U.S. Department of Justice
Bureau of Justice Statistics

The National Survey of Crime Severity

An accurate measure of the seriousness with which society views a broad range of criminal events would be helpful to lawmakers and policymakers.

It could provide a measure of the appropriateness of sentencing practices and it could assist in the allocation of scarce justice resources.

It could even indicate more accurately than at present whether crime is increasing or decreasing and by how much.

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Technical standards for machine-readable data supplied to BJS, NCJ-75318, 6/81

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The National Survey of Crime Severity

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Foreword

This report presents the seriousness scores for the full set of offenses measured in the National Survey of Crime Severity (NSCS), conducted in 1977 as a supplement to the National Crime Survey. The NSCS was designed, developed, and conducted by the Center for Studies in Criminology and Criminal Law, Wharton School, University of Pennsylvania. It was directed by Dr. Marvin E. Wolfgang with Dr. Robert M. Figlio.

The bureau will also publish a series of special reports highlighting the severity scores of various population groups.

The severity index represents an innovative way of looking at crimes. It points toward priorities and reaffirms basic values. Two areas of crime about which the public is clearly concerned—drug trafficking and white-collar crime—are major program thrusts of the U.S. Department of Justice. More developmental work is needed before a crime rate weighted by the seriousness of the crimes is possible, but the prospects are exciting. One day, perhaps, seriousness scores may be used routinely to investigate whether criminal career patterns involve crimes of an increasingly serious nature.

Steven R. Schlesinger
Director

Preface

This work is reported in two volumes. This volume presents a general description of the study, overall findings, analytical results, and suggestions for use.

Another volume, the *Sourcebook of Crime Severity Ratios for Core-Item Offenses*, presents crime severity ratios for various demographic characteristics by Census regions, Census divisions, OMB regions, States, SMSAs, major cities, and the total U.S. population. Because of its length and technical nature, it is available only in microfiche. One copy of the Sourcebook microfiche is available free (order no. NCJ-96329) from the National Criminal Justice Reference Service, Box 6000, Rockville, MD. 20850; 301/251-5500 or toll-free 800/732-3277.

The contents of the Sourcebook are shown following the table of contents of this volume.

Executive summary

How serious is a murder? Or a rape? Or, for that matter, a petty theft? Do such questions have any meaning? Would their answers have any utility?

Implicit judgments about the severity of crime are imbedded in our social institutions. Requiring the death penalty for certain crimes designates them as the most serious that can occur in this society. Crimes labeled felonies are considered more serious than those labeled misdemeanors. Crimes that can incur life sentences are more serious than those that receive prison sentences of only a few years.

Still, the seriousness of a crime is by no means clear-cut or immutable. In 1976 the rape of an adult woman was changed from a capital to a noncapital offense. The penalty for an offense in one State may be substantially different from the penalty for the same offense in another State. Even within one jurisdiction, the disparity in the sentences meted out by different judges for the same offense has been repeatedly noted with concern by criminal justice scholars. Much of the impetus behind recent determinate and mandatory sentencing legislation has come from the wish to minimize sentencing disparity.

When we speak of crimes such as robbery or burglary, we are speaking of legal categories rather than specific crimes. Although all "robberies" possess the characteristics necessary to be legally classified as such, they can vary in their particulars to an extraordinary degree. These variations, in all their complexity, seldom find their way into the penal code. They may or may not be taken into consideration by the sentencing judge. This wide range of possibilities within each crime type further confounds the seriousness issue. Robbery, because it involves personal confrontation and force or threat of force, is generally considered more serious than burglary. Yet most people would probably see the loss of several masterpieces in a museum burglary as more serious than the loss of lunch money in a schoolyard robbery.

Criminologists and criminal justice researchers have been interested in methods of determining the seriousness of criminal events for many years. An accurate measure of the seriousness with which society views a broad range of criminal events would be helpful to lawmakers and policymakers. It could provide a measure of the appropriateness of sentencing practices and it could assist in the allocation of scarce criminal justice resources. It could even indicate more accurately than at present whether crime is increasing or decreasing and by how much.

The two basic sources of information on the national crime rate are the FBI's Uniform Crime Reports (UCR) and BJS' National Crime Survey (NCS).* In the crime index, the UCR counts the total number of murders, rapes, robberies, aggravated assaults, burglaries, and thefts reported to the police during the year. Through a survey of households across the Nation, the National Crime Survey collects information on the total number of rapes, robberies, assaults, burglaries, and thefts committed during the year. In computing crime rates and victimization rates from one year to the next, both the UCR and the NCS treat each type of crime as equally important. An increase of 100 pocket pickings affects the crime rate just as much as an increase of 100 murders, and 100 rapes affect the violent victimization rate as much as 100 simple assaults, which can be no more than a verbal threat of physical harm.

Intuition says that this is not completely right; 100 pocket pickings are not equal to 100 murders or 100 simple assaults to 100 rapes in the amount of injury they do or in the amount of anguish and fear they create. Clearly, murders and rapes should count more, but how much more? Even within a single crime category, shouldn't certain events count more than others? For example, isn't a robbery in which the victim is shot more serious than one in which the offender is unarmed? How much more serious?

To pursue answers to questions such as these, a survey of the seriousness of crime was conducted in 1977 as a supplement to the NCS. The survey, which included 60,000 persons 18 years of age or older, was the largest ever made of how the general public ranks the seriousness of a wide range of crimes.

Developing, conducting, and compiling the results of the severity study was a complex process using highly sophisticated mathematical techniques. For the

*See *Measuring Crime*, BJS Bulletin, February 1981, NCJ-75710.

respondents, though, the process was relatively simple. They were each given a description of a crime, "A person steals a bicycle parked on the street," and told that the seriousness of this crime was 10. They were then given a list of other crimes and told to compare them in seriousness to the bicycle theft. If a crime seemed to be twice as serious, they were to rate it at 20. If it were four times as serious, they were to rate it 40, and so on. Each person rated 25 crimes, but not everyone had the same 25. Overall, 204 items, each of which was illegal in at least one State, were rated.

Combining the ratings given by each of the 60,000 respondents, a single severity score was developed for each of the 204 items by scaling all responses as ratios to the severity of a theft of one dollar. These are shown in the table of severity scores. The scores range from 72.1 for "planting a bomb in a public building. The bomb explodes and 20 people are killed" to 0.2 for "A person under 16 years old plays hooky from school." The scores represent the relationship of one crime to another in terms of seriousness. A crime with a rating of 20 is considered by the general public to be twice as serious as a crime rated 10, which in turn is twice as serious as a crime rated 5.

Each of the items in the survey is quite specific as to the details of the crime and its consequences. These consequences strongly affect the ratings, a fact that is repeatedly apparent when similar crimes with different outcomes are examined. For example, the items scored 72.1, 43.9, 33.0, and 24.5 are all the same, planting a bomb that goes off in a public building. The outcomes range from 20 people killed to no one injured, and the scores descend in seriousness reflecting the differing outcomes. The crime scored 30.5 is an apparent inconsistency. More injury occurred in this incident (20 people hurt) than in the one scored 33.0 (one person hurt). A few other such apparently inconsistent ratings appear in the table. These may simply be due to the fact that no one saw all 204 items. Persons scoring the item where 20 people were injured may not have had the item where only one was injured with which to compare it.

When the outcome is not physical violence, but property loss, the same attention to detail is reflected among the scores. For example, in both item 21.0 and item 17.9, the victim was shot and required hospitalization. The different scores reflect the amount of money the robber took, $1,000 in the first case and $10 in the second.

The relationship of the victim to the offender and the ability of the victims to defend themselves both seem to be taken into consideration in assigning scores. The death of a child at the hands of its parent (47.8) is more serious than a husband's fatally stabbing his wife (39.2), which in turn is more serious than a wife's killing her husband (27.9).

The overall pattern of severity scores indicates that people clearly regard violent crimes as more serious than property offenses. They also take white-collar crime and drug dealing quite seriously, rating two offenses of this type higher than some forms of homicide. One of the highest scores (39.1) is awarded to a factory that causes the death of 20 people by knowingly polluting the city water supply. Running a narcotics ring (33.8) is regarded more seriously than skyjacking (32.7) and selling heroin for resale (20.6) more seriously than rape if the woman's injuries do not require hospitalization (20.1).

In general, people tend to agree about the severity of specific crimes. A few differences appear, however, when the scores of different groups are examined. For example, blacks and members of other racial groups in general assign lower scores than whites. Older people found thefts of large amounts to be more serious than people in younger age brackets. Men and women, however, did not differ in any significant way in their overall scoring pattern. As might be expected, victims assign higher scores than nonvictims.

Methodology

The National Survey of Crime Severity was conducted as a supplement to the National Crime Survey over a 6-month period beginning in July 1977. A total of 60,000 persons participated in the survey, each rating the seriousness of 25 specific criminal events. Twelve different forms were used, each with a different set of items, so that the total of items scored was 204. Some items appeared on more than one form, and five practice items appeared on all of the forms:

"A person steals a bicycle parked on the street." (Assigned a score of 10 as a starting point; however, this assigned score cannot be compared with the ratio scores presented in the findings; this item was used as a modulus or example and was not included in the data analysis from which the ratio scores were derived.)

"A person robs a victim. The victim is injured but not hospitalized."

"A person under 16 years old plays hooky from school." (received the lowest score)

"A person stabs a victim to death."

"A person plants a bomb in a public building. The bomb explodes and 20 people are killed." (received the highest severity score)

The persons interviewed were all 18 years of age or older and were members of households that composed half of the National Crime Survey (NCS) sample. The NCS conducts interviews in 60,000 households forming a stratified random sample representative of the entire Nation.

How do people rank the severity of crime?

Severity score and offense

72.1—A person plants a bomb in a public building. The bomb explodes and 20 people are killed.

52.8—A man forcibly rapes a woman. As a result of physical injuries, she dies.

47.8—A parent beats his young child with his fists. As a result, the child dies.

43.9—A person plants a bomb in a public building. The bomb explodes and one person is killed.

43.2—A person robs a victim at gunpoint. The victim struggles and is shot to death.

39.2—A man stabs his wife. As a result, she dies.

39.1—A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result, 20 people die.

35.7—A person stabs a victim to death.

35.6—A person intentionally injures a victim. As a result, the victim dies.

33.8—A person runs a narcotics ring.

33.0—A person plants a bomb in a public building. The bomb explodes and one person is injured but no medical treatment is required.

32.7—An armed person skyjacks an airplane and holds the crew and passengers hostage until a ransom is paid.

30.5—A person plants a bomb in a public building. The bomb explodes and 20 people are injured but no medical treatment is required.

30.0—A man forcibly rapes a woman. Her physical injuries require hospitalization.

27.9—A woman stabs her husband. As a result, he dies.

26.3—An armed person skyjacks an airplane and demands to be flown to another country.

25.8—A man forcibly rapes a woman. No other physical injury occurs.

25.2—A man tries to entice a minor into his car for immoral purposes.

24.9—A person intentionally sets fire to a building causing $100,000 worth of damage.

24.8—A person intentionally shoots a victim with a gun. The victim requires hospitalization.

24.5—A person plants a bomb in a public building. The bomb explodes but no one is injured.

24.5—A person kidnaps a victim. A ransom of $1,000 is paid and the victim is returned unharmed.

22.9—A parent beats his young child with his fists. The child requires hospitalization.

22.3—A person intentionally sets fire to a building causing $500,000 worth of damage.

21.7—A person pays another person to commit a serious crime.

21.2—A person kidnaps a victim.

21.0—A person robs a victim of $1,000 at gunpoint. The victim is wounded and requires hospitalization.

20.6—A person sells heroin to others for resale.

20.1—A man forcibly rapes a woman. Her physical injuries require treatment by a doctor but not hospitalization.

19.9—A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result one person dies.

19.7—A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result 20 people become ill but none require medical treatment.

19.5—A person smuggles heroin into the country.

19.5—A person kills a victim by recklessly driving an automobile.

19.5—A high school boy beats a middle-aged woman with his fists. She requires hospitalization.

19.0—A person intentionally shoots a victim with a gun. The victim requires treatment by a doctor but not hospitalization.

18.3—A man beats his wife with his fists. She requires hospitalization.

18.0—A person stabs a victim with a knife. The victim requires hospitalization.

17.9—A person robs a victim of $10 at gunpoint. The victim is wounded and requires hospitalization.

17.8—Knowing that a shipment of cooking oil is bad, a store owner decides to sell it anyway. Only one bottle is sold and the purchaser dies.

17.8—A person intentionally shoots a victim with a gun. The victim is wounded slightly and does not require medical treatment.

17.7—A person, armed with a gun, robs a bank of $100,000 during business hours. No one is physically hurt.

17.7—An employer orders one of his employees to commit a serious crime.

17.5—A high school boy beats an elderly woman with his fists. She requires hospitalization.

17.1—A person stabs a victim with a knife. The victim requires treatment by a doctor but not hospitalization.

16.9—A legislator takes a bribe of $10,000 from a company to vote for a law favoring the company.

16.9—A man drags a woman into an alley, tears her clothes, but flees before she is physically harmed or sexually attacked.

16.8—A person, using force, robs a victim of $1,000. The victim is hurt and requires hospitalization.

16.6—A person, using force, robs a victim of $1,000. The victim is hurt and requires treatment by a doctor but not hospitalization.

16.5—A person robs a victim of $1,000 at gunpoint. The victim is wounded and requires treatment by a doctor but not hospitalization.

16.4—A person attempts to kill a victim with a gun. The gun misfires and the victim escapes unharmed.

15.9—A teenage boy beats his mother with his fists. The mother requires hospitalization.

15.7—A county judge takes a bribe to give a light sentence in a criminal case.

15.7—A person robs a victim of $10 at gunpoint. The victim is wounded and requires treatment by a doctor but not hospitalization.

15.6—A person, armed with a lead pipe, robs a victim of $1,000. The victim is injured and requires hospitalization.

15.5—A person breaks into a bank at night and steals $100,000.

14.6—A person, using force, robs a victim of $10. The victim is hurt and requires hospitalization.

14.5—A company pays a bribe of $100,000 to a legislator to vote for a law favoring the company.

14.1—A doctor cheats on claims he makes to a Federal health insurance plan for patient services.

13.9—A legislator takes a bribe from a company to vote for a law favoring the company.

13.7—A person, armed with a lead pipe, robs a victim of $1,000. The victim is injured and requires treatment by a doctor but not hospitalization.

13.5—A doctor cheats on claims he makes to a Federal health insurance plan for patient services. He gains $10,000.

13.4—An employer orders his employees to make false entries on documents that the court has requested for a criminal trial.

13.3—A person, armed with a lead pipe, robs a victim of $10. The victim is injured and requires hospitalization.

13.0—A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city.

12.7—A person intentionally sets fire to a building causing $10,000 worth of damage.

12.2—A person pays a witness to give false testimony in a criminal trial.

12.0—A person gives the floor plans of a bank to a bank robber.

12.0—A police officer takes a bribe not to interfere with an illegal gambling operation.

11.9—A person intentionally injures a victim. The victim is treated by a doctor and hospitalized.

11.8—A person stabs a victim with a knife. No medical treatment is required.

11.8—A man beats a stranger with his fists. He requires hospitalization.

11.7—Ten high school boys beat a male classmate with their fists. He requires hospitalization.

11.4—A person knowingly lies under oath during a trial.

11.3—Three high school boys beat a male classmate with their fists. He requires hospitalization.

11.2—A company pays a bribe to a legislator to vote for a law favoring the company.

10.9—A person steals property worth $10,000 from outside a building.

10.8—A person steals a locked car and sells it.

10.5—A person smuggles marijuana into the country for resale.

10.4—A person intentionally hits a victim with a lead pipe. The victim requires hospitalization.

10.3—A person illegally sells barbiturates, such as prescription sleeping pills, to others for resale.

10.3—A person operates a store where he knowingly sells stolen property.

10.3—A person threatens to harm a victim unless the victim gives him money. The victim gives him $1,000 and is not harmed.

10.0—A government official intentionally hinders the investigation of a criminal offense.

9.7—A person breaks into a department store, forces open a safe, and steals $1,000.

9.7—A person breaks into a school and steals equipment worth $1,000.

9.7—A person robs a victim of $1,000 at gunpoint. No physical harm occurs.

9.7—A person walks into a public museum and steals a painting worth $1,000.

9.7—A person breaks into a display case in a store and steals $1,000 worth of merchandise.

9.6—A person breaks into a home and steals $1,000.

9.6—A police officer knowingly makes a false arrest.

9.4—A public official takes $1,000 of public money for his own use.

9.4—A person robs a victim of $10 at gunpoint. No physical harm occurs.

9.3—A person threatens to seriously injure a victim.

9.2—Several large companies illegally fix the retail prices of their products.

9.2—A person knowingly makes false entries on a document that the court has requested for a criminal trial.

9.0—A city official takes a bribe from a company for his help in getting a city building contract for the company.

9.0—A person, armed with a lead pipe, robs a victim of $1,000. No physical harm occurs.

8.9—A person intentionally hits a victim with a lead pipe. The victim requires treatment by a doctor but no hospitalization.

8.6—A person performs an illegal abortion.

8.5—A person sells marijuana to others for resale.

8.5—A person intentionally injures a victim. The victim is treated by a doctor but is not hospitalized.

8.3—A person illegally gets monthly welfare checks of $200.

8.2—Knowing that a shipment of cooking oil is bad, a store owner decides to sell it anyway. Only one bottle is sold and the purchaser is treated by a doctor but not hospitalized.

8.0—A person steals an unlocked car and sells it.

8.0—A person, using force, robs a victim of $1,000. No physical harm occurs.

7.9—A person trespasses in a railroad and steals tools worth $1,000.

7.9—A teenage boy beats his father with his fists. The father requires hospitalization.

7.9—A person intentionally hits a victim with a lead pipe. No medical treatment is required.

