3.5	4.1	2.7	3.1	2.8	1.8	2.2
R158	1.5	2.9	2.2	2.1	2.9	2.4	2.7	2.0	2.3	1.1	1.1

STANDARD ERRORS

EX. NO.	NATL	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F
R159	1.2	2.0	2.3	1.7	2.0	2.1	2.2	2.0	1.7	1.1	1.1
U674	0.7	0.8	1.6	0.9	1.5	2.0	0.9	1.1	1.2	0.6	0.7
U675	1.7	2.5	2.7	2.3	3.8	3.8	2.6	3.4	2.6	1.6	2.2
U676	1.9	3.0	3.4	2.7	3.3	2.7	3.8	2.8	2.9	2.0	1.5
U677	1.5	2.4	2.4	2.5	2.8	2.8	2.7	2.3	2.5	1.3	1.7
U678	1.4	2.1	2.8	2.0	2.4	2.3	2.2	2.0	2.6	1.2	1.4
U679	1.3	2.1	2.5	2.2	2.1	2.2	2.2	2.1	2.0	1.3	1.4
R160	1.5	2.5	2.3	2.8	2.3	2.9	2.6	2.3	2.4	1.4	1.4
U680	1.3	1.8	2.3	2.3	1.6	2.1	2.3	1.8	2.1	1.1	0.9
U681	1.0	1.8	2.1	1.4	1.8	2.3	1.5	1.7	1.5	1.1	1.2
U682	1.5	2.5	3.5	2.1	2.7	3.6	2.4	2.3	2.3	1.3	1.7
U683	1.2	2.0	2.4	2.0	2.1	2.6	1.9	1.6	2.4	1.5	1.6
U684	1.4	2.4	2.4	2.2	1.9	2.3	2.4	2.5	2.0	1.6	1.2
U685	1.9	2.8	3.7	2.9	2.7	3.9	2.5	3.0	3.6	1.9	1.9
U686	1.6	2.2	2.5	2.8	3.0	2.8	2.1	3.4	2.2	1.5	1.5
U687	1.1	2.4	1.7	1.8	1.6	1.7	2.2	1.8	1.7	1.3	1.1
(Age 13)											
R201	0.8	0.8	0.8	0.9	2.4	3.0	0.8	0.8	0.9	0.8	1.0
R202	0.3	0.4	0.9	0.5	0.4	0.6	0.5	0.4	0.7	0.3	0.3
R203	0.6	1.0	1.1	1.1	1.3	1.1	1.0	1.3	0.9	0.8	0.6
R204	0.8	1.4	1.6	1.2	1.4	1.5	1.3	1.5	1.2	0.8	1.0
R205	1.3	1.5	3.2	1.6	2.1	2.5	2.2	1.9	2.2	1.3	1.1
R206	1.3	2.1	3.1	1.6	2.2	3.1	2.0	2.3	2.0	1.4	1.1
R207	1.0	1.8	2.1	1.8	1.6	2.0	1.7	1.8	1.8	1.3	1.0
R208	1.5	2.4	2.5	2.1	2.0	2.3	2.0	2.1	2.2	1.5	1.6
R209	1.8	3.0	3.5	3.4	2.9	3.6	3.1	3.0	3.0	2.0	1.6
R210	1.5	2.3	3.1	2.0	2.9	2.4	2.8	2.6	2.3	1.4	1.7
R211	1.6	2.3	2.8	2.9	2.8	3.3	2.5	2.6	3.0	2.3	1.9
R212	1.3	1.9	3.1	2.6	2.3	2.8	1.9	2.6	2.0	1.5	1.7
R213	1.7	3.2	3.1	2.5	2.9	3.6	2.3	2.9	2.9	1.9	1.8
R214	1.4	1.9	2.8	2.3	2.5	2.6	2.3	2.3	2.1	1.4	1.5
R215	2.1	2.9	3.9	2.7	3.2	4.9	3.1	3.1	3.7	2.1	2.7
R216	1.8	3.2	3.8	3.0	2.5	3.1	2.9	3.5	2.7	1.9	1.5
R217	1.6	2.8	3.3	2.4	2.5	2.8	2.7	2.7	2.9	1.8	1.4
R218	1.7	2.9	3.5	2.7	2.5	2.1	2.8	3.0	2.9	1.3	1.7
R219	1.7	2.4	3.1	3.1	2.5	3.5	2.6	2.7	2.8	2.3	1.8
R220	1.4	2.5	2.4	2.1	2.3	2.3	2.1	2.6	2.2	1.6	1.2
R221	1.6	2.7	2.9	3.0	2.2	2.7	2.4	3.0	2.8	1.5	1.8
R222	1.3	2.2	2.5	2.5	2.0	2.5	2.2	2.2	2.0	1.4	1.3
R223	1.4	2.8	2.7	2.1	2.1	2.8	2.6	2.8	1.8	1.4	1.7
R224	1.7	2.5	2.5	2.9	3.2	3.3	2.5	2.8	2.6	1.6	1.3
R225	1.3	2.5	2.6	2.1	2.0	2.2	1.9	2.3	2.1	1.3	1.5