7.7—Knowing that a shipment of cooking oil is bad, a store owner decides to sell it anyway.

7.7—A person conceals the identity of someone that he knows has committed a serious crime.

7.6—A person steals $1,000 worth of merchandise from the counter of a department store.

7.5—A person, armed with a lead pipe, robs a victim of $10. No physical harm occurs.

7.4—A person illegally gets monthly welfare checks.

7.3—A person threatens a victim with a weapon unless the victim gives him money. The victim gives him $10 and is not harmed.

7.3—A person beats a victim with his fists. The victim is hurt but does not require medical treatment.

7.3—A person breaks into a department store and steals merchandise worth $1,000.

7.2—A person willingly hides out a bank robber.

7.2—A person signs someone else's name to a check and cashes it.

7.1—A person, armed with a lead pipe, robs a victim of $10. The victim is injured and requires treatment by a doctor but not hospitalization.

6.9—A person beats a victim with his fists. The victim requires hospitalization.

6.9—A person breaks into a public recreation center, forces open a cash box and steals $1,000.

6.9—A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result, one person becomes ill but does not require medical treatment.

6.9—A person steals property worth $1,000 from outside a building.

6.8—Because of a victim's race, a person injures a victim to prevent him from enrolling in a public school. No medical treatment is required.

6.7—A person, using force, robs a victim of $10. The victim is hurt and requires treatment by a doctor but not hospitalization.

6.6—A person does not have a weapon. He threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.

6.6—A person steals $1,000 worth of merchandise from an unlocked car.

6.5—A person uses heroin.

6.4—An employer refuses to hire a qualified person because of that person's race.

6.4—A person gets customers for a prostitute.

6.3—A person, free on bail for committing a serious crime, purposefully fails to appear in court on the day of his trial.

6.2—An employee embezzles $1,000 from his employer.

6.2—A person beats a victim with his fists. The victim requires treatment by a doctor but not hospitalization.

6.1—A person runs a prostitution racket.

6.1—A person cheats on his Federal income tax return and avoids paying $10,000 in taxes.

5.7—A theatre owner knowingly shows pornographic movies to a minor.

5.5—A person runs a place where liquor is sold without a license.

5.4—A person has some heroin for his own use.

5.4—A real estate agent refuses to sell a house to a person because of that person's race.

5.4—A person threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.

5.3—A person loans money at an illegally high interest rate.

5.1—A man runs his hands over the body of a female victim, then runs away.

5.1—A person, using force, robs a victim of $10. No physical harm occurs.

5.0—A person knowingly buys stolen property from the person who stole it.

4.9—A person snatches a handbag containing $10 from a victim on the street.

4.7—A man exposes himself in public.

4.6—A person carries a gun illegally.

4.5—A person cheats on his Federal income tax return.

4.4—A person steals an unlocked car and later abandons it undamaged.

4.4—A person picks a victim's pocket of $100.

4.4—A person robs a victim. The victim is injured but not hospitalized.

4.3—A person breaks into a public recreation center, forces open a cash box, and steals $10.

4.2—A person attempts to break into a home but runs away when a police car approaches.

3.8—A person turns in a false fire alarm.

3.7—A labor union official illegally threatens to organize a strike if an employer hires nonunion workers.

3.6—A person attempts to break into a parked car, but runs away when a police car approaches.

3.6—A person knowingly passes a bad check.

3.6—A person steals property worth $100 from outside a building.

3.5—A person runs a place where he permits gambling to occur illegally.

3.3—A person breaks into a department store, forces open a cash register, and steals $10.

3.3—A person picks a victim's pocket of $10.

3.3—A person attempts to rob a victim but runs away when a police car approaches.

3.2—A person breaks into a building and steals property worth $10.

3.2—An employer illegally threatens to fire employees if they join a labor union.

3.1—A person breaks into a home and steals $100.

3.1—A person forces open a cash register in a department store and steals $10.

3.1—A person breaks into a school and steals $10 worth of supplies.

2.9—A person steals property worth $50 from outside a building.

2.8—A person breaks into a department store and steals merchandise worth $10.

2.4—A person knowingly carries an illegal knife.

2.2—A person trespasses in a city-owned storage lot and steals equipment worth $10.

2.2—A person steals $10 worth of merchandise from the counter of a department store.

2.1—A person is found firing a rifle for which he knows he has no permit.

2.1—A woman engages in prostitution.

1.9—A person makes an obscene phone call.

1.9—An employee embezzles $10 from his employer.

1.9—A store owner knowingly puts "large" eggs into containers marked "extra-large."

1.7—A person under 16 years old is drunk in public.

1.7—A person is a customer in a place where he knows gambling occurs illegally.

1.7—A person steals property worth $10 from outside a building.

1.6—A person is a customer in a house of prostitution.

1.6—A male, over 16 years of age, has sexual relations with a willing female under 16.

1.6—A person is a customer in a place where he knows liquor is sold without a license.

1.6—A person breaks into a parking meter and steals $10 worth of nickels.

1.5—A person takes barbiturates, such as sleeping pills, without a legal prescription.

1.5—A person intentionally shoves or pushes a victim. No medical treatment is required.

1.4—A person has some barbiturates, such as sleeping pills, for his own use without a legal prescription.

1.4—A person smokes marijuana.

1.4—A person trespasses in a railroad yard and steals a lantern worth $10.

1.3—A person has some marijuana for his own use.

1.3—Two persons willingly engage in a homosexual act.

1.1—A person disturbs the neighborhood with loud, noisy behavior.

1.1—A person takes bets on the numbers.

1.1—A group continues to hang around a corner after being told to break up by a police officer.

1.1—A person under 16 years old illegally has a bottle of wine.

0.9—A person under 16 years old is reported to police by his parents as an offender because they are unable to control him.

0.8—A person under 16 years old runs away from home.

0.8—A person knowingly trespasses in a railroad yard.

0.8—A person is drunk in public.

0.7—A person under 16 years old breaks a curfew law by being out on the street after the hour permitted by law.

0.6—A person trespasses in the backyard of a private home.

0.5—A person takes part in a dice game in an alley.

0.3—A person is a vagrant. That is, he has no home and no visible means of support.

0.2—A person under 16 years old plays hooky from school.

Contents

Acknowledgments, *ii*

Foreword, *iii*

Executive summary, *v*

Chapter

1 Introduction and background, *1*

2 Cross-modal validation of the severity scale, *15*

3 The problem of additivity, *21*

4 Offender-victim-weapon types and perceived severity, *27*

5 NSCS pretesting, *31*

6 NSCS study design and administration, *39*

7 NSCS general findings, *43*

8 Regional and demographic differences in the perceived severity of crime, *51*

9 Developing and applying the scale of offense severity, *129*

Appendix

A NSCS: Interview forms, versions 1 to 12, *137*

B NSCS: Item, version, and aggregation effects in the national pretest, *149*

C NSCS: Reliability statement and standard errors: National level, Census regions and subdivisions, and OMB regions, *153*

Bibliography, *166*

Tables

Chapter 1
Introduction and background

1 Ratio scores for complex events, *9*
2 Regression equations for seven types of offenses, *10*

Chapter 2
Cross-modal validation of the severity scale

3 Cross-modality matching (CMM), *16*
4 Experiment I, *17*
5 Experiment II: Core crimes, *19*
6 Experiment III, *19*
7 Experiment IV, *19*

Chapter 3
The problem of additivity

8 Additive measurement matrix: Ratio scores for complex events, *22*
9 Slopes and intercepts: Additive measurement matrix (log_{10}), *22*

Complex vs. simple additive ratio scores:
10 Offense: Threats, *23*
11 Offense: Minor injury, *23*
12 Offense: Treated and discharged, *24*
13 Offense: Hospitalized, *24*
14 Offense: Kidnapping, *24*
15 Offense: Breaking and entering, *24*
16 Offense: Trespassing, *24*
17 Intercepts: Complex vs. simple estimates, *24*

Chapter 4
Offender-victim-weapon types and perceived severity

Ratio scores:
18 Robbery, by type of weapon, injury, and loss in dollars, *28*
19 Injury, by type of weapon, *28*
20 Dollar value of loss, by type of victim, *29*
21 Beating and stabbing offenses: Injury, by type of offender and victim, *29*

Chapter 5
The National Survey of Crime Severity pretesting

22 Items and geometric means: Written vs. oral test, *33*
23 Geometric means and ratios: Core offenses, by magnitude and 1,000-point category scales, *35*
24 Ratio scores: Power function of money, *36*

Chapter 7
NSCS General findings

25 Geometric means, by core-item-offense stimuli: Final national level, monthly estimates, and pretest, *44*
26 Severity ratios, by core-item-offense stimuli: Final national level, monthly estimates, and pretest, *44*
27 Regression constants and slopes: Dollar value of theft vs. perceived severity; final national level, monthly estimates, and pretest, *45*
28 Predicted geometric means of thefts based on power functions for samples, *45*
29 NSCS final national level: Offense stimuli items: Geometric means and ratio scores in ascending order of perceived severity, *47*

Chapter 8
Regional and demographic differences in the perceived severity of crime

30 Geometric means, by core-item-offense stimuli: Census regions, *52*
31 Regression constants and slopes: Dollar value of theft vs. perceived severity, by Census regions, *52*
32 Geometric mean ratios: Twenty deaths by bombing to a single killing, total United States by Census region, *52*
33 Geometric means, by core-item-offense stimuli: National: Race, *54*
34 Regression constants and slopes: Dollar value of theft vs. perceived severity, by Census region and race, *54*
35 Geometric mean ratios: Twenty deaths by bombing to a single killing, total United States, by Census region and race, *54*

Geometric means, by core-item-offense stimuli:
36 Northeast region: Race, *54*
37 North Central region: Race, *55*
38 South region: Race, *55*
39 West region: Race, *55*
40 National: Age, *56*
41 Northeast region: Age, *56*
42 North Central region: Age, *57*
43 South region: Age, *57*
44 West region: Age, *58*
45 Regression constants and slopes: Dollar value of theft vs. perceived severity, by Census region and age, *59*
46 Geometric mean ratios: Twenty deaths by bombing to a single killing, total United States, by Census region and age, *59*

Geometric means, by core-item-offense stimuli:
47 National: Sex, *60*
48 Northeast region: Sex, *60*
49 North Central region: Sex, *61*
50 South region: Sex, *61*
51 West region: Sex, *61*

52 Regression constants and slopes: Dollar value of theft vs. perceived severity, by Census region and sex, *61*

53 Geometric mean ratios: Twenty deaths by bombing to a single killing, total United States, by Census region and sex, *61*

Geometric means, by core-item-offense stimuli:

54 National: Occupation, *62*
55 Northeast region: Occupation, *62*
56 North Central region: Occupation, *63*
57 South region: Occupation, *63*
58 West region, Occupation, *64*
59 Regression constants and slopes: Dollar value of theft vs. perceived severity, by Census region and occupation, *65*

60 Geometric mean ratios: Twenty deaths by bombing to a single killing, total United States, by Census region and occupation, *65*

Geometric means, by core-item-offense stimuli:

61 National: Income, *66*
62 Northeast region: Income, *66*
63 North Central region: Income, *67*
64 South region: Income, *67*
65 West region: Income, *68*

66 Regression constants and slopes: Dollar value of theft vs. perceived severity, by Census region and income, *68*

67 Geometric mean ratios: Twenty deaths by bombing to a single killing, total United States, by Census region and income, *69*

Geometric means, by core-item-offense stimuli:

68 National: Educational level, *70*
69 Northeast region: Educational level, *70*
70 North Central region: Educational level, *71*
71 South region: Educational level, *71*
72 West region: Educational level, *72*

73 Regression constants and slopes: Dollar value of theft vs. perceived severity, by Census region and education, *72*

74 Geometric mean ratios: Twenty deaths by bombing to a single killing, total United States, by Census region and education, *73*

Geometric means, by core-item-offense stimuli:

75 National: Victimization experience, *74*
76 Northeast region: Victimization experience, *74*
77 North Central region: Victimization experience, *75*
78 South region: Victimization experience, *75*
79 West region: Victimization experience, *76*

80 Regression constants and slopes: Dollar value of theft vs. perceived severity, by Census region and victimization, *76*

81 Geometric mean ratios: Twenty deaths by bombing to a single killing, total United States, by Census region and victimization, *77*

Geometric means, by core-item-offense stimuli:

82 National: Age—White males, *78*
83 National: Age—White females, *78*
84 National: Age—Black males, *79*
85 National: Age—Black females, *79*
86 National: Age—Other males, *80*
87 National: Age—Other females, *80*

88 Regression constants and slopes: Dollar value of theft vs. perceived severity, by race, age, and sex, total United States, *80*

Geometric means, by core-item-offense stimuli:

89 Northeast region: Age—White males, *82*
90 Northeast region: Age—White females, *82*
91 Northeast region: Age—Black males, *83*
92 Northeast region: Age—Black females, *83*
93 North Central region: Age—White males, *84*
94 North Central region: Age—White females, *84*
95 North Central region: Age—Black males, *85*
96 North Central region: Age—Black females, *85*
97 South region: Age—White males, *86*
98 South region: Age—White females, *86*
99 South region: Age—Black males, *87*
100 South region: Age—Black females, *87*
101 West region: Age—White males, *88*
102 West region: Age—White females, *88*
103 West region: Age—Black males, *89*
104 West region: Age—Black females, *89*

Regression constants and slopes: Dollar value of theft vs. perceived severity, by race, age, and sex:

105 Northeast Census region, *90*
106 North Central Census region, *90*
107 South Census region, *91*
108 West Census region, *91*

Geometric means, by core-item-offense stimuli:

109 National: Income—White collar, *92*
110 National: Income—Blue collar, *92*
111 National: Income—Farm, *93*
112 National: Income—Service, *93*
113 National: Income—Armed Forces, *94*
114 National: Income—Occupation not available, *94*

115 Regression constants and slopes: Dollar value of theft vs. perceived severity, by occupation and family income: Total United States, *95*

Geometric means, by core-item-offense stimuli:

116 Northeast region: Income—White collar, *96*
117 Northeast region: Income—Blue collar, *96*
118 Northeast region: Income—Farm, *97*
119 Northeast region: Income—Service, *97*
120 Northeast region: Income—Occupation not available, *98*
121 North Central region: Income—White collar, *99*
122 North Central region: Income—Blue collar, *99*
123 North Central region: Income—Farm, *100*
124 North Central region: Income—Service, *100*
125 North Central region: Income—Occupation not available, *101*
126 South region: Income—White collar, *102*
127 South region: Income—Blue collar, *102*
128 South region: Income—Farm, *103*
129 South region: Income—Service, *103*
130 South region: Income—Occupation not available, *104*
131 West region: Income—White collar, *105*
132 West region: Income—Blue collar, *105*
133 West region: Income—Farm, *106*
134 West region: Income—Service, *106*
135 West region: Income—Occupation not available, *107*

Regression constants and slopes: Dollar value of theft vs. perceived severity, by occupation and income:

136 Northeast Census region, *108*
137 North Central Census region, *108*
138 South Census region, *108*
139 West Census region, *109*

Geometric means, by core-item-offense stimuli:

140 National: Income—White, *110*
141 National: Income—Black, *111*
142 National: Income—Other, *111*

143 Regression constants and slopes: Dollar value of theft vs. perceived severity, by race and family income: Total United States, *111*

Geometric means, by core-item-offense stimuli:

144 Northeast region: Income—White, *112*
145 Northeast region: Income—Black, *112*
146 North Central region: Income—White, *113*
147 North Central region: Income—Black, *113*
148 South region: Income—White, *114*
149 South region: Income—Black, *114*

150 West region: Income—White, *115*
151 West region: Income—Black, *115*

152 Regression constants and slopes: Dollar value of theft vs. perceived severity, by race and family income: United States, by Census regions, *116*

Geometric means, by core-item-offense stimuli:

153 National: Victimization experience —White, *118*
154 National: Victimization experience —Black, *118*
155 National: Victimization experience —Other, *119*
156 Northeast region: Victimization experience —White, *120*
157 Northeast region: Victimization experience —Black, *120*
158 North Central region: Victimization experience—White, *121*
159 North Central region: Victimization experience—Black, *121*
160 South region: Victimization experience —White, *122*
161 South region: Victimization experience —Black, *122*
162 West region: Victimization experience—White, *123*
163 West region: Victimization experience —Black, *123*

Regression constants and slopes: Dollar value of theft vs. perceived severity, by race and victimization:

164 Total United States, *124*
165 United States, by Census regions, *124*
166 Regression results: Power function plus demographic main effects, *125*
167 Unstandardized parameter estimates: Regression of core-item offenses on personal demographic and victimization characteristics, *126*
168 Regression results: Serious injury offenses, by race, income, and victimization, *126*

Appendix B
NSCS Item, version, and aggregation effects on the national pretest

B-1 Standardized means for NSCS pretest, by version and position within version, *150*
B-2 Standardized standard deviations for NSCS pretest, by version and position within version, *151*
B-3 Regression of the means and standard deviations within versions, by their position in the questionnaire, *151*
B-4 Aggregation of core items 1-5, *152*

Appendix C
Reliability statement and standard errors

C-1 Geometric mean of scores and standard error estimates for mean of log scores for national estimates (Crime severity questions 1-204), *155*

Geometric mean of scores and standard error estimates for mean of log scores:

C-2 Census regions, *158*
C-3 Census subdivisions, *159*
C-4 Federal regions, *162*

Adjustment factors for standard errors:

C-5 States, *164*
C-6 Standard Metropolitan Statistical Areas (SMSAs), *165*
C-7 Cities, *165*

Figures

Chapter 2
Cross-modal validation of the severity scale

1 Severity of crime scale: Experiment I, *16*
2 Severity of crime scale: Experiment III, *18*

Chapter 5
The National Survey of Crime Severity Pretesting

3 Interviewer instruction, *32*
4 Written vs. oral test: Experiment I, *33*
5 Power function of money: Magnitude scale, *36*
6 Power function of money: Category scale, *36*
7 Magnitude of offense stimulus number, *36*
8 Geometric means: All stimuli, *37*

Chapter 7
NSCS General findings

9 Dollar value of theft vs. perceived severity: Final national level, *45*

Chapter 8
Regional and demographic differences in the perceived severity of crime

Dollar value of theft vs. perceived severity:

10 Census region: Northeast, *53*
11 Census region: North Central, *53*
12 Census region: South, *53*
13 Census region: West, *53*
14 Race: White, *55*
15 Race: Black, *55*
16 Race: Other, *55*
17 Age: 18–19 years, *58*
18 Age: 20–24 years, *58*
19 Age: 25–34 years, *58*
20 Age: 35–49 years, *59*
21 Age: 50–64 years, *59*
22 Age: 65 years and over, *59*
23 Sex: Male, *60*
24 Sex: Female, *60*
25 Occupation: White collar, *64*
26 Occupation: Blue collar, *64*
27 Occupation: Farm, *64*
28 Occupation: Service, *65*
29 Occupation: Armed Forces, *65*
30 Occupation: Not available, *65*
31 Income level: Under $3,000, *68*
32 Income level: $3,000–$7,499, *68*
33 Income level: $7,500–$9,999, *68*
34 Income level: $10,000–$14,999, *69*
35 Income level: $15,000–$24,999, *69*
36 Income level: $25,000 and over, *69*
37 Income level: Not available, *69*
38 Education level: No kindergarten, *72*
39 Education level: Grades 1–11, *72*
40 Education level: Grade 12, *72*
41 Education level: Grade 12 and over, *73*
42 Education level: Not available, *73*
43 Victimization experience: Not victimized, *76*
44 Victimization experience: Victimized for property crime only, *76*
45 Victimization experience: Victimized for personal crime only, *76*
46 Victimization experience: Victimized for personal and property crime, *77*
47 Northeast region: Black males, age 65 and over, *83*
48 National level: Armed Forces, income level $7,500–$9,999, *94*
49 West region: Farm, income level $25,000 and over, *106*
50 National level: Black, personal victimization experience only, *118*
51 West region: Black, personal victimization experience only, *123*

Chapter 9
Developing and applying the scale of offense severity

52 Score sheet, *131*
53 Formulas for computing delinquency index statistics, *135*

Appendix A

NSCS: Interview forms, versions 1 to 12, *137*

Sourcebook of Crime Severity Ratios for Core-item Offenses

The Sourcebook is a separate volume of tables that supplement this report on the National Survey of Crime Severity.

A microfiche copy of the Sourcebook can be obtained free (order number NCJ-96329) from the National Criminal Justice Reference Service, Box 6000, Rockville, MD 20850; telephone 301/251-5500 or toll-free 800/732-3277.

The Sourcebook consists solely of tables, all of which carry this stub column:

Offense

Theft: $1
$10
$50
$100
$1,000
$10,000

Injury:
Death
Hospitalization
Treatment, no hospitalization
Minor

Robbery $10 with:
Physical or verbal threat
Weapon

Burglary and theft of $10

Rape

Bombing of building, 20 deaths

Tables in Sourcebook

[Table number in brackets]

Total United States, by Census Region, by Census Division, and by OMB region

Census Regions [1.1]. Census Divisions [1.2]. OMB Regions [1.3].

Demographic characteristics: National

Race [2.1]. Age [2.2]. Sex [2.3]. Occupation [2.4]. Income [2.5]. Victimization [2.6]. Education [2.7].

Demographic characteristics: Census Regions

Northeast region
Race [3.1]. Age [3.2]. Sex [3.3]. Occupation [3.4]. Income [3.5]. Victimization [3.6]. Education [3.7].

North Central region
Race [3.8]. Age [3.9]. Sex [3.10]. Occupation [3.11]. Income [3.12]. Victimization [3.13]. Education [3.14].

South region
Race [3.15]. Age [3.16]. Sex [3.17]. Occupation [3.18]. Income [3.19]. Victimization [3.20]. Education [3.21].

West region
Race [3.22]. Age [3.23]. Sex [3.24]. Occupation [3.25]. Income [3.26]. Victimization [3.27]. Education [3.28].

Multivariate demographic characteristics: National and by Census Region

Age, by race and sex
National [4.1-4.6]
Northeast region [4.7-4.10]
North Central region [4.11-4.14]
South region [4.15-4.18]
West region [4.19-4.22]

Income by occupation
National [4.23-4.28]
National region [4.29-4.33]
North Central region [4.34-4.38]
South region [4.39-4.43]
West region [4.44-4.48]

Income by race
National [4.49-4.51]
Northeast region [4.52-4.53]
North Central region [4.54-4.55]
South region [4.56-4.57]
West region [4.58-4.59]

Victimization by race
National [4.60-4.62]
Northeast region [4.63-4.64]
North Central region [4.65-4.66]
South region [4.67-4.68]
West region [4.69-4.70]

Demographic characteristics: Census Divisions

New England division
Race [5.1]. Age [5.2]. Sex [5.3]. Occupation [5.4]. Income [5.5]. Victimization [5.6]. Education [5.7].

East South Central division
Race [5.8]. Age [5.9]. Sex [5.10]. Occupation [5.11]. Income [5.12]. Victimization [5.13]. Education [5.14].

West South Central division
Race [5.15]. Age [5.16]. Sex [5.17]. Occupation [5.18]. Income [5.19]. Victimization [5.20]. Education [5.21].

Middle Atlantic division
Race [5.22]. Age [5.23]. Sex [5.24]. Occupation [5.25]. Income [5.26]. Victimization [5.27]. Education [5.28].

East North Central division
Race [5.29]. Age [5.30]. Sex [5.31]. Occupation [5.32]. Income [5.33]. Victimization [5.34]. Education [5.35].

West North Central division
Race [5.36]. Age [5.37]. Sex [5.38]. Occupation [5.39]. Income [5.40]. Victimization [5.41]. Education [5.42].

South Atlantic division
Race [5.43]. Age [5.44]. Sex [5.45]. Occupation [5.46]. Income [5.47]. Victimization [5.48]. Education [5.49].

Mountain division
Race [5.50]. Age [5.51]. Sex [5.52]. Occupation [5.53]. Income [5.54]. Victimization [5.55]. Education [5.56].

Pacific division
Race [5.57]. Age [5.58]. Sex [5.59]. Occupation [5.60]. Income [5.61]. Victimization [5.62]. Education [5.63].

Demographic characteristics: OMB Regions

OMB Region One
Race [6.1]. Age [6.2]. Sex [6.3]. Occupation [6.4]. Income [6.5]. Victimization [6.6]. Education [6.7].

OMB Region Two
Race [6.8]. Age [6.9]. Sex [6.10]. Occupation [6.11]. Income [6.12]. Victimization [6.13]. Education [6.14].

OMB Region Three
Race [6.15]. Age [6.16]. Sex [6.17]. Occupation [6.18]. Income [6.19]. Victimization [6.20]. Education [6.21].

OMB Region Four
Race [6.22]. Age [6.23]. Sex [6.24]. Occupation [6.25]. Income [6.26]. Victimization [6.27]. Education [6.28].

OMB Region Five
Race [6.29]. Age [6.30]. Sex [6.31]. Occupation [6.32]. Income [6.33]. Victimization [6.34]. Education [6.35].

OMB Region Six
Race [6.36]. Age [6.37]. Sex [6.38]. Occupation [6.39]. Income [6.40]. Victimization [6.41]. Education [6.42].

OMB Region Seven
Race [6.43]. Age [6.44]. Sex [6.45]. Occupation [6.46]. Income [6.47]. Victimization [6.48]. Education [6.49].

OMB Region Eight
Race [6.50]. Age [6.51]. Sex [6.52]. Occupation [6.53]. Income [6.54]. Victimization [6.55]. Education [6.56].

OMB Region Nine
Race [6.57]. Age [6.58]. Sex [6.59]. Occupation [6.60]. Income [6.61]. Victimization [6.62]. Education [6.63].

OMB Region Ten
Race [6.64]. Age [6.65]. Sex [6.66]. Occupation [6.67]. Income [6.68]. Victimization [6.69]. Education [6.70].

Severity ratios and geometric means: States

Alabama [7.1]. Alaska, Hawaii [7.2]. Arizona [7.3]. Arkansas [7.4]. California [7.5]. Colorado [7.6]. Connecticut [7.7]. District of Columbia [7.8]. Florida [7.9]. Georgia [7.10]. Idaho, Nevada [7.11]. Illinois [7.12]. Indiana [7.13]. Iowa [7.14]. Kansas [7.15]. Kentucky [7.16]. Louisiana [7.17]. Maine [7.18]. Maryland, Delaware [7.19]. Maryland [7.20]. Massachusetts [7.21]. Michigan [7.22]. Minnesota [7.23]. Mississippi [7.24]. Missouri [7.25]. Montana, Wyoming [7.26]. Nebraska [7.27]. New Hampshire, Vermont [7.28]. New Jersey [7.29]. New Mexico [7.30]. New York [7.31]. North Carolina [7.32]. North and South Dakota [7.33]. Ohio [7.34]. Oklahoma [7.35]. Oregon [7.36]. Pennsylvania [7.37]. Rhode Island [7.38]. South Carolina [7.39]. Tennessee [7.40]. Texas [7.41]. Utah [7.42]. Virginia [7.43]. Washington [7.44]. West Virginia [7.45]. Wisconsin [7.46].

Demographic characteristics (race, age, sex, occupation, income, victimization, education): States

Alabama [8.1–8.7]
Alaska, Hawaii [8.8–8.14]
Arizona [8.15–8.21]
Arkansas [8.22–8.28]
California [8.29–8.35]
Colorado [8.36–8.42]
Connecticut [8.43–8.49]
District of Columbia [8.50–8.56]
Florida [8.57–8.63]
Georgia [8.64–8.70]
Idaho, Nevada [8.71–8.77]
Illinois [8.78–8.84]
Indiana [8.85–8.91]
Iowa [8.92–8.98]
Kansas [8.99–8.105]
Kentucky [8.106–8.112]
Louisiana [8.113–8.119]
Maine [8.120–8.126]
Maryland, Delaware [8.127–8.133]
Maryland [8.134–8.140]
Massachusetts [8.141–8.147]
Michigan [8.148–8.154]
Minnesota [8.155–8.161]
Mississippi [8.162–8.168]
Missouri [8.169–8.175]
Montana, Wyoming [8.176–8.182]
Nebraska [8.183–8.189]
New Hampshire, Vermont [8.190–8.196]
New Jersey [8.197–8.203]
New Mexico [8.204–8.210]
New York [8.211–8.217]
North Carolina [8.218–8.224]
North and South Dakota [8.225–8.231]
Ohio [8.232–8.238]
Oklahoma [8.239–8.245]
Oregon [8.246–8.252]
Pennsylvania [8.253–8.259]
Rhode Island [8.260–8.266]
South Carolina [8.267–8.273]
Tennessee [8.274–8.280]
Texas [8.281–8.287]
Utah [8.288–8.294]
Virginia [8.295–8.301]
Washington [8.302–8.308]
West Virginia [8.309–8.315]
Wisconsin [8.316–8.322]

Severity ratios and geometric means: Standard Metropolitan Statistical Areas (SMSAs)

Anaheim-Santa Ana-Garden Grove, CA [9.1]
Atlanta, GA [9.2]
Baltimore, MD [9.3]
Boston, MA [9.4]
Buffalo, NY [9.5]
Chicago, IL [9.6]
Cincinnati, OH [9.7]
Cleveland, OH [9.8]
Columbus, OH [9.9]
Dallas, TX [9.10]
Denver, CO [9.11]
Detroit, MI [9.12]
Houston, TX [9.13]
Indianapolis, IN [9.14]
Kansas City, MO-KS [9.15]
Los Angeles-Long Beach, CA [9.16]
Louisville, KY-IN [9.17]
Memphis, TN-AR-MS [9.18]
Miami, FL [9.19]
Milwaukee, WI [9.20]
Minneapolis-St. Paul, MN-WI [9.21]
Nassau-Suffolk, NY [9.22]
Newark, NJ [9.23]
New Orleans, LA [9.24]
New York, NY-NJ [9.25]
Philadelphia, PA-NJ [9.26]
Phoenix, AZ [9.27]
Pittsburgh, PA [9.28]
Portland, OR-WA [9.29]
Providence-Warwick-Pawtucket, RI-MA [9.30]
Riverside-San Bernardino-Ontario, CA [9.31]
Rochester, NY [9.32]
Sacramento, CA [9.33]
San Antonio, TX [9.34]
San Diego, CA [9.35]
San Francisco-Oakland, CA [9.36]
San Jose, CA [9.37]
Seattle-Everett, WA [9.38]
St. Louis, MO-IL [9.39]
Tampa-St. Petersburg, FL [9.40]
Washington, DC-MD-VA [9.41]

Severity ratios and geometric means: Cities

Chicago [10.1]
Detroit [10.2]
Houston [10.3]
Los Angeles [10.4]
New York [10.5]
Philadelphia [10.6]

Introduction and background

Chapter 1

The present concern

Social scientists and public administrators have long recognized the need for precise and accurate indicators of the amount of criminal behavior in a given place and time. Without such measures it would be difficult, if not impossible, to determine with any certainty the level of criminal activity and to evaluate the effectiveness of intervention programs. Scholars and practitioners generally agree that adequate measures of crime are required not only for testing hypothesized relationships but also for rational allocation of criminal justice resources.

In response to this general requirement for high-quality social indicators, the production of statistical information related to criminal justice has escalated dramatically during the past 10 years. In no small part, the growth of criminological research has resulted from the burgeoning of the statistical data base. The audience for this information has included the general public as well as academicians, legislators and the criminal justice profession.

Therefore, the maintenance of measurement and data systems is of paramount importance for the criminal justice community and the public it serves. To this end, recent developments in crime measurement have used techniques that involve the general population in the data-generating process, namely, the Victimization Survey of the National Crime Panel and the closely allied National Survey of Crime Severity, which form the substance of this report.

The problem

The FBI crime index reported each year in the Uniform Crime Reports (UCR) is computed as the sum of nationwide police reports of seven offense types: criminal homicide, aggravated assault, forcible rape, robbery, burglary, larceny, and auto theft. These offenses are tabulated and reported as a crime index separately from the remaining other "nonindex" offenses because these seven offense types are generally thought to be more serious and therefore more likely to be reported to the police than are the "less important" nonindex violations.

Compared with other types of official criminal justice statistics, such as judicial and correctional data, police-recorded events are generally viewed as a better representation of the total amount of crime. Sellin wrote that "the value of a crime for index purposes decreases as the distance from the crime itself in terms of procedure increases" (1931, p. 346).

Despite their procedural propinquity to the event, official police data cannot reflect the amount of crime which is not reported or known to the police, or indicate the amount of bias which may be present due to administrative and/or discretionary practices of individual police officers or departments. Before national victimization surveys were developed, criminologists could only speculate about the amount of concordance between numbers of reported and unreported (or unrecorded) crime. But now, with continuing surveys of victims, the relationship between the amount of harm committed against the victim and the probability that the victim will report the incident can be roughly estimated so that estimates of the adequacy of police data on crime rates may be produced.[1]

Another persistent criticism of the UCR relates to the method of counting index offenses as a simple sum of reported incidents. In any legal category, different degrees of harm might occur with respect to the amount of theft and injury experienced by a victim. The UCR index does not differentiate among these various degrees of harm nor is the seriousness of offenses within and among the various legal categories determinable. For example, the UCR index gives equal weight to a robbery resulting in the victim's hospitalization and to a robbery with little or no injury to the victim.

Among offense categories, substantial differences in the extent of harm exist even though equal weight is given to all offense types. Of course, a homicide results in far more harm to the victim than does an aggravated assault, but each receives the same weight in contributing to the overall UCR index of crime committed in the population. In addition, the sheer number of property crimes in the population overwhelms the effect of changes in the numbers of violent offenses—a relatively small change in the rate of violence would not be uncovered in the UCR index. Therefore, a significant increase in violent crime could be concealed by a slight decrease in property offenses.

[1]The reader is referred to the National Crime Survey of which this study formed a part in 1977.

Part of this problem of inadequate measurement stems from the use of legal categories to measure social phenomena. As Sellin has noted: "The unqualified acceptance of the legal definitions of the basic units or elements of criminological inquiry violates a fundamental criterion of science" (1938, p. 28). And more recently Rossi and Henry (1979) have quite strongly argued the case against the qualitative legal category as a sole ingredient of a crime index.:

> Whether or not a given sequence of behavior is a crime is defined in the criminal statutes as a qualitative judgment. While there may be some ambiguities, it is clear that a crime is distinguished from noncriminal behavior and from other crimes on qualitative grounds. The criminality of an action is not a matter of degree nor are some crimes more "criminal" than others. In the manifest level, crimes are qualitative classes of behavior that do not appear to have any obvious inherent ordering among themselves.
>
> Social science research abhors qualitative variables, a judgment that is apparent in the hierarchical ordering of levels of measurement with ratio variables at the top and qualitative dichotomous distinctions on the bottom. *Offense-specific crime rates are defensible, but overall crime rates in which every crime recorded is counted equally are not.* Nor is it possible to easily describe a "criminal career" since there is no inherent way of showing change in criminal behavior except in frequency terms ... [emphasis is added].

Although official recognition and classification of an act as a crime is critical for triggering of the criminal justice process, there is most certainly a need to operationalize measures of harm independent of the legal categories into which they happen to fall. In other words, more than legal definition of an incident is required for the adequate measurement of criminal behavior.