STANDARD ERRORS

EX. NO.	NATL	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F
R226	1.5	2.3	2.6	2.7	2.4	2.5	2.2	3.0	2.1	1.4	1.6
R227	1.6	2.8	2.4	2.6	2.5	3.6	2.6	3.0	2.1	1.4	1.8
R228	1.3	2.3	2.2	2.1	1.8	2.5	2.1	1.9	2.2	1.2	1.4
U701	0.9	1.9	1.2	1.2	1.3	2.7	1.2	1.1	1.2	0.8	0.9
U702	0.6	0.9	1.2	1.0	0.8	1.1	1.0	0.8	1.0	0.5	0.4
U703	0.6	0.8	1.3	0.8	1.0	1.6	0.9	0.9	0.7	0.7	0.5
U704	0.6	1.0	1.6	1.0	1.1	1.3	1.0	1.2	1.0	0.7	0.6
U705	0.9	1.1	2.6	1.2	1.2	1.3	2.0	1.1	1.3	1.0	0.8
U706	1.0	1.5	2.1	1.5	1.6	2.1	1.8	1.5	1.3	1.1	0.9
U707	1.5	2.1	2.5	2.8	2.3	3.1	1.8	2.8	2.3	1.6	1.4
U708	1.2	1.5	2.7	2.0	1.8	2.2	1.7	1.9	1.9	1.1	1.4
U709	1.7	2.1	3.5	2.0	2.4	3.1	2.1	2.2	3.5	1.6	2.0
U710	1.3	1.8	2.3	2.0	1.9	3.0	1.9	2.2	1.8	1.1	1.2
U711	1.2	1.6	2.1	1.8	2.3	2.5	1.9	2.0	1.9	1.3	1.0
U712	1.3	2.3	3.0	1.7	1.9	2.6	2.4	2.0	1.9	1.4	1.1
U713	1.3	1.9	2.7	2.2	2.3	3.2	2.0	1.8	2.0	1.5	1.3
U714	1.4	2.1	3.3	2.3	2.1	2.5	2.0	2.2	2.6	1.0	1.2
U715	1.6	2.1	2.9	2.8	3.3	3.5	2.2	2.8	2.9	1.4	1.8
U716	1.1	1.9	2.0	1.8	2.0	2.2	1.9	1.9	1.6	1.0	1.2
U717	1.9	2.7	4.0	3.0	3.1	3.5	2.8	3.1	3.2	1.5	1.8
U718	2.1	3.7	4.3	3.1	3.5	2.9	2.9	3.6	4.0	2.0	1.9
U719	1.5	2.3	2.3	2.5	2.4	2.8	2.4	2.5	2.4	1.6	1.2
U720	1.6	2.5	3.9	2.7	2.1	2.4	2.3	2.6	3.1	1.4	1.6
U721	2.4	3.3	3.5	4.8	2.9	3.3	3.1	3.4	5.1	1.8	1.4
U722	1.8	2.5	2.9	2.2	2.9	3.6	2.1	2.5	3.3	1.6	2.0
U723	1.8	3.0	3.6	2.7	2.4	3.3	2.6	3.3	2.5	1.7	1.6
U724	1.8	2.9	2.8	2.9	2.9	3.5	3.1	3.0	2.4	2.0	1.6
U725	1.7	2.8	2.7	2.8	2.9	3.3	2.5	2.8	2.7	1.6	1.4
U726	1.8	2.9	2.5	3.3	2.6	2.9	3.3	2.9	2.5	1.9	1.7
U727	1.7	3.0	4.1	2.7	2.3	2.8	3.3	2.8	2.5	1.8	1.9
U728	2.1	3.4	4.0	3.5	3.6	4.1	3.6	3.6	3.2	2.6	2.1
U729	2.5	3.2	3.8	4.3	3.4	4.2	3.4	3.4	4.8	1.9	2.4
U730	1.7	2.5	2.9	3.1	2.6	2.9	2.2	3.1	2.8	1.8	1.4
U731	1.3	2.5	2.6	2.2	2.2	2.3	2.7	2.1	2.1	1.6	1.2
U732	1.8	3.3	2.6	2.9	2.9	3.2	3.1	3.3	2.8	1.8	1.4
U733	1.9	2.6	3.2	2.2	2.8	3.1	2.5	2.9	3.1	1.4	1.9
U734	1.5	1.9	2.4	2.8	2.5	3.3	2.2	2.4	2.5	1.5	1.5
U735	1.8	2.8	3.3	3.0	2.5	3.1	2.3	3.2	2.9	2.1	1.8
U736	1.6	2.5	3.1	3.2	2.1	3.0	2.5	2.5	3.1	1.5	1.8
U737	1.4	2.3	2.5	2.5	2.5	2.5	2.2	2.5	2.6	1.6	1.3
U738	1.6	2.9	3.1	2.6	2.4	2.7	2.9	2.8	2.6	1.6	1.5
U739	1.5	2.6	3.5	2.5	2.2	3.5	2.3	2.5	2.3	1.5	1.7
U740	1.6	2.6	2.8	2.8	2.6	2.6	3.1	2.7	2.3	2.1	1.7