This difficulty with an aggregate measure of a particular phenomenon can be avoided most easily by reporting the components of the summative measure. In the case of a crime index, this disaggregation involves looking at the specific offense characteristics. Shifts from violent to property offenses in the total rate of crime could be detected by simply including separate indexes of property and violent offenses. The expansion of robbery into its component parts of theft, in-

jury, and weapon use would add significantly to the utility of the resultant index of crime.

Nonetheless, accepting the advantages of offense specific analysis does not obviate the more general need for a summary measure of crime for which an index is intended. Summative indicators of the total amount of crime in a society are required not only for social science and criminal justice applications, but also for the production of crime statistics for general public information. Because we live in a period of rising growth in the production of information, there continues to be a need for aggregate measures. In contrast to today's complex economic indicators, such as employment rates, cost of living indexes, inflation rates, gross national productivity, and so on, the reported measure of crime is confined to a simple unweighted index based on police reports of offenses and, more recently, crimes reported by surveyed victims.

In *The Measurement of Delinquency* (1964), Thorsten Sellin and Marvin E. Wolfgang addressed the need for a weighted index by developing an alternative measure to the traditional method of indexing offenses.[2] They attempted to construct an index of crime seriousness which would provide a quantitative aspect to crime measurement not supplied by the official tally of the UCR. Drawing on the work of S. S. Stevens in psychophysical scaling and that of E. Galanter in measuring nonphysical continua, Sellin and Wolfgang developed a seriousness scale of delinquent acts, based on the perceived severity of crimes as judged by university students, juvenile court judges, and Philadelphia police. From the resulting seriousness scale, an index of delinquency was produced which included the important, but previously disregarded, element of the relative severity of various criminal acts, both in isolate and as they combine to contribute to the harm inflicted on society by a complex criminal event. Thus the primary objective of the Sellin-Wolfgang study was to create an expanded method for measuring and reporting police and court statistics based on the perceptions of certain population subgroups.

As has been pointed out in the literature on official statistics (for example, Wilkins, 1965, pp. 227–284), many technical problems exist in the tabulation of crime statistics. One major concern relates to what should be done for statistical reporting purposes when several offenses occur during one criminal event. For example, if a female store clerk were robbed and raped, how would the officer on the scene report the incident? Is the occurrence to be reported as one or two crimes? Two separate crimes might have taken place, but there was only one victim, and both offenses were the outcome of one criminal "operation" or event. If the decision were made to report only incidents and not violations, how then is the incident to be depicted? Should the officer report only the more "serious" crime and, if so, how should he or she determine which crime is to be judged the more serious? Furthermore, even if the most serious offense in a complex event were to be recorded, does that not play down the total amount of harm inflicted by the offender during the incident? Still other problems exist when more than one victim is present during a given offense or when there are several offenders working in concert. Sellin and Wolfgang argued that some of these problems might be mitigated if one were to construct an index of crime severity.

The measurement of delinquency: Background, review, and critique

At this point, only the minimum discussion required for a general understanding of the scaling system employed by Sellin and Wolfgang will be provided. Because exposition of the techniques utilized in the National Survey and technical details of the scale will follow in a later chapter, the reader is referred to the Sellin-Wolfgang study of 1964 for information beyond that presented below.

The researchers began their study by extracting the components of delinquent behavior from the Philadelphia police crime code. These criminal acts were then placed into a context of 141 single-sentence offense descriptions and typed one to a card. The cards were then shown to a pilot group of 17 raters, each of whom was to rate the delinquent act described on the card on the basis of his or her perception of its seriousness. During the pilot phase, the raters judged the seriousness of the offense on a scale having seven categories of intensity. Following this initial investigation, the offense descriptions were then judged for seriousness by juvenile court judges, police officers, and university students. Finally, a refined subset of 21 offense descriptions was administered to a sample of University of Pennsylvania students both on 11-level category and unrestricted magnitude scales. The responses to these offense descriptions of stimuli constitute the "primary index scale" of the Sellin-Wolfgang study. It is on this scale that *The Measurement of Delinquency* rests.

Techniques of scaling are not new to social science research. The works of Likert, Guttman, and others have been employed widely in creating categorical and ordered scales. But such scales are inadequate for weighting amount of harm because they do not have a zero point nor can the distances among the items be reliably determined. On the other hand, a ratio scale overcomes these shortcomings by generating a continuous weighted index of seriousness.

In the literature on psychological scaling there is a variety of procedures for creating a ratio scale. Thurstone's method of paired comparisons, for example, has been widely adopted in psychological and social psychological measurement, but the large number of offense items used by Sellin and Wolfgang precluded the use of this technique. However, S. S. Stevens made crucially significant contributions to the field of psychophysics in the 1950's by employing a less complex form of scaling based on magnitude estimation. Since then, Stevens and his students have extended the range of phenomena examined by magnitude estimation procedures to include a wide variety of physiological and nonphysiological phenomena, and the reader is referred to his seminal papers, especially "On the Psychophysical Law" (1957), "A Metric for the Social Consensus" (1966a) and "On the Operation Known as Judgment" (1966b).

The method of magnitude estimation refers to a procedure in which a subject makes direct numerical estimates of a series of subjective impressions. Typically,

[2]The authors wish to acknowledge the assistance of Nancy and Paul Maxim in the preparation of the following discussion of the Sellin-Wolfgang scale and the general literature review.

the subject is presented with a stimulus, called a modulus, which may have, for example, a given value of 10. The subject is permitted to use any range of numbers. The respondent then receives another stimulus and judges its intensity as compared to the modulus. If he or she feels that it is twice as intense as the modulus, then a value of 20 should be given to that item; if it is felt that the stimulus is half as great, a value of 5 would be assigned. The ultimate test for the existence of the scale is the extent to which the subject's responses fit a power function.

There has been criticism of the magnitude estimation procedure used by Sellin and Wolfgang to derive the weighted index, but the technique appears to have passed the test of time at least with regard to utility and replication by other investigators. The index has been applied successfully to a variety of measurement problems not only in studying the correlates of crime but also in planning criminal justice policy, in examining criminal careers, and other uses to be detailed further on. However, criticisms of the assumptions involved in the use of the weighted index have arisen concerning dimensionality and additivity; these problems will be discussed in greater detail later in this chapter.

Several replications of the study have been undertaken in the United States and other countries. The first attempt was a partial replication by Andre Normandeau (1966) in Montreal in which the repeatability of the Sellin-Wolfgang index in a Canadian context was examined. Normandeau made three assumptions regarding the replication, specifically, that (1) the basic methodology used to construct the index was reliable and valid, (2) given the similarities of culture of Western societies, the scaling results would also be similar, and (3) the index was applicable to a "wide band of cultural variants" (p. 172).

Normandeau's sample consisted of 232 sociology undergraduates at the University of Montreal, 177 males and 55 females. The students were asked to evaluate a selection of 15 versions of criminal events, similar in construction to those chosen for evaluation by University of Pennsylvania students. It was hypothesized that analysis of the magnitude estimation scores of Pennsylvania and Montreal students, and of males and females in Montreal, would be highly correlated. In fact, the analysis revealed a large degree of agreement in the numerical scoring of the seriousness of offenses between Montreal and Philadelphia. It was found that the magnitude estimation scale scores of the two student samples manifested a constant ratio increment, indicating that to some degree the method is valid for crosscultural use.

The most important result of this study was that it paved the way for a more thorough replication of the Sellin-Wolfgang index, which would include assessments from all parts of Canada (p. 172). Because the pilot study appeared to confirm the utility of the index in Canada, a national sample of 2,745 individuals was drawn. It was composed of male and female university students from the 13 largest universities in Canada, Canadian judges, and male white-collar workers holding managerial positions. They were asked to make magnitude estimates of 14 offenses according to their perceived seriousness of the violations.

Two major hypotheses were formulated for testing: (1) The relationships among the magnitude ratio estimations of the intracultural groups and those of the intercultural groups would be linear. (2) The slopes of the lines characterizing the relationships between the two groups would not be significantly different.

To calculate the national magnitude scores it was assumed that: (1) A national index should be based on the fact that dominant attitudes are most likely the result of pressure exercised by the majority of the population. (2) The students in universities reflect the dominant values of their province. Thus, to generate an overall population estimate for the index, the geometric mean obtained for each offense from members of the sample selected from each province was weighted according to the percentage of the population of Canada in that province. Analysis of the data revealed that the relationships between all intracultural groups were linear, with correlations greater than .90, while the relationships among intercultural groups were linear, with correlation coefficients greater than .88. Thus, the first hypothesis was confirmed. It was further noted that the slopes of the majority of the relationships were approximately one, indicating support of the second hypothesis. A comparison of these results with those of the pilot study revealed a linear relationship with a slope coefficient of one, thus indicating stability in the measuring device over time.

The Sellin-Wolfgang seriousness scaling method was further replicated in a study conducted in Puerto Rico. Angel Velez-Diaz and Edwin Megargee (1971) presented a list of 141 offenses to a sample of lower-class offenders and nonoffenders in Puerto Rico. This sample differed from that of Sellin and Wolfgang with regard to age, level of schooling completed, language, socioeconomic status, culture, and criminality. The sample totaled 175 and was composed of 83 inmates of the Institute for Youthful Offenders and 92 nonoffenders from a vocational school in the same geographical area.

The age of the offender group averaged 20, with a range of 18–24; the average number of years of school completed was seven, with a range of 3–11. The age range of the nonoffender group was 17–21, with a mean of 18.2; years of schooling completed ranged from 4 to 9, with an average of 7.4. The groups were asked to rate the 21 standard offenses from the Sellin-Wolfgang scale and 20 additional ones of an 11-point category scale. These additional offenses were chosen by random selection from the Sellin-Wolfgang list.

The authors computed means and standard deviations and tested differences between offenders and nonoffenders for significance. At the .05 level, where the number of differences occurring by chance would be seven, ten of 141 differences were significant. At the .01 level of significance, where one would expect 1.4 of the differences to occur by chance, Velez-Diaz and Megargee found only two of 141 differences to be significant. It was further noted that the significant differences in the offense ratings showed no particular consistency or pattern. For the 21 standard offenses, the Pearson r was calculated to be .98; the correlation for the entire 141 offenses was found to be .84, with both coefficients significant at the .001 level.

Velez-Diaz and Megargee also used the Cochran test for homogeneity of variances to determine the significance of the difference between the variances of the offender and nonoffender samples for each offense. They discovered that only eight of 141 variances were significantly different. Furthermore, to establish the degree of agreement between the results in Puerto Rico and those calculated by Sellin and Wolfgang in Philadelphia, Velez-Diaz and Megargee used Kendall's coefficient of concordance, *w*. It was determined that there was a positive correlation between the Pennsylvania and Puerto Rican ratings, with an overall agreement of $w = .80$. No difference existed between offenders and nonoffenders with respect to the *w* values and both of these groups were in general agreement with the evaluation given by the subjects in Pennsylvania. Velez-Diaz and Megargee concluded that, although their findings were not completely concordant with those of Sellin and Wolfgang, their results nevertheless were consistent with Sellin and Wolfgang in that perceptions of the seriousness of crime were consistent for different class levels of Western cultures. Further, Velez-Diaz and Megargee suggested that the Sellin and Wolfgang hypotheses about the seriousness of crime are sufficiently stable to permit regional and cultural comparisons.

A second study of the evaluations of seriousness judgments of offenders and nonoffenders was conducted by Figlio (1975). The study was designed to determine whether or not convicted offenders rate the seriousness of crime in ways similar to members of the middle class with regard to offense ranking, weight given to each offense, and the degree of consensus regarding the seriousness of each criminal act. Nine hundred and thirty-three subjects were chosen from three institutions: 193 were inmates of an adult correctional center in New Jersey, 524 were inmates of a juvenile detention home in New Jersey, and 216 respondents were students enrolled in undergraduate sociology courses at the University of Pennsylvania.

Some raters were asked to judge each of 20 offenses on an 11-point category scale; others were to choose any number which they thought adequately represented the seriousness of the particular description. Analysis of the results revealed that, with the category scale, the ordering of offense severities and the spaces of severities within each group were similar. The university students tended to evaluate offenses as being more serious than did the juvenile offenders who, in turn, rated the offenses as being more severe than did the adult offenders.

With respect to the magnitude scale scores, Figlio found that the spread of the ratings of offenses from least to most serious was greatest among students and least among prison inmates, while consensus about the seriousness of each offense was greater among students than among the two offender groups. It was further noted that all groups were in agreement as to the ordering of offenses on a scale from least to most serious but that there was less agreement among the three groups regarding the distances among offenses and little agreement among the groups as to the absolute amount of harm which resulted from each offense.

A comparison between the ratings of the students surveyed by Figlio and those surveyed by Sellin and Wolfgang in 1964 revealed that the subjects of the 1964 study considered the offenses to be roughly twice as serious as did the subjects of the 1975 study, while the ratios of severity among the offenses remained fairly stable.

Figlio was able to conclude that this study replicated and supported the findings of Sellin and Wolfgang, as well as some studies dealing with the methodology of psychophysical scaling. Further, he was able to show that the seriousness of crimes of theft is a power function of the dollar value of the theft—a result which is congruent with the power functions of money as derived by Cramer and others (1975, p. 200).

A replication of the Sellin-Wolfgang seriousness scaling method in Taiwan by Marlene Hsu (1973) offered further support for the reliability and validity of the scaling procedure. In a pilot study, a scale was constructed in the same fashion as that created by Sellin and Wolfgang, with raters evaluating 14 offenses.

The study sample consisted of three male groups and one female group totaling 547 individuals. Two hundred and ninety-nine subjects were students from National Taiwan University (239 male, 60 female); 198 were policemen from the Taipei police department; and 50 were judges from the Taipei district court. Fourteen index offenses from the Sellin-Wolfgang study were translated into Chinese for the Chinese raters, with certain modifications made in the translation to reflect economic and legal differences between Taiwan and the United States. The magnitude estimation procedure was employed with geometric means computed for the offense stimuli.

Hsu found that the means of the three male groups were linearly related to those of the respondents of Sellin and Wolfgang (Pearson *r* equal to .95, while the slope coefficient was calculated to be .60). Hsu accounted for the relatively small slope coefficient by noting that the geographical and cultural distances were probably responsible for the differences in judgments between Taiwan and the United States. A comparison of intracultural male groups produced linear relationships all with *r*'s greater than .90 and slope coefficients of approximately 1.

The comparison of females and males from Taiwan revealed a difference more prominent than that attributed to culture. The relationship was approximately linear, with a correlation of .88 and a slope coefficient of .86. It was noted that females in Taiwan, like those in Canada (Akman and Normandeau, 1968, p. 138), viewed rape as being more serious than murder. In comparing the two female groups, Hsu produced evidence of a linear relationship with a correlation coefficient of .90 and a slope coefficient of .53. She accounted for this lack of agreement by noting that Canadian society is closer to a unisex morality than is Taiwan, where a more traditional culture exists, and concluded (1973) that her findings supported a caution expressed by Sellin and Wolfgang:

> ... most of the remarks made about the theory of index construction apply to the crime problem in general. The extent to which these same remarks apply to crime conditions or the criminal justice systems in the various countries of Europe can best be determined by the experts from Europe. Wherever modifications seem appropriate, based on the particular functioning of particular systems these alterations should, of course, be considered. [p. 348]

Hsu further asserted that culture is a significant factor in affecting value

judgments, implying the need for a method of measuring crime seriousness which takes into consideration the value judgments of different cultures in different times and places.

Further indirect evidence for the validity of the Sellin-Wolfgang approach was offered by the work of Kelly and Winslow (1970). These authors questioned the accuracy and reliability of the ratings obtained by Sellin and Wolfgang, as well as the nature of the acts presented for judgment. Kelly and Winslow hypothesized the existence of certain characteristics of crime seriousness, specifically that: (1) The offensiveness and disruptiveness of a criminal act are two separate dimensions of seriousness. (2) Law enforcement personnel and students differ with respect to their assessment of moral offenses. (3) The latter group perceives the offenses as being less serious than the former. (4) Seriousness evaluations differ by socioeconomic status.

One hundred and fifty male and female upper-level university students and 40 policemen were asked to evaluate 40 offenses (not Sellin-Wolfgang offense descriptions) on a seven-point category scale. Socioeconomic status was determined by using a modified version of Stinchcombe's socioeconomic status scale. Gravity or seriousness of an offense was defined according to the rank order comparisons based on the assessments obtained through the use of the seven-point scale. A Mann-Whitney U test failed to reveal significant differences in the ratings between offensiveness and disruptiveness when the offenses were rank ordered. Kelly and Winslow thus rejected the notion that the offensiveness and disruptiveness of a particular criminal act constitute separate dimensions. Furthermore, a comparison of students' ratings and those of policemen failed to reveal significant differences.

Despite the differences between the methods used by Sellin and Wolfgang and those of Kelly and Winslow, comparisons were made between the ratings of the male students of the Kelly-Winslow study and those of the students of the Sellin-Wolfgang work. In addition, comparisons were made of the ratings of the policemen who participated in the Philadelphia study and those of the male students sampled by Kelly and Winslow. Also, separate ratings of sex offenses were compared among groups in the Kelly-Winslow sample. No significant differences were found for any of these comparisons. These results prompted Kelly and Winslow to reject the possibility that police and student ratings differ significantly with respect to moral offenses.

Kelly and Winslow were also unable to provide support for their third hypothesis, because none of the ratings across occupational categories proved significantly different. In addition, their study contributed some support to the belief that crime seriousness is a unidimensional phenomenon.

The study by Rossi *et al.* (1974) in Baltimore, Maryland attempted to cast some light on the components and properties of crime seriousness. It was their intention to develop a measure of the seriousness of criminal acts by examining the nature and degree of popular consensus concerning a sample of criminal acts, and to apply the measure to more representative populations to determine what elements of the criminal act account for the seriousness aspect.

Using a block quota sample design, Rossi *et al.* conducted a survey of the adult population of Baltimore. The sample consisted of 125 whites and 75 blacks, with equal numbers of males and females. It was acknowledged that the sample was biased, due in part to the underrepresentation of young males and households without children and active persons.

The subjects were interviewed and asked to rate offenses by sorting cards into nine slots representing nine levels of seriousness. A total of 140 offenses, derived by expanding on UCR descriptions, was rated by members of the sample. These 140 offenses were divided into two groups of 80 offenses each, with each group sharing 20 offenses in common. In addition, information regarding background variables of the subjects and their perceptions of the crime problem in Baltimore was obtained.

Overall, crimes against the person tended to be scored high; crimes against property having no physical harm or intimidation were scored significantly lower. Misdemeanors were rated lower than were any other types of offenses; white-collar and victimless crimes were not considered particularly serious, although they were consistently rated as being more serious than misdemeanors. An offense committed against a policeman was considered more serious than the same offense committed against a civilian. Crimes involving persons known to the offender were considered less serious than crimes committed against strangers.

To determine the degree of consensus in the sample, the authors suggested that the presence of strong consensus would be indicated by high correlations among the subgroups (as determined by race, sex, and level of education). In fact, the comparison of ratings by blacks with those by whites produced a correlation coefficient of .89; between men and women the coefficient was .94; and between those with high and low levels of educational attainment, .89. Rossi *et al.* found that, while all groups agreed about the relative seriousness of crimes, blacks and women tended to regard crime as being slightly more serious than did whites and men. Further, it was noted that the subgroup with the least agreement with any other, especially about the severity of crime between acquaintances, was that of black males having a low level of educational achievement.

To determine which characteristics of crime influenced the rater's judgment of seriousness, Rossi and his associates used a binary coding system on 11 characteristics of crime. The codes were then used as dummy variables for analysis by multiple regression techniques. The characteristics of the following offenses accounted for 68 percent of the variation in the estimation of average seriousness of criminal acts:

(1) Crimes against the person I: Murder, manslaughter
(2) Crimes against the person II: Assault, rape, incest
(3) Crimes against the person III: All others, personal injuries or threats
(4) Crimes involving property I: Property loss in excess of $25
(5) Crimes involving property II: All other property crimes
(6) Selling illegal drugs
(7) "White-collar" crimes
(8) Victimless crimes
(9) Subversion
(10) Crimes against policemen
(11) Crimes against public order

This finding was interpreted as being supportive of the belief that respondents react to the simple characteristics of the crimes they rate. Slope coefficients were highest for crimes against persons and the illegal sale of drugs, implying that these offenses are perceived as being especially serious.

Subgroup variation in the mean seriousness ratings was considered to be present to the extent that different subgroups perceived the entire set of crimes to be more or less serious. However, calculations of the mean seriousness ratings for each subgroup revealed the presence of little variation. Blacks, females, and younger people tended to rate crimes as being more serious than did whites, males, and older persons. But only 5 to 8 percent of the variation ($r = .23$ to $.28$) in the mean seriousness ratings was accounted for by membership in a specific subgroup. This led Rossi *et al.* to conclude that the fact that their sample was not representative does not pose a major flaw for the results of the study, because subgroup characteristics seem to contribute so little to overall assessments of crime seriousness.

Rossi *et al.*, being concerned that the strong agreement among subgroups might effectively obscure any individual differences, whether attributable to error or resulting from actual value differences, computed correlations between the individual ratings of the respondents and the average ratings of the entire sample for each crime. The results indicated a strong consensus, in that 98 percent of the correlations were positive (correlation coefficients ranged from $-.78$ to .86; the average coefficient was .54; the standard deviation was .23). By using each individual's squared correlation coefficient as a dependent variable against the background characteristics of the respondents, Rossi and his associates found a tendency for those with higher levels of educational attainment to exhibit greater consensus and younger individuals most likely to mutually agree. Moreover, especially for whites, the higher the education achieved, the greater the consensus. This finding was explained by noting that education exposes an individual to the normative structure of society and offers an understanding of media confirmation of the normative structure.

As a result of this work, Rossi *et al.* concluded that their findings support generalizations that, (1) norms defining the seriousness of criminal acts are widely distributed among blacks, whites, males and females, all socioeconomic status groups, and all levels of educational attainment, while (2) the agreement of any individual's ratings with the general normative trends depends on formal educational achievement. This relationship suggests that exposure to normative structure and language handling ability lead to a better understanding of that structure.

The findings and conclusions of the Rossi study seem to confirm the contention made by Sellin and Wolfgang that there is consensus across society regarding the perception of crime seriousness. Even though some individual differences were noted, Rossi *et al.* showed that considerable agreement exists among the subgroups with regard to the relative ordering of the criminal acts and to the relative distances among acts on the scale.

More recently, Tarald O. Kvålseth (1980) administered 25 items similar to those of Sellin and Wolfgang to a sample of 25 Norwegian students. Bias reduction from item ordering effects was accomplished by Kvålseth with a balanced Latin square design—a new technique in these replications. Correlations among the Norwegian magnitude estimates, the Canadian replication by Normandeau, and Harvard students' responses reported by Stevens (1975) yielded coefficients of .90 and .96 respectively, with corresponding slopes of .62 and .60 using a power function regression. Norwegian students escalated their perception of offense severities more rapidly than did the Canadian and Harvard respondents. In addition, the power function fits relating perceptions of the value of theft and tax evasion were almost perfect. Kvålseth concluded:

> Although it appeared that a considerable degree of consensus regarding the rank ordering of offense seriousness extended across the social and cultural differences between [sic] the three subject populations, some clear differences did emerge. In general, any change in the judgment of offense seriousness by the Norwegian subjects exceeded the corresponding changes perceived by the Canadian and the U.S. subjects. [p.237]

After perusal of these studies whose objective was the replication of crime seriousness measurements similar to those of Sellin and Wolfgang, it must be concluded that a substantial amount of data has been accumulated supporting the assertions that: (1) respondents can and do make reliable judgments of perceived crime severity and (2) the interrelationships among various findings have been quite strong. Stanley Turner, in his introduction to the Patterson-Smith reprint of *The Measurement of Delinquency* (1978), comprehensively reviewed and critiqued this literature and concluded:

> In the decade and a half since the pioneering work of Sellin and Wolfgang many attempts have been made to verify or criticize the scale. What may be concluded from these efforts? I believe that it may fairly be stated that the authors' final version (the elements and their additive weights) is not the best representation of their data. Further it may be conceded that the techniques for making international comparisons have not been fully thought out. But the original study has held up under repeated replications on diverse populations. . . .
>
> All of this is to say the minimum claim advanced by Sellin and Wolfgang has not been successfully challenged. The scale (or some version of it) appears distinctively useful for making decisions about individuals in the criminal justice system. Of how many endeavors is this true? How many survived replication and criticism? It may be said of Sellin and Wolfgang's work what was said of it when first reviewed: It is probably the most sophisticated attempt in sociology to measure an elusive yet important variable. [pp. xx–xxi]

Nonetheless, several recent studies of a critical nature have been undertaken to test assumptions underlying the use of the Sellin-Wolfgang scale as an index of crime. It is appropriate at this point to look at these investigations in terms of the strengths of their conclusions as they bear on the present work.

Problems with the scale assumptions

Although many authors offer passing criticisms of the procedure, perhaps the most comprehensive critique is to be found in G. N. G. Rose's (1966) early comments following the publication of

The Measurement of Delinquency. Initially, Rose suggested that Sellin and Wolfgang's sampling procedures are inadequate for basing the assumption that a distribution of perceived crime seriousness for the United States had been discovered. Essentially, this assertion is true; however, any lengthy criticism of Sellin and Wolfgang on this point is not too damaging because they were constrained to the use of convenience samples and their primary aim was to illustrate the potential inherent in the procedure. Thus Wolfgang (1970) has proposed that the work should be judged as exploratory in that sense and not as a definitive statement of public attitudes on crime severity throughout the United States.

However, many of the other criticisms raised by Rose are not quite so easily dismissed. In referring to the results of a BBC television survey, Rose pointed out that attitudes toward the relative severity of various crimes may differ across different segments of the population. Rose specifically suggested that social class may be an intervening variable in determining the relative order of the severity of different offenses. Despite Akman, Figlio, and Normandeau's (1967, p. 443) comment that Rose stressed too heavily "a few percentage points from a sample," evidence does indicate that the perception of severity varies somewhat by the social characteristics of the perceiver. Rose and Prell (1955), for example, discovered that severity (as measured by suggested sentences for offenders who committed specific crimes) varies significantly according to the socioeconomic status, sex, and size of the hometown of the perceiver. Replications of the Sellin-Wolfgang index by Christiansen (1970), Hsu (1973), and Figlio (1975) also indicated that the absolute values of the perceived severities of offenses may relate to the social characteristics of the respondent.

From a logical point of view, this hypothesis should be a reasonable candidate for rigorous testing. Unlike light or loudness, crime severity is a culturally determined entity. Whereas the reality of a 1,000-Hz tone is relatively independent of the perceiver's culture (although the interpretation of that tone is culturally determined), the very existence of a crime depends on one's culture defining an event as such. Thus it would be expected that, across the spatiotemporal boundaries of different cultural and subcultural groups, the perceptions of the relative severity of crime would change. In fact, a major portion of the research effort reported in chapter 8 of this volume is devoted to an examination of differentials in perceived severities of crime which appear in various subgroups of the United States. As noted earlier, Sellin and Wolfgang were concerned primarily with the construction of an instrument which would provide another kind of indicator of crime trends in addition to the presently used UCR index. As such, they focused on the consensual aspects of the scale by assuming that variation in seriousness perception surrounding a given event constitutes error or "noise" and that true point-estimates are provided through calculation of geometric means.

The alternative objective would have been to focus on variation in responses as opposed to central tendency. Hence, one would be attempting to identify different response patterns in different populations. It may be, for example, that there exists some general, but loose, consensus in a society (especially a pluralistic one such as the United States) with regard to offense seriousness, but that this major trend is modified by factors unique to specific subpopulations.

Another criticism raised by Rose, and dealt with by Akman, Figlio, and Normandeau, is the contention by Sellin and Wolfgang that it is possible to compile an index which focuses solely on the "event." Characteristics of the victim and the offender under this operating hypothesis have no bearing on the perceived seriousness of the delinquent or criminal event. In the initial study, Sellin and Wolfgang provided what appears to be corroborating empirical evidence for this assumption because, in some instances, the offender's age in the offense descriptions was either unspecified or indicated as being 13, 17, or 27 years. Plots of the age-specific response profiles indicated that the age of the offender did not appear to interact with perceived seriousness, thus lending credence to the assumption that it is possible for judges to conceptualize the abstract notion of "an event" independent of victim-offender interaction.

Rose (1966, p. 416) challenged this contention on both logical and empirical grounds. First of all, he argued that there is the prima facie case that offender characteristics, such as age, do make a difference because the age of the offender defines the event as a "crime" or "delinquency." In response one must acknowledge and assert here that offense severity reflects the perception of the harm incurred by the victim or society. Offender characteristics do not modify the costs of the crime to the victim. Qualities of the offender and circumstances surrounding commission of the offense may very well bear on the blameworthiness or culpability of the perpetrator but not on the damage sustained by the victim.

Also, from a measurement point of view, there is a very practical reason for preferring to define events without regard to victim and offender characteristics. The inclusion of such factors would, most probably, lead to the generation of an almost infinite universe of criminal events because it could be argued that each victim-offender situation interaction would be a unique instance requiring its own offense description and numerical estimate. Such an elaboration would be impossible to implement or justify.

A similar intervening factor which should be considered is that of intent, or *mens rea.* In most American and European criminal law a substantive distinction is made between acts committed with intention or malice aforethought and those which are not. The classic example in American law is the distinction between culpable homicide—"murder"—and nonculpable homicide, or manslaughter. Riedel (1975), in assessing whether circumstances and intent modify the subject's perception of seriousness, concluded that these inferences of intent are unimportant factors in the perception of the seriousness of criminal events. Essentially, the external aspects of the incident (amount of injury, theft, or damage) appear to be the determining factors in judges' perception of severity. Thus offense severity will continue to be looked on as a measure of the costs to the victim whether that victim be an individual, a group, or society in general. Offender traits relate to the strength of sanctions to be imposed for commission of the criminal or delinquent act, not to the cost for the victim.

Somewhat similar to this argument is Rose's point that it is meaningless to speak of events outside of their total social nexus, because in real life situations individuals do not normally abstract the event from the individual's involved. As some classic research indicates (LaPierre, 1934), there is often a great disparity between peoples' attitudes and their actions. Thus, while studies such as that by Riedel indicate that subjects may be able to make conceptual judgments about the seriousness of some abstract event, actual judgments made in the field of real situations may yield quite different results. Would it be more sound then to concentrate on the actions of individuals rather than their perceptions? This hypothesized disjunction is a recurrent dilemma in psychophysical research. On the one hand, a subject's ability to discriminate stimuli in a laboratory setting is methodologically quite straightforward, but perhaps theoretically "sterile." On the other hand, in vivo observations often produce more meaningful data but create enormous methodological problems. The distinction is made quite clear by Adams and Ulehla (1971):

> A special case of discrimination of particular interest to experimental psychologists involves the explicit differentiation between, or identification of, stimulus alternatives. We term this perceptual discrimination because the interest is in how well someone can (that is, is able to) discriminate between the stimulus alternatives and, thus, to assess the subject's capacity for discrimination. . . . In perceptual discrimination, research is oriented toward the perceptual abilities of the subject, toward discovering what discriminations he can make if instructed or programmed to do so. In contrast, the performance-discrimination, or "do," problem involves discovering the stimulus or situational alternatives to which the person responds differentially on the context of psychosocially significant behavior. Here the behavior itself is of importance; it is the focus of the researcher's interest and is not used merely as an indicator of perceptual ability, of the subject's capacity to discriminate. We may thus term discrimination in the do context performance discrimination. [p.35]

The way in which performance discrimination is related to perceptual discrimination is an empirical problem and rather difficult to resolve. How crucial this problem is rests largely on the objectives of the researchers or individuals using the scale. If the sole objective of the research is to measure an attitude (that is, perceived relative seriousness of crimes), then the problem does not exist. If, on the other hand, one wishes to relate attitudes to behavior, then the magnitude of the problem will relate to the particular circumstances of the application.

Another general group of criticisms directed toward the Sellin-Wolfgang index rests on the use of magnitude estimation as a single scale for measuring crime seriousness, the appropriateness of the psychophysical model on which the scale is based, and the experimental procedure employed in collecting the data.

One of the major concerns in the psychophysical literature is the specification of the perceptual transformation function. The importance of the specification of this function is outlined by Stevens (1972) where he reviewed the discordance between Cramer and Bernoulli's explanations for the perceived utility of incremental amounts of income. Bernoulli assumed that utility was logarithmically related to real income; Cramer argued for a power function. At face value, this argument appears to be somewhat trivial because the primary objective is simply to describe the rules of correspondence between an observable standard and a human judge's perception of that standard. But, as Stevens noted (1972), these two functions have quite distinct implications:

> Bernoulli derived his logarithmic function by first making a simple assumption. The added utility, he said, grows smaller as the "number of dollars" grows larger—a simple inverse relation. Cramer's power function derives from an assumption that is just as simple and perhaps even more plausible: the added utility grows smaller as the "total utility" grows larger. Again a simple inverse relation, but this time between the added utility and the total utility, not between the added utility and the total number of dollars. [p. 3]

Stevens made the argument that the data obtained by Sellin and Wolfgang support the general psychophysical "law" that Cramer's power function is an accurate and valid model of perception. This conclusion, if accepted, has much intuitive appeal, for it is simpler and more useful to have one general class of information functions to describe the relationship between objective stimuli and their subjective perception than to have a multitude of dissimilar transformation functions. However, Stevens noted (p. 3) that phenomena such as crimes are difficult to employ as direct proof of the power function relationship because they not only require cross-modality measurement, but also the mapping of a nonmetric domain onto a metric range. As Stevens said:

> On many continua . . . stimuli can be measured only on a nominal scale, for the stimuli are verbal statements, occupations, crimes, and the other nonmetric items. On those continua the power law cannot be confirmed directly, but there emerges another notable invariance.
>
> For both kinds of continua, those based on metric stimuli and those based on nonmetric stimuli, we find a constant relation between the two kinds of scales: the magnitude scale erected by direct judgment and the poikilitic scale derived from a unitizing of variability or confusion. Whether the stimuli themselves are measurable on the ratio scales, the judgmental scale based on units of variability is approximately proportional to the logarithm of the scale constructed by one or another of the direct scaling methods, such as magnitude estimation. [p. 26]

What are some of the implications of this model of crime severity as a ratio-scaled power function? First of all, it is assumed that crime severity can indeed be measured on a ratio scale.

Typically, the fit between the perceived value of theft and the dollar value of that theft has been quite tight, using a power function regression. Because the dollar value of theft is the only offense stimulus type for which an objective measurement exists (dollar value), any assertion about the appropriateness of a power function fit for other nonobjectively measured offense types must rely purely on the assumption that the power function observed with dollar value underlies judgments of the severity of all offense types. However, it should be noted here that the cross-modality matching and conjoint measurement studies which will be discussed in chapters 2 and 3 further support the power function as it applies to crime severity perceptions.

Second, one of the major advantages that ratio- or interval-level scales exhibit compared to simple ordinality is that the scale units have the characteristic of additivity. But several critics, beginning with Rose (1966), have questioned the assumption

of Sellin and Wolfgang that their scale exhibits true additivity. Indeed, in their work Sellin and Wolfgang did not investigate this issue by presenting complex events for respondents to judge. The correspondence between the magnitude score given to a complex event and the score derived as a simple sum of the components of that event cannot be determined from *The Measurement of Delinquency*.