STANDARD ERRORS

EX. NO.	NATL	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F
U741	1.4	2.2	2.4	2.0	2.4	2.2	2.8	2.2	2.1	1.4	1.6
U742	2.7	3.9	3.8	4.3	3.3	3.0	4.0	3.6	5.2	2.1	2.8
U743	1.6	2.7	2.5	2.7	2.5	2.9	2.7	2.6	2.4	1.6	1.3
U744	1.2	1.9	2.3	2.3	1.7	2.1	2.1	2.0	1.8	1.0	1.2
U745	1.5	2.6	2.8	2.2	2.2	2.6	3.0	2.4	2.0	1.2	1.4
U746	1.2	1.9	2.0	2.1	2.1	2.4	1.8	2.1	1.9	1.1	1.0
U747	0.8	1.4	1.5	1.3	1.2	1.3	1.2	1.6	1.1	0.8	0.8
R229	0.6	1.0	1.0	0.9	1.0	1.5	1.0	0.9	0.9	0.6	0.7
R230	0.9	1.6	2.4	1.4	1.2	2.3	1.5	1.4	1.4	1.3	1.0
R231	1.5	1.9	3.8	2.0	1.9	2.7	2.0	1.8	2.9	1.1	1.3
R232	1.2	1.8	2.8	1.5	2.4	2.2	2.1	2.1	1.7	1.1	1.3
R233	1.6	2.2	3.0	2.9	2.2	3.3	2.4	2.7	2.5	1.8	1.5
R234	2.5	3.5	4.1	4.2	4.5	4.6	3.8	3.8	4.7	2.5	2.2
R235	1.3	2.2	2.6	2.0	2.5	2.9	2.3	2.3	1.9	1.2	1.4
R236	1.7	2.3	3.7	2.3	2.5	3.4	2.2	2.3	2.9	1.3	1.6
R237	2.4	4.1	4.1	3.9	4.1	4.4	3.6	4.4	4.4	2.0	2.1
R238	1.5	2.7	2.8	2.3	2.3	3.0	2.3	2.7	2.3	1.7	1.4
R239	1.7	3.1	2.3	2.5	2.3	2.6	2.9	2.5	2.3	1.6	1.8
R240	0.9	1.8	1.7	1.4	1.6	2.0	1.3	1.9	1.3	1.1	0.9
U748	1.0	1.2	2.9	1.1	1.7	2.0	1.2	1.4	2.1	1.0	1.2
U749	0.9	1.2	2.3	1.4	1.1	1.5	1.1	1.4	1.3	0.8	0.9
U750	1.3	1.9	2.8	2.4	1.9	3.0	2.1	2.2	2.2	1.5	1.3
U751	1.3	2.3	2.3	2.3	2.1	2.8	1.9	1.9	2.1	1.5	1.1
U752	2.0	4.5	2.9	2.5	2.7	5.5	2.4	2.8	2.6	2.0	1.9
U753	2.0	4.3	4.1	2.5	3.2	4.7	2.6	3.4	2.8	2.0	2.0
U754	1.8	2.9	3.9	3.3	2.4	2.7	2.9	2.5	3.2	1.8	2.0
U755	2.3	3.9	3.9	3.6	4.2	4.9	3.5	3.9	3.9	2.6	2.1
U756	1.8	2.7	4.2	2.6	2.4	3.2	2.7	2.5	3.4	1.5	1.7
U757	1.8	3.0	3.2	3.3	2.7	3.5	3.1	2.9	3.1	1.8	1.8
U758	2.6	4.0	4.4	4.6	3.9	4.7	4.1	4.6	4.3	2.3	2.8
U759	1.6	3.0	3.6	2.3	2.5	3.1	2.7	2.8	2.3	1.9	1.4
U760	2.8	4.4	4.8	4.9	4.6	4.2	4.5	4.8	5.2	2.4	2.9
U761	1.5	2.5	2.7	1.9	2.4	3.1	2.3	2.4	2.2	1.5	1.6
U762	1.8	3.2	3.5	2.8	3.8	3.0	3.2	3.3	2.8	2.3	2.0
U763	2.0	3.4	2.9	3.7	3.0	2.8	3.1	3.6	3.5	2.0	1.7
U764	1.8	2.8	2.5	3.1	3.6	4.4	3.2	2.6	2.9	1.6	1.8
U765	1.8	2.8	2.4	3.1	3.6	4.4	3.2	2.6	2.8	1.5	1.8
U766	1.6	3.0	2.3	2.9	2.4	2.1	3.1	2.8	2.3	1.8	1.5
R241	1.3	1.6	3.0	2.2	2.5	3.0	2.2	2.2	1.9	1.2	1.5
R242	1.3	1.8	2.6	2.3	2.3	3.3	2.2	1.8	2.3	1.2	1.4
R243	1.4	2.3	2.1	1.8	2.4	3.0	2.3	2.4	1.8	1.3	1.2
R244	1.8	2.6	4.1	2.8	2.3	3.5	2.4	2.5	3.1	1.5	1.6
U767	0.9	1.8	1.7	1.1	1.6	1.5	1.8	1.7	1.2	1.0	1.0

STANDARD ERRORS

EX. NO.	NATL	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F
U768	1.4	2.5	2.6	2.1	2.3	3.0	2.4	2.1	2.0	1.5	1.3
U769	1.3	2.3	2.4	2.2	2.4	2.9	2.5	2.0	2.0	1.7	1.4
U770	1.5	2.6	2.8	2.4	2.6	2.6	2.7	2.5	2.6	1.7	1.3
R245	0.8	1.2	1.1	1.7	1.0	1.4	1.1	0.9	1.8	0.8	0.9
R246	0.8	1.3	2.0	1.1	1.5	1.9	1.0	1.3	1.4	0.9	0.8
R247	0.7	1.2	1.5	1.0	1.3	1.3	1.0	1.2	1.2	0.6	0.8
U771	0.6	1.0	1.4	1.0	0.9	1.4	1.1	0.8	1.1	0.6	0.6
U772	0.7	1.1	1.2	1.1	1.3	1.5	1.0	1.1	1.1	0.7	0.6
U773	1.4	2.7	2.4	2.2	2.3	2.3	2.5	2.8	2.1	1.5	1.5
U774	1.1	1.7	2.1	1.8	1.7	2.1	1.8	1.6	2.0	1.2	1.2
U775	0.6	0.9	1.0	1.1	0.8	1.0	1.1	1.1	0.7	0.6	0.5
(Age 17)											
R301	0.6	1.1	1.7	0.6	0.8	1.3	0.7	0.7	1.2	0.6	0.7
R302	1.3	2.6	2.0	2.1	1.5	2.4	1.8	1.8	2.8	1.1	1.2
R303	1.5	2.9	2.0	1.6	2.6	2.7	3.0	2.3	1.7	1.7	1.4
R304	1.4	2.6	2.6	2.3	1.8	2.3	2.2	2.3	2.6	1.4	1.3
R305	1.4	2.6	2.2	1.8	3.1	3.4	2.0	2.4	2.2	1.5	1.2
R306	2.4	4.1	5.3	3.3	2.9	4.0	4.6	3.0	3.2	2.1	2.1
R307	1.6	2.7	2.6	2.6	2.3	2.8	2.5	2.4	2.9	1.7	1.5
R308	1.4	2.6	2.5	2.5	2.2	2.9	2.5	2.2	2.4	1.6	1.8
R309	2.1	4.1	3.4	3.3	2.8	3.3	4.2	3.2	3.1	2.1	1.6
R310	1.5	2.1	2.9	2.3	2.2	3.0	2.7	2.4	2.1	1.7	1.3
R311	2.2	3.5	5.2	3.3	2.6	3.7	3.2	3.7	3.0	1.9	2.0
R312	2.0	4.2	3.5	2.9	3.0	2.9	4.1	3.1	3.3	1.8	1.5
R313	1.4	2.9	2.8	2.3	2.4	3.1	2.4	2.6	2.2	1.5	1.5
R314	2.4	4.5	5.4	3.1	3.2	3.8	4.5	3.3	3.1	2.0	2.1
R315	1.4	2.3	3.4	2.0	2.4	2.6	2.2	2.3	2.6	1.7	1.4
R316	2.5	4.3	5.0	3.6	3.2	3.9	4.5	3.9	3.7	2.3	2.2
R317	1.8	3.4	3.7	2.7	2.6	3.4	3.1	3.1	2.8	2.1	1.7
R318	2.0	3.2	4.2	3.0	2.5	3.4	3.6	2.7	2.7	3.0	2.4
R319	1.8	2.9	3.9	2.9	2.4	2.6	3.2	3.3	2.6	1.6	1.7
R320	2.4	4.4	4.4	3.1	3.3	3.6	4.3	3.7	2.9	2.2	2.2
R321	1.5	2.8	2.9	2.3	2.2	3.3	2.6	2.7	2.1	2.0	1.5
R322	2.2	4.6	3.7	3.1	2.9	3.3	4.0	3.2	3.1	2.0	2.3
R323	1.6	2.5	3.5	2.4	2.9	3.0	2.2	3.0	2.5	2.0	1.8
R324	2.1	3.9	3.1	2.9	2.8	3.1	3.4	3.5	3.2	2.7	2.1
R325	2.1	3.5	3.9	3.4	2.9	3.0	3.2	3.4	2.9	1.8	2.0
R326	1.7	3.7	2.6	2.3	2.7	3.6	3.1	2.8	2.3	1.8	1.8
R327	1.9	3.7	3.2	2.9	2.7	3.5	3.4	2.8	2.9	2.2	1.9
R328	1.7	2.7	2.7	2.9	2.5	2.6	2.8	2.8	2.4	1.8	1.4
R329	1.7	3.6	2.7	2.3	2.8	2.7	3.6	2.9	2.2	2.2	1.8
R330	1.6	3.0	3.4	2.4	2.3	2.8	2.4	3.0	2.8	1.7	1.7

STANDARD ERRORS

EX. NO.	NATL	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F
R331	1.3	2.1	2.0	2.4	1.8	2.0	2.4	2.1	2.0	1.1	1.2
R332	1.3	2.6	2.3	1.9	2.3	2.3	2.6	1.9	2.1	1.8	1.4
R333	1.3	2.9	2.0	2.1	1.7	1.9	2.7	1.9	2.1	1.2	1.3
R334	1.1	1.9	2.1	1.6	1.9	1.8	2.4	1.5	2.0	1.2	1.0
R335	0.6	1.2	0.8	1.0	1.1	1.1	1.1	1.0	1.0	0.6	0.8
R336	0.7	1.1	1.5	0.9	1.1	1.0	1.0	1.1	1.2	0.8	0.6
R337	0.4	0.7	1.0	0.6	0.6	0.6	0.7	0.6	0.8	0.4	0.4
R338	0.5	0.9	1.1	0.6	0.7	0.6	0.7	1.0	0.8	0.5	0.5
U801	0.9	1.2	2.2	1.2	1.3	1.9	0.9	1.3	1.7	0.8	0.7
U802	1.0	1.8	1.6	1.7	1.2	1.2	1.1	1.6	2.3	1.2	1.0
U803	1.9	2.5	5.8	2.2	2.3	2.8	3.7	2.4	2.7	1.9	1.9
U804	1.4	2.0	2.7	2.4	2.4	2.0	2.0	2.0	2.8	1.2	1.1
U805	1.5	2.8	2.6	2.5	1.9	3.4	2.1	2.2	2.9	1.7	1.3
U806	2.0	4.1	3.0	2.9	2.9	3.4	3.9	3.3	3.0	1.9	1.5
U807	1.2	1.9	2.7	1.9	2.2	2.9	1.9	2.0	1.9	1.3	1.1
U808	1.8	3.4	3.0	2.9	2.4	2.7	2.5	2.3	3.5	1.5	1.4
U809	1.7	2.5	3.1	2.3	3.3	2.4	2.9	2.4	3.3	1.3	1.5
U810	1.8	2.9	3.2	2.9	2.5	4.0	2.1	2.9	2.6	2.3	2.1
U811	1.4	2.1	3.0	2.3	2.4	2.3	2.5	2.3	2.5	1.3	1.6
U812	1.5	3.0	2.4	2.1	2.5	2.6	2.5	2.5	2.6	1.6	1.8
U813	1.8	2.9	3.2	3.0	2.7	3.6	3.1	3.0	2.4	1.4	1.7
U814	2.1	3.9	3.1	3.7	2.7	4.8	3.7	2.9	3.5	2.0	1.8
U815	1.7	3.3	3.2	2.7	2.2	2.9	3.3	2.5	2.6	1.9	1.6
U816	2.0	3.8	3.9	2.8	2.7	3.3	3.5	2.9	2.5	2.0	2.1
U817	2.0	4.0	3.9	3.1	2.7	4.1	3.4	3.2	2.9	2.6	2.7
U818	2.1	3.2	4.2	3.3	3.2	3.6	3.9	3.1	3.3	1.9	1.8
U819	1.4	2.2	3.2	2.0	2.4	3.0	2.3	2.0	2.4	1.5	1.8
U820	1.7	2.8	3.2	2.5	3.2	3.2	2.4	3.3	2.7	1.8	1.5
U821	2.2	3.5	4.5	3.2	2.9	3.7	4.1	2.6	3.5	2.5	2.3
U822	2.2	3.4	4.2	3.0	3.5	3.5	3.8	3.3	3.4	1.9	2.0
U823	2.4	3.7	3.8	3.8	3.2	3.5	4.1	3.5	3.5	2.4	2.3
U824	2.4	4.4	4.3	3.6	3.0	3.6	4.0	3.3	3.1	2.3	2.6
U825	1.6	3.5	2.9	2.4	2.6	2.7	3.1	2.5	2.6	1.6	1.9
U826	1.6	2.6	3.4	2.7	2.6	2.8	2.5	3.5	2.3	1.9	1.8
U827	1.9	2.8	3.6	3.3	2.7	2.6	2.7	3.2	3.8	1.8	1.5
U828	1.4	2.9	2.5	1.8	2.3	2.6	2.5	2.5	2.0	1.8	1.3
U829	1.8	3.5	3.3	2.9	2.6	3.1	2.8	3.0	2.7	2.0	1.9
U830	1.7	2.7	4.4	2.4	2.6	2.9	3.3	2.6	2.2	2.1	1.9
U831	1.2	2.6	1.9	1.8	1.9	2.4	2.5	1.9	1.8	1.2	1.4
U832	1.5	3.1	2.4	2.0	2.1	2.3	2.6	2.5	2.2	2.0	1.4
U833	1.7	2.5	2.6	2.7	2.3	2.9	2.6	2.8	2.5	1.5	1.6
U834	1.3	2.3	2.4	2.3	1.8	2.2	2.3	2.1	2.2	1.1	1.3
U835	1.5	3.1	2.7	2.3	2.5	2.6	2.7	2.3	2.3	1.5	1.4