Pease, Ireson, and Thorpe (1974) and, later, Wagner and Pease (1978) examined empirically the assumption of additivity by asking a group of subjects to rate the seriousness of several discrete crimes. The respondents were also asked what their perceived seriousness would be if two offenses of the same type were committed. In their first study of 286 respondents, only 31.8 percent judged the commission of two offenses to be twice as serious as the single offense. The remaining respondents judged the multiple offense situation as being either more serious (19.9%) or less serious (48.2%) than twice the value of a single offense. In their second study with 222 respondents, Wagner and Pease found that only 18 percent of the judgments were twice as serious, while for 75.2 percent of the individuals taking part in the study two offenses committed together were less than twice as serious as one, and 6.8 percent thought two offenses were more than twice as serious. They concluded: "We have demonstrated that offense seriousness is not additive" (1978, p. 178).

Unfortunately, these two studies do not really address the issue of offense severity with data which permit comparisons to be drawn with other studies of this type. Offense severity is seen as a continuous variable having a distribution seemingly well-fitted by a power function. The problem at hand is the estimation of the parameters of that function, not simply the percentage of subjects who responded to three categorical imperatives.

Thus Wellford and Wiatrowski (1975), using the techniques of magnitude estimation, generated geometric means using Sellin-Wolfgang items for both simple and complex offensive events with 118 Florida State University students as raters. Their results correlated strongly with Sellin and Wolfgang ($r = .905$), with a slope of .482. But even more impressive was their correlation of .969 and slope of .945 between complex offenses directly estimated and their indirectly derived counterparts.

Table 1

Ratio scores for complex events*

Event number	FSU directly scaled	Ratios rank	FSU indirectly scaled	Ratios rank	S-W indirectly scaled	Ratios rank
1	34.9	1	38.9	1	37.2	1
2	4.5	13	3.7	15	4.1	17
3	1.0	20	1.0	20	1.0	20
4	7.4	9	7.4	10	9.7	10
5	8.5	8	13.4	6	9.5	11
6	2.0	18	1.1	19	18.4	6
7	19.3	4	18.8	5	18.45	5
8	13.1	7	10.6	8	13.6	8
9	2.8	16	4.6	13	7.2	12
10	4.8	12	6.0	12	5.9	14
11	31.4	2	37.7	2	36.9	2
12	14.6	6	12.4	7	19.6	4
13	3.2	15	6.1	11	4.8	15
14	4.3	14	3.2	16	3.1	18
15	26.2	3	18.9	4	15.9	7
16	6.3	10	4.4	14	6.5	13
17	2.3	17	3.1	17	4.5	16
18	5.1	11	9.1	9	9.8	9
19	1.2	19	2.9	18	2.4	19
20	16.3	5	37.3	3	31.6	3

*Computed from Wellford and Wiatrowski, 1975, p. 183

Wellford and Wiatrowski's table IV has been rescaled to the least serious offense (number three event number) so that the ratios among the three columns may be more easily compared in table 1.

Table 1 exhibits a strong concordance of ratios and rank orderings, especially among the Florida State responses. Even the agreement with the Sellin-Wolfgang data is notable when one considers that those data were generated in the early 1960's in a different setting with a somewhat altered methodology. Wagner and Pease have criticized Wellford and Wiatrowski's findings because correlations instead of means tests were employed. However, it must be pointed out that ratio comparisons are the most relevant for the resolution of this disagreement and here in table 1 it is quite evident that the directly and indirectly scaled complex events yield similar results. Of course, as in all fallible data, some discrepancies do occur, but these departures from agreement must not be allowed to overshadow the overall pattern in the responses.

More recently, Gottsfredson, Young and Laufer (1980) have brought more sophisticated methodology to bear on the problem of additivity and dimensionality to determine how the amount in dollars of theft interacts with other aspects of the offense in determining perceived severity. One hundred and fifty-nine students at Johns Hopkins University were asked to respond on an 11-point category scale to descriptions of offenses involving simple theft, check fraud, burglary, vandalism, robbery, rape, and robbery resulting in death as dollar value of the loss varied from $5 to $10,000.

Gottfredson, Young, and Laufer used a simple category scale but treated the responses as if they were magnitude estimates and indeed, as table 2 (their table 4) indicates, the correlation coefficients for the power functions are large except for instances of serious injury, thus supporting the assumption that these data can be represented by a power function. It should be noted that category scales (as shall be discussed in chapter 5) do suffer from end-point effects and the scale type may be causing some of the lack of fit.

As table 2 substantiates and Gottfredson, Young, and Laufer concluded from their analysis of variance tables, there are strong crime-type, dollar-value and, to a lesser degree, type-dollar interaction effects in these data. If the increment in dollar values were being perceived more or less in the same manner across offense

Table 2

Regression equations for seven types of offenses*

Offense	Equation (intercept + slope)		$\sigma_{b_{yx}}$
Theft	.9597 + .1129 log $	.9567	.0109
Vandalism	1.0997 + .0995 log $	.9375	.0117
Check fraud	.6656 + .1335 log $	.9795	.0087
Burglary	1.1949 + .0863 log $	.9588	.0081
Robbery	1.6332 + .0472 log $	.9399	.0054
Rape	2.2692 + .0047 log $	.8005	.0011
Robbery/ death	2.3547 + .0011 log $	.4657	.0007

*Adapted from Gottfredson, Young, and Laufer (1980, table 4).

types, then the slopes should be more or less identical. In table 2, offenses involving physical contact, robbery, rape, and death all exhibit reducing slopes in that order. As the amount of injury increases the increment in perceived severity of additional dollar loss decreases.

On the other hand, the slope differences for various kinds of theft are not too great and probably the assumption of simple additivity would not do too great an injustice to the observed interactions. However, the authors are correct when they state:

> Interactions such as that observed in the present study do not necessarily imply that offenses (or discrete actions occurring within a given "offense episode") are not agglomerative—they merely suggest that an additive model may not be appropriate. Data presented here, for example, would suggest at a minimum that an index such as that of Sellin and Wolfgang could tend, on average, to overestimate the severity of offenses such as robbery and rape. [p. 39]

In chapter 3 the extent of error which results from the application of a simple additive model will be evaluated using data from the National Survey on Crime Severity.

Obviously, more research will be required before conclusive evidence can be presented. The issue of additivity is a very complex and crucial one, for it provides evidence for the "ratio" theory in perception and provides a major element in the utility of this type of crime indexing.

As previously indicated, one of the important questions surrounding the Sellin-Wolfgang conception of severity is that of dimensionality. Unfortunately, the magnitude estimation procedure employed to construct and replicate the Sellin-Wolfgang index does not allow for an investigation of the possible multidimensionality of the concept. The procedure employed assumes ordinal transitivity in the scale; that is, *A>B, B>C,* thus *A>C.* It is, however, not inconceivable that another response set might be *A>B, B>C,* but *A<C,* especially because crimes themselves are categorical or nominal concepts. By projecting crime severity onto a one-dimensional line, any complex spatial configuration which may exist in conceptions of severity is lost.

If, however, multidimensionality were to be discovered, it would not necessarily follow that the hypothesized power relationship does not hold. In Hamblin's (1974) studies, for example, it was shown that the concept of socioeconomic status (SES) was composed of three variables: income, education, and occupation. Each of these three variables was related as a power function to the global variable SES, but there were also multiplicative effects among the three components. Thus, Hamblin reported, the underlying model could be formalized as:

$$\log Sg = \log C + B1 \log Si + B2 \log Se + B3 \log So + \log e$$

where *Sg* represents the global SES, and *Si, Se,* and *So* represent the constituent variables. Hamblin noted that similar multivariate power relationships have been recorded in the literature.

Putting aside the underlying theoretical validity of the Sellin-Wolfgang scale, however, there remains the problem of data collection. As Stevens (1975) himself indicated, his measurement procedures have changed in many ways since he first employed the magnitude estimation procedure. One of the problems that has been shown to exist with a general population is that of understanding the exact nature of the task involved. Perhaps this problem did not arise for Sellin and Wolfgang or Stevens, or many other investigators, because their respondents tended to be college students and others who had at least a minimal facility with the number system. Furthermore, many investigators employing the technique—especially psychophysicists—have used other measurement techniques such as hand dynamometers or line estimation, which are devoid of abstract symbolic representations, to obtain subject responses. Chapter 2 presents the results of a study addressing the relationship among response modalities to offense stimuli.

In addition to the problem of understanding the number system is that of the utility of a standard point or modulus for guidance of the respondent. The use of a standard point—say a theft of a bicycle equals 10—gives the respondent an anchor by which he may judge all other responses. Unfortunately, the use of such a standard may also bias a respondent's response set because an unsophisticated respondent may not perceive the number system in the same manner as a mathematician who defines its properties axiomatically. For example, many people may not perceive the equality of the ratios 0.1:10 and 10:10,000. Both ratios are numerically equivalent; however, a respondent may not have an intuitive appreciation of this ratio equivalency. To avoid this problem, Stevens (1966a) has suggested either varying the standard point or doing away with it altogether. By following either of these two strategies, he argued, the possible response bias created by a perceived unacceptable reference level may be minimized. In fact, Lodge and Tursky (1979, p. 34) emphasized that free or subject assignment of the standard results in a smaller regression bias in magnitude estimates. Therefore, in their laboratory experiments they no longer supply a reference standard to subjects attempting magnitude estimation.

Critical comments on the utility of the Sellin-Wolfgang scale

The major substantive argument for the employment of the Sellin-Wolfgang index is that it is a more appropriate indicator of the "crime problem" than current indices. Because the index purports to weight crimes by their perceived severity, as opposed simply to indicating volume, it is assumed that a more complete indicator of the nature of criminal or delinquent activity results. Most critics readily acknowledge the conceptual superiority of the Sellin-Wolfgang index over the current practice of presenting the UCR index, which is based solely on a representative measurement of volume. Some criticism has been raised, however, with regard to whether in practice the Sellin-

Wolfgang index warrants the extra effort required for its implementation. Essentially, this is a cost/benefit argument over the practical acceptance and implementation of the scale as opposed to a query regarding its scientific validity.

Hindelang (1974) has noted that, for most practical purposes, the UCR may be more than adequate for indexing crime, and that the costs and extra effort required to calibrate and implement the Sellin-Wolfgang index on a national level outweigh any potential benefits. In comparing the UCR index with results from the National Crime Panel victimology surveys, Hindelang noted that, while the UCR index consistently underestimates victimization reports, there is a near perfect match with regard to the ordering of the offenses. Furthermore, when Hindelang used unweighted UCR statistics to produce a ranking of States and counties along an extent and severity continuum, he found the results to be almost identical to those he obtained when he employed weights he had derived from the Sellin-Wolfgang index. The predominant factor in either calculation is that property crimes, even though they tend to be weighted less (viewed less seriously) than personal offenses, outnumber personal offenses to such a degree that they totally overwhelm the increased weighting contributed by personal offenses. Thus, Hindelang concluded, even though the UCR index has many conceptual shortcomings, it provides a practical, robust indicator of the relative incidence of known index offenses.

Blumstein (1974) arrived at similar conclusions when he employed the Sellin-Wolfgang scores as computed by Heller and McEwen (1975) in his attempt to assess the aggregate seriousness of the Federal Bureau of Investigation's Uniform Crime Reports (UCR) index offenses. After weighting the index offenses by their appropriate average seriousness scores for each offense type and then summing the scores, Blumstein plotted the computed Sellin-Wolfgang scores against the standard UCR index. Using 13 data points from 1960 to 1972, Blumstein obtained a Pearson *r* of .9994 between the two indices.

However, current UCR practices do not take into account the complexities of criminal events composed of multiple offenses. In this respect, Wellford and Wiatrowski (1975) are correct when they indicate that both Hindelang and Blumstein are committing a type of ecological fallacy. It is inappropriate to apply mean seriousness scores derived from a study to raw crime categories. Not only are those categories subject to several types of error, as discussed earlier, but the distributions of seriousness scores for each crime code type are also quite broad, indicating that a variety of criminal behavior is contained within each UCR crime type. Turner's (1978) introduction to *The Measurement of Delinquency* responded to Blumstein's point:

> Some objections can be raised to Blumstein's contention. First, he does not calculate the Sellin-Wolfgang scale as its authors do. It is simply not true that the Sellin-Wolfgang scale can be represented as a series of weight-times-frequency of seven index offenses. Many offenses which Sellin and Wolfgang would count are not FBI index offenses and some offenses they count, the FBI does not. The point could be raised in rebuttal that different Sellin-Wolfgang offenses and UCR offenses are strongly intercorrelated, but it remains that Blumstein's argument rests on assumptions which do not have to be made (given better data) and which may be crucial to his conclusion. Second, and more important, Blumstein's contention is only rarely relevant. The operational setting to which he implicitly refers seems to be one in which a decision-maker would survey the whole nation and decide whether crime was increasing or decreasing. Blumstein's advice to such a decision-maker is "Use the UCR; it is simpler and cheaper." But how much decision-making takes place on such a plane? Most decisions in the criminal justice system are about individuals—whether to arrest them, what offense to charge them with, whether to prosecute them, what sentence to pass on them. In such a case how would Blumstein's advice fare? Pretty poorly. The district attorney, say, must decide which of two defendants to proceed against, and the character of the offense each is suspected of is probably the most important single variable affecting his decision. (In a district attorney's office, the number of offenses to be dealt with at any one time is constant; what is free to vary is the assessment of their seriousness.) Application of the Sellin-Wolfgang scale would suggest proceeding against the more serious. Similarly, sentencing is influenced by the relative severity of the offense and the relative extensiveness of the previous criminal history of the defendant. Blumstein has shown, in short, that the UCR and Sellin-Wolfgang scale point to the same decision in certain contexts, but these contexts do not include the day-to-day operations wherein uniform crime reporting is useless. [pp. x-xi]

Additionally and most important, the crime severity scale is more than an alternative to existing crime indices. Responses to the items represent a survey of the participants' attitudes about the seriousness of various types of criminal behaviors. Regardless of the underlying response mechanisms which may be operating to generate recognizable patterns in those responses, studies of this type are attitude surveys. Such surveys are in and of themselves worth undertaking because they tap a piece of the moral consensus, or lack of it, at a given time and place.

Some successful applications of the scale

The scale has found useful application in several academic and practitioner applications over the years since its introduction. Early among these was Martin Gold's (1966) study of hidden delinquent behavior in Flint, Michigan. Although the nature of Gold's data did not permit precise application, he approximated the index by assigning weights derived from it to a set of nine offenses. Seriousness scores were then employed with frequency counts of the offenses to measure the incidence of concealed delinquent behavior serious enough to warrant arrest and to measure the seriousness of these hidden delinquencies. Gold noted a difficulty inherent with the use of a seriousness index: juveniles tend to conceal acts of property destruction and unauthorized use of motor vehicles, both of which are considered somewhat serious. As a result, there is danger of distorting the actual severity of hidden juvenile delinquency.

However, use of the seriousness index allowed Gold to make some interesting observations. He found that the frequency of delinquent behavior was a greater determinant of being apprehended by the police than seriousness but that the seriousness of the offense was taken into account by the arresting officer in his decision to charge the juvenile with the offense. Gold noted that the most serious offenders are thus likely to be the most frequent offenders to be booked.

Gold further noted that the seriousness index was a better discriminatory tool for uncovering the differences among delinquent behaviors between high- and low-

status nonwhite boys than was the frequency scale. Further, the frequency scale revealed no differences between the delinquent behavior of nonwhite unskilled and nonwhite semiskilled juveniles, whereas the seriousness index showed the behavior of the former group to be more serious than that of the latter. Thus, by utilizing a seriousness index, Gold was able to report some aspects of concealed juvenile delinquency which may have otherwise remained hidden.

Wolfgang, Figlio, and Sellin (1972) used the seriousness scoring system in their study of 9,945 boys born in 1945 who lived in Philadelphia from their 10th to 18th years. The 10,214 offenses charged to 3,415 boys in this cohort were scored by the use of Sellin-Wolfgang weights and the delinquency careers of these individuals were described in terms of the type of offense, seriousness of offense, and frequency of offenses. Demographic and other background characteristics were related to type of offense and seriousness.

In general, it was found that nonwhite, low-socioeconomic-status boys were charged with the most serious offenses and that offense seriousness declined as SES increased so that the continuum from low-SES nonwhite to high-SES white was related inversely to offense seriousness. Offense careers did not escalate in severity per offense except for injury offenses where repetitions became more serious.

The use of the offense seriousness measure was crucial for the analytical tasks of the Philadelphia Birth Cohort study. A large proportion of the findings of that study depends on the measure of offense seriousness. For example, it was shown that harsher dispositions were followed by more serious offensive behavior and that a small subset of the cohort population accounted for the bulk of social harm. It is in this area of offender-offense-specific analyses that a severity scale based on the components of an event yields its greatest contribution.

Another policy-oriented use was made of the seriousness index by Heller and McEwen (1975) in St. Louis, Missouri. It was their purpose to investigate the use of crime seriousness information as supplied by the Sellin-Wolfgang index in order to determine the utility of employing such information in assigning cases to detectives, in the allocation of patrol personnel, and in the determination of size and location of police patrol beats.

These investigators chose the Sellin-Wolfgang index for four reasons: (1) The set of components of events was complete enough that separate seriousness estimates were not required for each possible combination of events. (2) The scale had been tested and replicated with success in many countries and therefore its reliability and validity were substantiated. (3) It allowed for the computation of seriousness scores for property loss, injury, and intimidation in separate totals. (4) The application envisioned was relevant for this sort of scale.