STANDARD ERRORS

EX. NO.	NATL	REGIONAL EFFECT NE	SF	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F
U836	1.3	2.3	2.0	2.0	2.6	2.5	2.2	2.3	2.1	1.8	1.4
U837	1.6	3.1	2.5	2.3	2.2	2.3	3.2	2.2	2.3	1.5	1.2
U838	2.5	5.7	4.3	2.9	3.1	3.0	5.0	3.1	3.3	2.4	2.4
U839	1.4	2.1	2.2	2.4	2.4	2.8	2.2	2.3	2.4	1.7	1.4
U840	1.2	1.9	3.3	1.6	1.7	2.1	1.8	1.6	2.6	1.2	1.1
U841	1.1	2.1	2.2	1.5	2.4	2.2	1.8	2.2	1.7	1.1	0.9
U842	1.5	2.8	2.2	2.4	2.7	2.5	2.5	2.8	2.2	1.5	1.2
U843	1.4	1.9	2.0	2.5	2.5	2.3	2.1	2.0	2.6	1.3	1.3
U844	1.0	1.8	2.1	1.6	2.0	2.0	1.4	2.1	1.7	1.3	0.9
U845	1.1	1.8	2.1	1.8	1.7	2.3	1.8	1.9	1.7	1.1	0.9
U846	1.0	1.9	1.9	1.5	1.8	2.1	1.7	2.2	1.4	1.3	1.1
U847	1.3	2.5	1.6	2.0	1.6	1.7	2.0	2.0	2.6	1.4	1.4
U848	0.8	1.7	1.6	1.2	1.3	1.5	1.3	1.5	1.4	0.7	0.7
U849	0.9	1.8	1.3	1.4	1.6	2.1	1.3	1.6	1.4	0.8	0.9
U850	0.8	0.9	0.8	1.5	1.0	0.9	0.9	1.9	1.1	0.8	0.8
U851	0.5	1.2	1.0	0.6	1.0	0.9	1.0	1.0	0.6	0.5	0.6
R339	0.0	3.7	3.0	2.9	2.7	2.9	3.1	3.1	2.4	1.5	1.5
R340	1.8	3.9	3.1	2.2	2.8	3.1	3.0	2.3	2.7	1.7	1.9
R341	2.1	3.0	5.3	3.1	3.3	3.5	2.9	3.6	4.1	2.1	2.4
R342	1.7	3.3	3.3	2.5	3.1	3.4	2.3	3.0	2.9	1.8	2.2
R343	1.7	3.2	2.8	2.8	2.3	3.7	2.8	3.0	2.5	2.0	1.8
R344	2.4	3.6	4.8	3.6	4.3	4.1	4.0	4.6	3.6	2.6	2.5
R345	2.3	4.2	5.8	2.8	3.1	3.4	4.2	2.9	2.9	3.0	2.4
R346	1.5	3.5	2.9	2.0	2.5	2.8	2.5	2.8	2.3	1.6	1.9
R347	1.2	2.7	1.9	1.9	1.8	2.4	2.4	1.9	1.9	1.2	0.9
R348	1.5	3.2	1.7	2.0	2.8	2.5	2.5	2.8	2.2	1.4	1.4
U852	2.5	3.4	5.7	3.5	3.5	3.5	3.4	3.9	4.3	2.0	3.1
U853	2.3	3.6	5.0	3.4	3.1	4.4	4.2	3.2	3.0	2.2	2.2
U854	2.2	3.4	4.7	3.7	2.4	4.7	3.5	3.1	4.0	2.0	2.0
U855	1.8	2.7	3.8	2.6	2.9	3.2	2.6	3.2	2.9	1.7	1.6
U856	2.1	3.3	5.4	3.2	2.7	4.1	3.3	3.6	3.3	2.0	1.8
U857	2.1	4.3	4.1	3.0	2.9	3.1	3.1	3.0	3.3	2.1	2.1
U858	1.7	4.0	3.3	2.2	2.3	2.5	3.7	2.7	2.4	1.7	1.6
U859	2.8	4.5	4.7	4.1	4.7	5.3	4.4	3.8	5.8	2.0	2.9
U860	2.3	4.1	3.6	3.6	3.9	3.8	3.8	3.6	4.3	2.3	2.1
U861	2.6	5.6	3.5	3.3	4.6	3.9	4.0	4.3	4.5	2.2	2.4
U862	2.2	3.9	4.5	3.2	3.1	3.5	3.8	3.4	3.6	2.3	2.5
U863	2.1	3.4	3.5	3.3	3.7	3.8	3.8	3.1	3.4	2.1	1.9
U864	1.6	3.5	2.1	2.5	2.6	2.7	3.1	2.5	2.6	1.5	1.2
U865	1.3	2.6	2.6	2.1	1.7	3.1	1.9	1.9	2.3	1.4	1.4
R349	1.0	1.8	1.8	1.6	1.3	2.1	1.0	1.7	1.9	1.4	1.0
R350	1.5	2.6	3.3	2.3	2.2	3.6	2.3	2.7	2.2	1.4	1.3
R351	1.4	2.7	2.3	2.2	2.0	2.7	1.9	2.3	2.5	1.6	1.4