A total of 8 weeks of crime information obtained from the St. Louis police department was coded using the Sellin-Wolfgang index, providing statistics which quantified the seriousness of various categories of offenses. Heller and McEwen found that the average seriousness for all crimes committed during the period was 3.00, the average property loss was $104.72, and the average seriousness of crimes against the person which occurred during the 8 weeks was 9.02. It was further discovered that the UCR's attributing equal weighting to all Part I offenses might lead one to misinterpretation or invalid conclusions. The average seriousness of homicide, for example, was found to be 33.29, while the average seriousness of aggravated assault was 9.74 and the average seriousness of auto theft 2.29, while the UCR would give equal weight to each offense.

In distinguishing between suppressible (those visible to police on patrol) and nonsuppressible offenses, Heller and McEwen noted that the average seriousness for nonsuppressible offenses was 3.82 while the average seriousness for suppressible offenses was 2.82. With respect to crimes against persons, it was observed that the average seriousness for nonsuppressible offenses was 11.16 as compared with 8.34 for suppressible offenses.

The elements of the index which account for property loss, injury, and psychological stress (intimidation) suffered by the victim were thought to render the scale especially useful for measuring the seriousness of traffic accidents. Heller and McEwen, however, acknowledged that the stress of intimidation experienced by a victim during an offense and the psychological stress suffered during a traffic accident do not correspond directly, due to the lack of malicious intent in the latter. Using the injury and property damage elements of the Sellin-Wolfgang index, the average seriousness of three classes of accidents was estimated. The overall average seriousness of all accidents was 4.53 as compared with the average crime seriousness of 3.00. Fatal and injury accidents produced an average seriousness of 7.80 while the average seriousness of accidents involving only property damage was 3.00.

The authors studied the distribution of total seriousness and average seriousness per incident by day of the week, police shift (watch), and police district. For most cases, there was a positive correlation between the distribution of seriousness scores and the distribution of the number of incidents. Monday, Friday, and Saturday were found to have the highest percentage of serious offenses.

From these findings, Heller and McEwen proposed that, as a basis for work assignments of detectives, those cases with high seriousness scores be allocated first, thus replacing the informal process of arbitrarily choosing cases for investigation. Further, it was suggested that the seriousness information be used as a measure of effectiveness of detective operations in the same way as clearance rates are currently employed. This revision in recording practice would allow for the estimation of a seriousness of offense clearance rate, reflecting more accurately the effectiveness of the detective unit, because the most serious crimes tend to be cleared by arrest.

The allocation of patrol personnel in St. Louis at the time of this study was based on a weighted workload formula which included calls for service, service time, crimes against the person, crimes against property, UCR Part I offenses, arrests, and traffic accidents. Heller and McEwen replaced the weights of the formula with the average seriousness of the crime occurrences. They noted, however, that substitution of their data did not significantly alter the allocations of police in St. Louis (the new model required the reassignment of 2.5 percent of the officers, or 38 policemen), even though the

extended model more adequately took into account the varying nature of crime and calls for service.

Regarding the use of seriousness information in determining patrol beats, Heller and McEwen extended their previous work by attempting to equalize the expected total of serious crime in each beat as part of a more complex use of multiple criteria in beat design.

Another successful direct application of the scale is the PROMIS (Prosecutor's Management Information System) system used in Washington, D.C., to estimate the urgency of a case for prosecution (Jacoby, 1972). In this application it was shown that an experienced prosecutor's evaluation of the urgency of the need to pursue a court case could be estimated by the following equation:

$$U = pw^1SW + pw^2BE$$

where U = judged urgency of case for prosecution,
P = subjective probability of winning the case,
SW = seriousness of offense with Sellin-Wolfgang scale, and
BE = base expectancy rate of recidivism.

With w^1 estimated at .22 and w^2 at .09, seriousness is more important than the likelihood of recidivism for judging the urgency for prosecution.

The index and its technique of derivation, although used both for academic and field-oriented purposes, has not been confined to the United States and Canada. The studies of Hsu in Taiwan (1973) and Velez-Diaz and Megargee in Puerto Rico (1971) at least partially suggest that the scaling method may have practical use for cross-cultural studies. The work of Normandeau (1970), summarized in "Crime Indices for Eight Countries," speaks to this issue. He conducted inquiries among first-year university students in the United States, Canada, England, the Congo, Taiwan, Indonesia, Brazil, and Mexico. From these inquiries he was able to devise a simplified index, comparable to that of Sellin and Wolfgang. The scores obtained lend themselves to comparison, "In view of the fact that we invited the inhabitants of these countries to evaluate an identical situation with reference to a similar scale of values..." (p. 15).

On observing the differences among countries with respect to certain elements of criminal events, Normandeau suggested that they may be used in the same way that crime rates are currently calculated: providing a method for the creation of an extralegal weighted crime index comparable to that of other countries. Thus a basis for international comparison would be created which could also be used to assess the effectiveness of anticrime campaigns, and the quantitative and qualitative evolution of recidivism. There are, however, some considerations which must be attended to if a practical, cross-cultural use of the index is to be made.

Pease, Ireson, and Thorpe (1975), in a response to the work of Normandeau, identified some of the problems inherent in the cross-cultural application of the scale. First, they noted that, because the rough seriousness scores differed among countries, one cannot effectively compare seriousness ratings on a particular crime across them because the range over which the seriousness judgments vary is different for each of the eight countries. They also pointed out that neither Sellin and Wolfgang nor Stevens made comparisons over different cultural groups to determine if valid cross-cultural comparisons are possible when "noise" is averaged out.

The expression of seriousness scores as ratios of larceny of $1 assumes agreement across countries on the seriousness of a larceny of $1. It was further suggested that losses should be expressed in relation to some measure of purchasing power in the currency of the country in question. The danger of not adjusting the scale intercept is, according to Pease, Ireson, and Thorpe, the possibility that the scores of offenses other than theft will be distorted because the seriousness of all offenses is expressed as a ratio of larceny involving $1. The likely effect would be to depress the seriousness of all offenses not involving theft or damage in countries where a $1 equivalent has a high purchasing power.

Pease, Ireson, and Thorpe noted that, regardless of the assumptions of the study designers and all their likely precautions, raters will infer characteristics of people they feel are likely to commit the described crimes and will also make inferences regarding the circumstances of the offenses. While these inferences may not prove problematic for intracultural studies, they may prove problematic for cross-cultural comparisons.

Christiansen (1970) elaborated on the cross-cultural use of the Sellin-Wolfgang index in a report to the Council of Europe. Based on some pilot tests carried out in Copenhagen, he identified problems concerning the implementation of the index in some European countries. He noted that the questionnaire items utilized would, to some extent, depend on the legal code in the country where they were applied, but not to the degree that cross-cultural comparisons would be rendered impossible. In addition, for reasons of time and clarity, Christiansen presented short descriptions of the offenses including some details of the circumstances, rather than just the name of the offense.

The criticism of G.N.G. Rose (1966) regarding the test procedure used by Sellin and Wolfgang, of not allowing the subjects to turn back to previous ratings, was evaluated in the Danish pilot studies. Christiansen conducted practice tests allowing the raters to turn back and review previous answers. During the actual test the raters were allowed to refer to the practice tests, although they were not allowed to review answers given during the actual rating task. Some raters found that this method eased the task for them, although no definitive confirmation of the advisability of a review was developed. The raters for the Danish pilot studies came from various social classes, including law students, teacher-training college students, policemen, factory employees including apprentices, male and female laborers, white-collar personnel, and young offenders in a prison. Christiansen noted that, unlike the college students in Philadelphia, students in Denmark did not support the middle-class value system. He further identified two possible populations which could be sampled in order to create rating groups: (1) a narrow population of experts consisting of the criminal judges of the country and (2) the widest selection, a random sample of the entire population. He argued that either of these respondent groups would be satisfactory for specific purposes, although the same procedure ought to be used in every country.

It was assumed that the implicit scale used to determine offense seriousness was unidimensional, that each person used the same implicit scale, and that the scale was the same for all persons in the same experimental group. The results of the prepilot studies confirmed these assumptions for the most part, except with regard to nonviolent sex offenders and crimes of violence. Christiansen concluded that the results of the pilot studies did not reveal anything which would not support a recommendation to carry out further studies across Europe. Like Pease, Ireson, and Thorpe, he also concluded that offense descriptions should be more detailed and concrete because much was left to the imagination of the rater, thus perhaps increasing the probability of inconsistencies. Lastly, Christiansen did not recommend adoption of the category scale as a method of rating because of unsolved problems found in the psychophysical scaling literature on the relative merits of category and magnitude estimation scales.

Conclusion

From the amount of attention this topic has received over the years, it should be apparent that the need for a measure of offense severity exists, that the Sellin-Wolfgang scale offers a sound basis for building a national-level scale, and that certain methodological and theoretical problems still need to be addressed despite the numerous successful replications and applications the technique has enjoyed.

Because of widespread interest in the scale and the time and place limitations of the Sellin-Wolfgang study, the predecessor agency of the Bureau of Justice Statistics (BJS) in 1976 awarded the Center for Studies in Criminology and Criminal Law a grant to begin work on developing a national survey of perceived severity of criminal offenses. Specifically, BJS and the Center wished to take advantage of the National Crime Survey currently being conducted by the U.S. Bureau of the Census for BJS by appending a set of crime severity items to the victimization survey form. The purpose of the survey was (1) to determine on the national level public perception about the relative severities of various kinds of crimes, (2) to determine the perceived severities of various crimes according to regions, States, size of place, and other demographic characteristics of the population, and (3) to determine if the data generated by the survey would produce a structure resembling a scale similar to that previously investigated.

In the next chapters, then, the topics of scale validity of the items, additivity, reliability of responses, and study and sample design are addressed. Chapters 7 and 8 review the general findings of the National Survey of Crime Severity; chapter 9 outlines the manner in which the scale may be applied in research and Volume II presents reference tables of item responses.

Cross-modal validation of the severity scale[1]

Chapter 2

The number of different kinds of nonphysical continua which have been shown to be scalable through magnitude estimation procedures is quite impressive. Lodge and Tursky (1979, p. 16) cited more than 20 studies of different social opinion scales, in addition to crime seriousness, which use ratio estimations including the prestige of occupations, social status, strength of religious attitudes, severity of punishments, seriousness of illness, life stresses, the importance of political offices, political dissatisfaction, liberalism-conservatism, national power, race-relatedness of political issues, and so on. However, most of these scales are based, as is the Sellin-Wolfgang scale, on only one magnitude estimation modality. As a result they are not psychophysically validated.

The cross-modality matching technique developed by Stevens, Mack, and Stevens (1960) and further developed by Cross (1974, 1976) enables verification of the power function of responses to physical and nonphysical stimuli. As Lodge and Tursky (1979) stated in their guide to magnitude scaling:

> The logic of the cross-modality matching paradigm is straightforward *if* the power law is valid and *if* the exponents derived from magnitude estimation are truly characteristic, *then* any two quantitative response measures with established exponents could be used to judge a sensory continuum and the validity of the derived magnitude scale confirmed by obtaining a close match between the theoretical and empirically obtained ratio. . . .
>
> Stated more formally, if the sensation of the first response modality R_1 is related to the stimulus S by a power function with a characteristic exponent of a
>
> $R_1 = S_1 a$
>
> and if the sensation of the second modality used in the cross-matching procedure is related to the same set of stimuli by its own characteristic exponent b
>
> $R_2 = S_2 b$.
>
> When R_1 and R_2 are matched to the value of S we can substitute stimulus values so that
>
> $S_1 a = S_2 b$.
>
> Then by taking the logarithm of each side of the equation we can write
>
> $a \log S_1 = b \log S_2$
>
> or $\log S_1 = a/b \log S_2$.
>
> When the values are plotted in log-log coordinates, this equation represents a straight line, a power function, with the slope of the line equal to the a/b ratio of the original exponents. [p. 12]

The results of cross-modality matching are valid regardless of the type or kind of response stimuli.

Because the validity of the power function developed by Sellin and Wolfgang has been questioned, as discussed in chapter 1, and because the techniques for validating the scale are now available and readily applied, a study dealing exclusively with this question was designed and undertaken with the staff at the Laboratory for Behavioral Research at Stony Brook. The work of Lodge and his associates represents the most advanced and sophisticated contribution to this particular area of psychophysical research. As detailed below, four experiments investigating the cross-modal validity of items from the scale developed for the National Survey of Crime Severity were performed.[2]

Experiment 1

Methods

Subjects. Forty undergraduates (20 males and 20 females) were randomly chosen from a pool of volunteers. All subjects participated in an experimental session lasting approximately one hour.

Stimulus materials. Each subject was presented with three different types of stimulus materials. A series of line lengths (1, 2, 3, 5, 7, 10, 15, 22, and 30 mm) were presented on a TV monitor located approximately 4 feet in front of the subject, and a series of number stimuli (3, 5, 7, 11, 40, 62, and 95) were presented in the same manner. Finally, a set of 30 crimes was presented.

Response modes. Line production responses were made on packets of legal-size paper (8½″ × 14″). The subjects were asked to draw a line next to an appropriate trial number when they were cued to make a line response. Magnitude estimates were made by entering a

[1]The experimental work reported in this chapter was performed by Milton Lodge, Bernard Tursky, Mary Ann Foley, and Richard Reeder at the Laboratory for Behavioral Research at the State University of New York at Stony Brook under contract from the Center for Studies in Criminology and Criminal Law, University of Pennsylvania.

[2]The following material is essentially the report of the staff at the Laboratory for Behavioral Research.

number by means of a keyboard. The keyboard was located on the table in front of the subject; it was also used by the subject to advance each trial presentation for the stimulus sequences.

Procedure. When stimuli were presented to the subjects on the TV monitor each stimulus (line or number) was displayed in the center of the TV screen, and in the upper left-hand corner of the screen a response cue was also displayed (for example, line response). The crimes were typed on index cards (3″ × 5″); as the experimenter presented the subject with a particular crime, the subject also saw a response cue displayed on the TV monitor.

Each subject was told that there were three phases to the experiment. A brief instructional period for practicing the use of the response continua and the keyboard preceded these phases. In the first phase, the subject was shown the range of lines in the series. The subject was then instructed to give the first line a number; then all lines were given a number in proportion to this first response. In the second phase, the subject was first shown the full range of numbers and was then asked to give a line response to the first number; all other responses were given a line in proportion to this first line response. The stimuli were presented twice each time in irregular order, and each stimulus was accompanied by a response instruction.

During the third phase of the session, each subject practiced estimating crimes by using a set not included in the final validation set. After this practice exercise, the 30 crimes were presented two times, each time in irregular order, and each crime was accompanied by a "line" or "number" response instruction displayed on the TV monitor. Before beginning the estimation exercises, the subject was shown a list of all of the crimes in the set. The subject was then shown the following offense: "The offender disturbs the neighborhood with loud, noisy behavior." The subject was asked to give any number and line response to this offense and then to make all responses to the subsequent crimes relative to these first responses. The more serious offenses were to be given larger numbers and longer lines.

Table 3

Cross-modality matching (CMM)

Direct CMM	Experiment I	II	III	IV
log *ME* vs. log *LL*				
r	.99	.99	.99	.99
β	.87 ± .38	1.01 ± .17	.90 ± .12	.91 ± .13
log *LP* vs. log *Nu*				
r	.99	.99	.99	.99
β	.90 ± .15	.94 ± .09	.92 ± .14	.91 ± .13
Indirect CMM				
log *ME* vs. log *LP**				
r	.98	.98	.98	.98
β	.98	1.03	1.03	1.18

*The line production responses were corrected for regression bias using the following formula:

$\psi_i = R_i^{(1/\alpha)}$

where R is the geometric mean of the line production data matched to a crime, and α = .56, .83, .83, and .71 for Experiments I, II, III, and IV, respectively.

Results

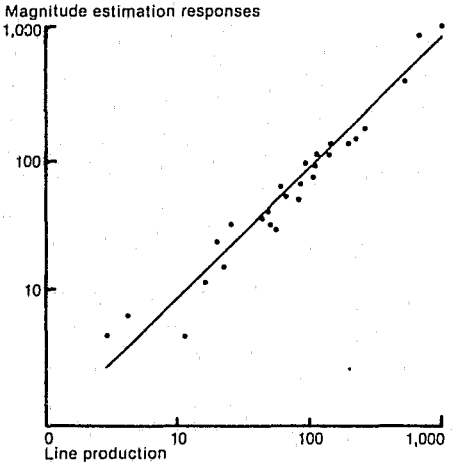
Calibration. Geometric means were computed for the responses to each stimulus. The exponent describing the direct cross-modal matching relation was .87 for the magnitude estimates matched to line lengths and .90 for the line production responses matched to numbers. These relations were well described by power functions as indicated by the high linear correlations summarized in table 3.

Seriousness of crimes. The geometric means of the magnitude estimation and the line production responses are independent estimates of the relative seriousness of the crimes. The results of this first experiment demonstrate a remarkable concordance between the perceived intensity of the seriousness of crimes and the relative magnitude of response. Figure 1 displays the results of the line production (*x*-axis) and the magnitude estimation (*y*-axis) responses, each matched to the crime.

The results of an indirect cross-modality (ICMM) relation between numbers and lines, each matched to crimes, is expected to be summarized by a straight line with an exponent equal to 1.0.[3] The empirical exponent for this ICMM relation is .98, which is not different from the theoretically expected value (1.0). Typically, the exponent for the ICMM relation between the magnitude estimation and the line production responses is used as a check for the cross-modal validation or internal

Figure 1

Severity of crime scale: Experiment I



The line production responses (*x*-axis) are plotted against the magnitude estimation responses (*y*-axis) in log-log coordinates. The relative magnitude scales for these crimes are summarized in table 2.

consistency of a scale.[4] When the obtained exponent (here, .98) is not different from the expected value (1.0), the scale is psychophysically valid. Although the results are expected to be summarized by a straight line with an exponent equal to 1.0, if the operation of regression bias contributes unequally to the two response modalities, then the empirical slope will depart far from 1.0. In this study, after the scales were corrected for regression

[3]See Cross (1974) and Stevens (1975).