STANDARD ERRORS

EX. NO.	NATL	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F
U866	1.5	2.4	2.1	2.3	3.4	3.2	2.5	2.2	2.5	1.6	1.8
U867	1.6	2.3	4.3	2.1	2.3	2.5	2.8	2.3	2.2	2.2	2.4
U868	2.3	5.3	2.4	2.5	2.4	2.4	4.3	2.7	2.3	2.1	2.1
R352	1.4	2.1	3.1	2.0	2.0	2.7	1.9	2.0	2.5	1.6	1.2
R353	1.5	2.1	3.1	2.4	2.5	3.1	2.1	2.3	2.6	1.6	1.5
R354	0.9	1.6	1.6	1.4	1.5	1.5	2.0	1.7	1.1	1.0	0.8
U869	0.8	1.3	1.5	1.3	1.3	1.5	1.5	1.1	1.2	0.8	0.9
U870	0.8	2.0	1.0	1.0	1.3	1.2	1.6	1.1	1.0	0.8	0.8
(Adult)											
R401	0.8	0.9	2.2	1.3	1.1	1.7	0.8	1.6	1.6	0.9	0.8
R402	1.2	1.7	3.0	1.6	1.5	2.7	1.6	2.0	2.0	1.1	1.0
R403	1.4	2.2	3.6	2.1	2.0	2.3	2.3	2.0	2.5	1.9	2.0
R404	1.9	3.5	3.7	2.4	3.1	3.1	2.8	3.5	2.7	2.0	1.8
R405	2.2	4.0	4.5	2.9	4.1	4.7	3.1	3.6	3.1	2.6	2.1
R406	2.3	3.7	4.5	3.2	3.9	4.2	2.7	3.4	3.3	2.0	1.8
R407	2.5	4.5	5.6	3.2	4.5	5.4	3.0	4.2	3.5	2.0	1.8
R408	1.9	3.1	3.3	2.9	3.5	4.4	3.0	2.7	2.9	2.1	2.1
R409	2.9	5.0	5.0	4.3	4.7	5.1	3.1	4.7	4.6	2.0	1.9
R410	2.8	4.7	4.4	4.2	4.1	4.5	4.1	4.1	3.7	2.4	2.5
R411	3.0	5.2	7.1	4.0	5.1	4.6	3.8	4.8	3.8	2.5	2.3
R412	2.6	4.7	5.5	3.1	4.4	4.8	3.3	4.0	3.7	2.3	2.0
R413	1.9	2.6	4.1	3.0	3.6	3.9	2.6	3.4	3.4	2.1	1.8
R414	2.2	3.5	4.3	3.3	3.9	5.3	2.8	3.3	4.1	2.4	2.2
R415	2.8	5.0	3.8	3.7	4.9	4.9	3.9	3.7	4.0	2.1	2.2
R416	1.9	2.9	3.5	3.1	3.5	4.5	2.4	3.4	3.9	2.0	1.8
R417	3.1	4.7	8.7	4.1	4.9	4.5	4.1	3.9	4.6	1.9	1.9
R418	2.5	3.9	4.0	4.0	5.1	4.7	3.8	3.7	4.5	2.1	2.1
R419	2.3	3.7	4.5	3.5	4.4	3.4	3.4	4.4	3.3	2.5	2.3
R420	2.4	4.1	3.6	3.5	4.2	4.8	3.5	4.6	3.3	2.4	2.0
R421	2.6	4.7	4.3	3.2	4.6	4.4	4.2	4.3	3.5	2.2	2.0
R422	2.7	4.7	4.1	3.6	4.7	4.6	4.1	4.8	3.9	2.6	2.5
R423	3.1	4.9	4.1	4.5	5.7	5.1	5.2	5.0	3.9	3.1	3.1
R424	2.7	5.5	4.9	3.3	4.1	4.6	4.2	4.0	3.7	2.5	2.3
R425	2.0	3.1	3.8	3.1	4.1	4.4	2.8	3.6	3.1	2.0	2.0
R426	2.4	4.1	4.1	3.3	4.5	6.2	4.0	3.8	3.5	2.9	2.4
R427	2.3	3.6	4.3	3.6	4.1	5.1	3.1	3.8	3.9	2.4	2.1
R428	2.2	3.6	3.6	3.6	3.9	4.0	3.3	3.7	3.1	2.0	1.8
R429	2.6	4.2	3.6	3.7	5.2	4.3	4.0	3.9	3.4	2.1	2.1
R430	1.8	2.6	2.8	2.9	3.4	4.2	2.4	2.8	2.3	1.9	2.1
R431	1.9	2.7	4.2	2.6	4.3	2.6	2.9	3.5	2.8	2.1	1.9
R432	2.3	3.3	4.5	3.2	4.0	5.6	4.4	3.2	2.8	2.1	1.8
R433	2.0	2.8	2.7	3.0	4.5	3.7	3.3	2.6	2.4	1.8	1.8

STANDARD ERRORS

EX. NO.	NATL	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F
R434	0.7	1.0	1.2	1.1	1.3	1.7	0.8	1.1	1.2	0.7	0.6
U901	0.6	1.0	1.2	0.7	1.1	1.6	0.7	0.9	1.0	0.6	0.6
U902	1.0	1.4	2.4	1.6	1.5	1.8	1.4	1.7	1.6	0.9	0.8
U903	1.3	2.1	2.2	2.4	2.0	3.4	1.9	1.8	1.9	1.1	1.0
U904	1.2	1.7	3.4	2.1	1.5	2.3	1.7	2.0	2.2	1.3	1.2
U905	1.4	2.3	3.6	1.8	2.4	3.4	1.4	2.9	2.3	1.4	1.3
U906	1.1	1.9	2.5	1.7	2.1	2.3	1.7	1.8	1.9	1.2	1.2
U907	1.4	2.3	3.0	2.1	2.6	2.5	2.0	2.8	2.4	1.7	1.5
U908	1.3	2.0	3.7	1.8	2.3	2.7	1.8	2.0	2.4	1.4	1.3
U909	1.6	3.1	3.9	2.1	3.0	3.9	2.1	2.5	2.8	1.7	1.6
U910	1.9	3.3	4.3	2.4	2.6	3.3	3.2	2.4	2.5	1.9	1.7
U911	1.6	2.5	3.3	2.6	2.9	3.4	2.2	2.6	2.9	1.9	1.8
U912	1.8	3.3	3.6	2.3	3.5	3.1	3.6	2.7	3.1	2.0	1.7
U913	1.7	2.6	2.8	2.4	2.8	3.8	2.5	2.5	2.8	1.7	1.7
U914	1.8	2.8	3.8	2.8	2.9	3.6	2.3	3.3	2.8	1.6	1.5
U915	2.2	3.8	3.1	3.0	4.3	5.9	3.8	3.1	3.2	2.2	1.8
U916	2.0	2.9	4.3	3.0	4.2	4.0	2.6	3.4	3.4	2.0	1.9
U917	1.9	2.9	4.2	2.9	3.5	4.5	2.6	2.8	3.4	1.8	1.7
U918	2.3	3.9	4.6	3.0	4.6	4.2	3.1	4.3	3.9	2.6	2.3
U919	2.4	3.4	6.2	3.5	4.4	4.6	3.5	3.1	4.2	2.9	2.7
U920	2.6	4.5	5.2	3.4	4.6	4.0	4.0	3.8	4.0	2.8	2.2
U921	2.1	4.1	4.1	3.1	3.8	4.0	3.6	3.3	3.8	2.9	2.4
U922	2.5	5.1	5.4	3.1	4.6	4.8	3.4	3.8	4.1	2.2	1.9
U923	2.6	4.4	4.9	3.5	4.3	4.8	4.0	3.9	4.0	2.3	2.3
U924	2.6	3.9	5.1	3.8	4.8	4.1	3.7	4.8	3.8	2.5	2.2
U925	3.2	5.6	7.8	4.0	5.4	4.6	4.7	4.8	4.8	3.0	2.7
U926	2.7	5.5	5.2	3.8	4.5	4.9	6.3	3.8	3.9	2.6	2.2
U927	2.4	4.5	3.8	3.3	3.9	5.0	3.1	3.6	3.3	2.5	2.3
U928	2.2	2.9	5.8	3.1	4.8	4.4	3.2	3.5	3.3	2.6	2.4
U929	2.4	4.1	4.1	3.4	5.1	4.3	3.7	4.2	4.0	2.9	2.8
U930	2.5	4.1	4.7	3.6	4.5	4.8	3.7	3.7	4.0	2.4	2.4
U931	2.5	4.0	5.6	3.4	4.8	4.4	3.4	4.4	3.7	2.3	2.2
U932	2.0	3.1	2.8	3.1	4.0	4.4	2.8	2.9	3.0	2.2	2.1
U933	2.6	4.3	3.7	3.8	4.8	4.1	3.8	4.3	3.2	2.1	1.9
U934	2.1	2.5	2.7	2.8	6.2	3.5	3.6	2.5	3.1	2.1	2.1
U935	1.9	3.1	3.3	3.0	3.2	3.4	2.8	2.9	2.8	1.7	1.8
U936	1.9	3.4	3.2	2.7	3.2	3.7	2.8	3.3	2.8	2.0	1.9
U937	1.9	3.0	4.1	2.4	4.0	3.4	2.8	3.3	2.8	2.5	2.3
U938	2.1	3.2	3.4	3.3	3.9	4.5	2.9	3.3	3.3	2.3	2.1
U939	2.1	3.2	4.2	3.1	3.9	3.2	3.0	3.8	3.5	1.8	1.6
U940	2.6	4.8	6.8	3.3	4.2	5.2	3.4	3.4	3.9	2.4	2.7
U941	2.1	3.5	3.1	3.0	4.1	3.5	3.0	3.2	2.6	1.9	1.8
U942	2.0	2.6	4.4	2.7	2.9	5.1	3.9	2.7	2.7	2.2	1.8

STANDARD ERRORS

EX. NO.	NATL	REGIONAL EFFECT NE	SE	C	W	SIZE-OF-COMMUNITY EFFECT BIG CITY	URBAN FRINGE	MED CITY	SMALL PLACE	SEX EFFECT M	F
U943	1.9	2.7	5.4	2.2	3.3	3.9	2.3	4.1	2.5	2.0	1.8
U944	1.6	2.7	2.1	2.1	3.3	3.2	2.5	2.4	2.0	1.6	1.5
U945	1.4	2.5	2.6	2.0	3.1	2.9	1.9	3.1	2.0	1.8	1.6
U946	1.6	2.1	4.1	2.2	3.0	2.7	2.2	3.1	1.9	1.5	1.4
U947	1.8	3.7	2.1	2.3	2.8	2.6	3.0	2.3	2.4	1.2	1.1
U948	1.9	2.6	3.3	2.2	5.8	2.4	3.3	2.6	2.6	2.0	2.0
U949	0.8	1.5	1.5	1.3	1.3	1.7	1.0	1.1	1.9	0.9	0.9
U950	2.3	3.4	5.2	3.3	4.9	4.9	3.2	3.8	3.5	2.5	2.3
U951	1.2	1.4	3.6	1.7	1.4	1.8	1.9	2.2	1.8	1.3	1.2
R435	0.7	1.3	1.5	1.1	0.9	1.4	1.1	1.0	1.4	0.9	0.8
R436	0.8	1.3	1.5	1.3	1.5	1.8	1.2	1.0	1.7	1.1	1.0
R437	1.3	2.5	2.8	1.9	1.6	3.5	1.6	2.4	1.9	1.5	1.4
R438	4.4	6.5	7.8	6.9	7.4	7.6	8.4	6.9	6.1	3.9	3.8
R439	2.1	4.2	4.1	2.9	3.9	4.4	3.1	3.5	3.3	2.2	2.0
R440	2.9	5.1	5.1	3.8	5.2	4.8	3.8	4.6	5.1	2.1	2.2
R441	3.6	7.9	6.6	4.4	6.2	7.6	4.7	6.1	5.7	3.7	3.5
R442	2.2	4.0	3.3	3.0	4.3	4.4	2.9	3.9	3.2	2.4	2.2
R443	2.4	3.7	5.7	3.8	4.1	5.0	3.3	4.0	3.7	2.4	2.2
R444	2.4	4.0	4.0	3.1	5.5	4.3	3.5	3.5	3.4	2.0	2.0
R445	2.6	4.1	4.5	4.5	2.8	4.4	6.2	3.7	3.2	2.9	2.7
U952	0.9	1.5	2.0	1.2	1.3	2.7	1.0	1.2	1.7	0.8	0.8
U953	1.2	2.1	2.4	1.6	1.7	2.0	1.4	2.4	1.6	1.2	1.0
U954	2.0	3.0	5.7	2.7	2.9	3.7	3.4	2.6	3.2	1.9	1.8
U955	4.4	6.6	7.4	7.4	7.6	8.5	7.2	6.9	7.5	4.3	3.9
U956	4.5	6.9	4.9	6.5	9.7	12.2	8.3	6.1	7.2	3.9	2.6
U957	5.8	7.8	7.8	7.8	9.6	12.6	12.6	7.1	8.1	5.1	3.2
U958	2.3	3.5	4.7	3.2	4.6	4.6	3.4	3.8	3.8	2.0	2.0
U959	2.7	4.9	3.6	3.5	5.7	4.9	4.6	3.3	3.3	2.9	2.7
U960	4.0	6.1	6.3	6.6	5.7	5.0	8.0	6.4	5.6	2.8	3.0
U961	4.5	6.1	6.8	5.8	7.0	5.9	8.2	6.0	6.0	3.9	4.3
U962	4.5	5.4	7.2	6.3	6.0	11.6	8.5	5.4	6.8	4.4	3.0
U963	3.4	5.0	3.8	5.8	6.4	7.0	6.9	5.3	4.7	3.8	3.5
U964	4.4	5.2	7.1	6.0	7.3	11.2	7.6	5.6	6.6	4.3	2.9
R446	2.4	4.3	4.2	3.2	5.1	3.9	3.4	3.5	3.3	2.5	2.3
R447	2.5	4.1	5.9	3.2	3.9	6.1	4.6	3.6	3.2	3.0	2.5
U965	2.3	3.3	4.5	3.7	4.3	5.3	3.1	3.7	4.3	2.4	2.5
U966	2.1	3.2	3.4	3.0	4.4	4.0	2.9	3.0	3.5	1.8	1.8
U967	1.7	3.4	2.4	2.3	2.7	4.0	2.5	2.5	2.0	1.9	1.8
R448	1.8	2.2	4.1	2.8	3.1	2.7	2.9	2.8	2.8	1.9	1.8
R449	2.0	3.9	4.1	2.6	4.2	4.3	3.6	2.9	3.0	2.5	2.1
U968	2.5	3.5	5.3	3.7	5.5	4.3	3.6	5.1	3.7	2.3	2.1
U969	2.6	4.4	5.6	3.4	4.8	4.6	3.5	5.2	3.2	2.8	2.5
U970	2.1	2.8	3.5	2.6	5.8	4.2	3.0	2.5	2.9	2.2	2.1