[4]See Cross, Tursky, and Lodge (1975, pp. 9-14) and Lodge *et al.* (1975, pp. 611-649).

bias, the exponent (.98) for the ICMM relation indicates that this scale for the seriousness of crimes is psychophysically valid.[5]

On the basis of this study, the Crime Severity Scale is judged to be psychophysically valid. At this juncture it was decided to test further some aspects of the Crime Severity Scale because it differs in significant ways from the bulk of social scales. Most important, the range of this 30-item scale (approximately 300:1) is much wider than most scales reported in the social science literature.

It has been shown by Cross (1974) and Stevens (1975) that the range of the stimulus variables affects substantially the results of psychophysical scaling experiments. For example, Stevens and Greenbaum (1966) found that a very narrow range of stimuli will produce a steepening of the function relating the magnitude of a response (for example, magnitude estimation) with the perceived magnitude of a stimulus (for example, db noise). Although the range of target continuum (for example, crimes) cannot be determined a priori when the variables are social, the range of crimes used in this first experiment is empirically very large. This is supported by the relative scale values summarized in table 4 (for example, see items 12 and 28). In addition to the range of the stimulus variable, the spacing of stimuli is particularly important in that, if there are many stimuli which overlap, it is very difficult for the subject to discriminate among them.

A series of subsequent experiments were conducted, therefore, to obtain some preliminary information about the effects of range and stimulus spacing on the crime scale. Using the relative scale values derived from the results of Experiment I as a guide, three subsets of stimuli were selected for these experiments.

[5]The geometric means of the line production responses were corrected such that the empirical regression line was made to conform to the expected regression line with a slope of 1.0. Before correcting for regression bias on the line production data, the exponent for the ICMM relation was 1.6. The formula used to transform the line production data was:

$$\psi i = Ri^{(1/\alpha)}$$

where R was the geometric mean of the line production response to a particular crime and $\alpha = .56$.

Table 4

Experiment I

Offenses	Magnitude estimations	Line productions
Breaking and entering		
1. An offender breaks into a building and with no one else present, takes property worth $10.	26	19
2. Without breaking into or entering a building and with no one else present, an offender takes property worth $10.	17	21
3. Without breaking into or entering a building and with no one else present, an offender takes property worth $50.	35	23
4. Without breaking into or entering a building and with no one else present, an offender takes property worth $100.	41	38
5. Without breaking into or entering a building and with no one else present, an offender takes property worth $1,000.	57	73
6. Without breaking into or entering a building and with no one else present, an offender takes property worth $10,000.	76	78
Threats or inflicted injury		
7. An offender shoves (or pushes) a victim. The victim does not require any medical treatment.	13	16
8. An offender threatens to injure another person seriously.	33	49
9. An offender inflicts injury on a victim. The victim is treated by a physician but his injuries do not require him to be hospitalized.	71	78
10. An offender inflicts injury on a victim. The victim is treated by a physician and his injuries require him to be hospitalized.	152	174
11. An offender forcibly rapes a woman. No physical injury is inflicted.	442	488
12. An offender inflicts injury on a victim. The victim dies from the injury.	967	623
13. An offender forcibly rapes a woman. As a result of physical injuries, she dies.	1233	990
Robbery and injury		
14. An offender without a weapon threatens to harm a victim unless the victim gives him money. The offender takes the victim's money ($10) and leaves without harming the victim.	33	46
15. An offender threatens to harm a victim if he does not give his money to the offender. The victim gives him $10 and is not harmed.	44	44
16. An offender robs a victim of $10 at gunpoint. No physical harm occurs.	50	50
17. An offender with a weapon threatens to harm a victim unless the victim gives him money. The offender takes the victim's money ($10) and leaves without harming the victim.	67	66
18. An offender robs a person of $10 at gunpoint. The victim is wounded and requires medical treatment but no further treatment is required.	116	103
19. An offender robs a victim of $10 at gunpoint. The victim is shot and requires hospitalization.	157	195
20. An offender threatens to harm a victim if he does not give money to the offender. The victim hands over $1,000 and is not harmed.	70	69
21. An offender robs a person of $1,000 at gunpoint. No physical harm occurs.	79	99
22. An offender robs a person of $1,000 at gunpoint. The victim is wounded and requires treatment by a physician, but no further treatment is needed.	121	128
23. An offender robs a person of $1,000 at gunpoint. The victim is shot and requires hospitalization.	184	233
Arson		
24. An offender sets fire to a building, causing $1,000 worth of damage.	54	77
25. An offender sets fire to a building, causing $10,000 worth of damage.	107	101
26. An offender sets fire to a building, causing $100,000 worth of damage.	104	107
27. An offender sets fire to a building, causing $500,000 worth of damage.	142	138
Additional items		
28. An offender disturbs the neighborhood with loud, noisy behavior.	5	3
29. An offender is intoxicated in public.	7	4
30. An offender makes an obscene phone call.	11	5

Subsequent experiments

Methods

Subjects. Undergraduates were randomly chosen from a pool of volunteers to participate in experimental sessions lasting approximately 45 minutes. The number of subjects were 15, 15, and 10, in Experiments II, III, and IV, respectively.

Stimuli. A series of line lengths (1, 2, 4, 7, 14, 26, 50, 96, 185, and 355 mm) and a series of number stimuli (1, 2, 4, 7, 14, 26, 50, 96, 185, and 355) were used for the standard calibration exercises.

In Experiment II a set of crimes composed of the 12 "core crimes" which formed the primary scale of the National Survey of Crime Severity (NSCS) and the three most serious crimes from Experiment I were estimated. At the beginning of this session, only the core crimes were shown to the subjects. The most serious crimes were included as the last trials of the session. In Experiment III, a set of 15 crimes was chosen such that the items were approximately equally spaced on the relative scale derived from the results of Experiment I. Finally, a subset of the most severe crimes (most of which involved the death of a victim) was chosen from the remaining offense stimuli from the NSCS. The response measures used and the procedures followed are exactly the same as those described for the first experiment.

Results

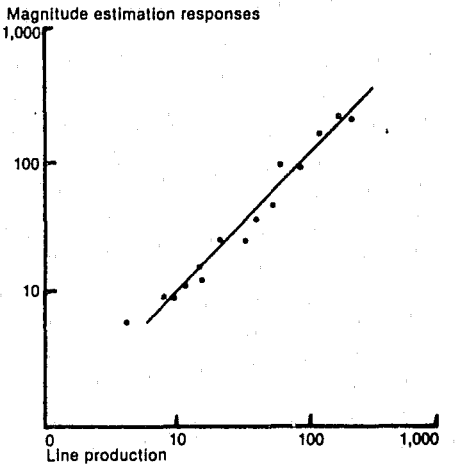
Calibration. Geometric means were computed for the response to each stimulus. The exponents describing the direct cross-modality matching (DCMM) relations are summarized in table 3. For each experiment these relations are well described by power functions, and the empirical exponents are not significantly different from the theoretical exponents (1.0), suggesting that if regression biases are present in these judgments they are only minimally contributing to the distortion of judgments.

Seriousness of crime. As shown in table 3, when the line production responses are equated for regression bias, the exponents describing the ICMM relations between the magnitude estimation and the (corrected) line production responses are no different from the theoretically expected value (1.0) for Experiments II and III. (In Experiment II, the exponent for the ICMM relation is no different from the theoretically expected value (1.0) whether or not the line production data are corrected for regression bias. In both cases the scale is psychophysically valid). That is, the exponent describing the ICMM relation is 1.03 for Experiments II and III. (The correction factors used to adjust the line production were .83, .83, and .71, for Experiments II, III, and IV, respectively. The formula used was the same as the one specified in footnote 5. If the scale values in Experiment III are not corrected for regression bias, the scale is not psychophysically valid because the exponent is 1.2.) In these instances, the results of the scaling of the subsets of the crimes are cross-modally valid. Upon inspection of table 3 we also see that the exponent (1.2) for the ICMM relation describing the results of Experiment IV is somewhat larger. Given that the items used in this experiment were all very serious crimes and since the inferred range was particularly narrow, these results are not surprising.

Figure 2 illustrates the relationship between the magnitude estimation (y-axis) and the (corrected) line production (x-axis) responses for the results of Experiment III. Here also there is clear evidence for strong agreement in the magnitudes of the two response modalities ($r = .98$) for the perceived intensities of crimes. The results of all these experiments demonstrate substantial concordance with much of the scaling work using magnitude estimation. Tables 5, 6, and 7 summarize the scaling results of each experiment. Because there were only minimal regression biases in the magnitude estimation data in each experiment, only the line production responses were equated for regression bias. Essentially, the scales summarized in tables 4, 5, 6, and 7 are shown to be psychophysically valid. If one is interested in testing the effects of stimulus range and the complexity of stimulus time, an extensive series of experiments would be required so that the effects of range and regression bias can be estimated independently. Such an investigation was beyond the scope of the present study.

Figure 2

Severity of crime scale: Experiment III



The magnitude estimation responses (y-axis) are plotted against the line production responses (x-axis) in log-log coordinates.

Table 5

Experiment II: Core crimes

Offenses	Magnitude estimations	Line productions
1. Without breaking into or entering a building and with no one else present, an offender takes property worth $10.	25	24
2. An offender shoves (or pushes) a victim. The victim does not require any medical treatment.	30	24
3. An offender breaks into a building and with no one else present takes property worth $10.	35	23
4. Without breaking into or entering a building and with no one else present, an offender takes property worth $50.	40	35
5. An offender without a weapon threatens to harm a victim unless the victim gives him money. The offender takes the victim's money ($10) and leaves without harming the victim.	40	50
6. Without breaking into or entering a building and with no one else present, an offender takes property worth $100.	50	43
7. An offender inflicts injury on a victim. The victim is treated by a physician but his injuries do not require him to be hospitalized.	50	50
8. Without breaking into or entering a building and with no one else present, an offender takes property worth $1,000.	65	56
9. An offender with a weapon threatens to harm a victim unless the victim gives him money. The offender takes the victim's money ($10) and leaves without harming the victim.	60	67
10. An offender threatens to harm a victim if he does not give money to the offender. The victim hands over $1,000 and is not harmed.	65	74
11. An offender inflicts injury on a victim. The victim is treated by a physician, and his injuries require him to be hospitalized.	90	65
12. Without breaking into or entering a building and with no one else present, an offender takes property worth $10,000.	115	87
13. An offender forcibly rapes a woman. No physical injury is inflicted.	450	355
14. An offender inflicts injury on a victim. The victim dies from the injury.	570	406
15. An offender forcibly rapes a woman. As a result of the injuries, she dies.	620	537

Table 6

Experiment III

Offenses	Magnitude estimations	Line Productions
1. An offender shoves (or pushes) a victim. The victim does not require any medical treatment.	6	4
2. An offender without a weapon threatens to harm a victim unless the victim gives him money. The offender takes the victim's money ($10) and leaves without harming the victim.	10	8
3. An offender inflicts injury on a victim. The victim is treated by a physician but his injuries do not require him to be hospitalized.	12	8
4. An offender threatens to harm a victim if he does not give his money to the offender. The victim gives him $10 and is not harmed.	12	11
5. An offender threatens to injure another person seriously.	13	15
6. An offender with a weapon threatens to harm a victim unless the victim gives him money. The offender takes the victim's money ($10) and leaves without harming the victim.	17	15
7. An offender robs a person of $10 at gunpoint. The victim is wounded and requires medical treatment but no further treatment is required.	26	32
8. An offender threatens to harm a victim if he does not give money to the offender. The victim hands over $1,000 and is not harmed.	29	16
9. An offender inflicts injury on a victim. The victim is treated by a physician and his injuries require him to be hospitalized.	38	37
10. An offender robs a person of $1,000 at gunpoint. The victim is wounded and requires treatment by a physician but no further treatment is needed.	50	50
11. An offender robs a person of $1,000 at gunpoint. The victim is shot and requires hospitalization.	96	77
12. An offender robs a victim of $10 at gunpoint. The victim is shot and requires hospitalization.	102	58
13. An offender forcibly rapes a woman. No physical injury is inflicted.	173	108
14. An offender inflicts injury on a victim..The victim dies from the injury.	223	155
15. An offender forcibly rapes a woman. As a result of physical injuries, she dies.	224	192

Table 7

Experiment IV

Offenses	Magnitude estimations	Line productions
1. An offender inflicts injury on a victim. The victim dies from the injury.	162	144
2. An offender forcibly rapes a woman. No physical injury is inflicted.	165	155
3. An offender kills a person by the reckless driving of an automobile.	171	174
4. A company disposes of its factory's industrial waste in a manner that pollutes the water supply of a city. As a result, one person dies.	183	174
5. An offender places a bomb in a public building. The bomb explodes and one person is killed.	195	200
6. Knowing a shipment of cooking oil is adulterated, an offender, a retailer, decides to sell it to the public. Only one bottle is purchased, and the purchaser dies.	207	194
7. An offender stabs a person to death.	213	225
8. An offender places a bomb in a building. The bomb explodes, and 20 people are killed.	225	223
9. A company disposes of its factory's industrial waste in a manner that pollutes the water supply of a city. As a result, 20 people die.	234	207
10. An offender forcibly rapes a woman. As a result of the injury, she dies.	240	203

Discussion

These experiments were designed to construct cross-modally valid scales of relative magnitude for the seriousness of a set of crimes. This cross-modal, multiple measurement approach is necessary for the construction of psychophysically valid scales, as discussed earlier. Scales which are cross-modally (or internally) valid can then be used to test many hypotheses about the social perceptions of the seriousness of crimes because the functional relationship between crime stimulus and its perceived severity is known.

Thus, in addition to the standard power function fits to the perception of dollar value loss, cross-modal validation adds increased security to the assertion that the perceptions of crime severity follow a power function and that the offense items most probably lie along the same dimension.

The closely allied assumption underlying the use of the scale, that of additivity, gains some support from this cross-modal validation; however, a direct test of additivity would be necessary to fully substantiate the position that simple additivity does exist in crime severity perceptions.

The problem of additivity

The question of additivity arose early in the development of the crime seriousness scale and has persisted to this moment—as was documented in chapter 1. However, it should be stated here that simple additivity, with its intuitive appeal and direct applied utility, is not a strictly necessary characteristic for the successful application and social relevance of the scale.

Responses to the scale items do represent the components of an attitude survey. The first and foremost objective of the National Survey of Crime Severity (NSCS) is the polling of a national sample of the U.S. population on its judgment about the relative severities of various types of crimes. In isolate, this objective of the survey need not relate to the existence of underlying structures in the response set. If the items tap the desired sentiments with some degree of validity and reliability, then one may be satisfied that, at least on that level, the survey can make a meaningful contribution to our knowledge of the moral tenor of our time. Thus, as shall be detailed in chapter 5, the choice of stimulus items was guided primarily by the need to supply a broad set of crimes to respondents so that the range of criminal behavior available for evaluation would be as close as possible to that of criminal acts committed in the population, while asking each respondent to judge the severity of only as many items as time, attention span, and fatigue allow. Early experiments indicated that requiring responses on 15 to 20 items optimized the quality of response on these dimensions.[1]

Because of these constraints, the number of stimuli available for determining the scale characteristics of the items was severely limited. As in past studies of the Sellin-Wolfgang type, dollar value was given several levels ranging from $10 to $10,000 so that the parameters of the function relating dollar value and its perception could be determined. However, a full test of the additivity assumption or a determination of the combination rules actually manifested by responses was beyond the time and fiscal capabilities of this study.

[1]Conducted by the authors and by Milton Lodge and Bernard Tursky and discussed in personal correspondence.

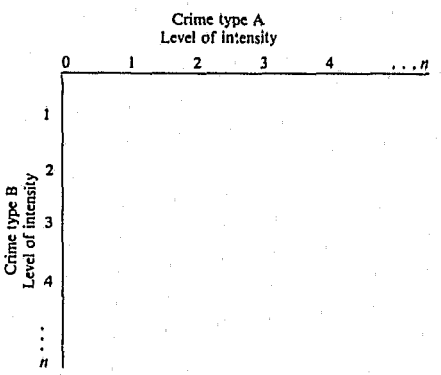
Nonetheless, the characteristics of the scale, especially those of combination, should be investigated not only to satisfy intellectual curiosity but also to ascertain if application of the scale to criminal justice data under the assumption of additivity compromises the validity of conclusions drawn from such an enterprise.

In the preceding chapter it was reported that the experiments undertaken on behalf of this research by Lodge *et al.* clearly verified and substantiated previous work showing the power function relationship between dollar value and its perception for other offense stimuli as well. Thus, as a result of the cross-modal matching exercises it may be safely concluded that the scale is psychophysically valid and that a power function relationship does obtain between offense stimuli on the one hand and the perception of the relative severities of those stimuli on the other. Thus the question is not whether additivity exists, but rather what the nature or form of that additivity is.

To this end, the techniques of additive conjoint measurement may be employed effectively.[2] In the psychophysical literature, the development work along these lines concerned the perception of loudness; specifically, does a binaural stimulus sound twice as loud as a monaural stimulus? If the perception of a monaural loudness change follows the power function $\psi_m = K_m \phi_m^n$ and a binaural stimulus is perceived as $\psi_b = K_b \phi_b^n$, then monaural-binaural matching should produce a straight line with a slope of 1.0 if the two exponents are equal. Evidence (see footnote 3 in chapter 2) indicates that the situation is more complicated than that explicated here, but the questions of additivity and summation ultimately can be addressed only empirically and these investigators have pursued the solution to this problem with data which, unfortunately, are unavailable to those seeking the summation rules for the perception of criminal behavior (because conjoint matrices for all offense combinations are not yet available).

[2]For development of this line of thought see Falmagne (1976), Krantz *et al.* (1971), Levett, Riemersma, and Bunt (1972), Luce and Tukey (1964), and McClelland and Coombs (1975).

Ideally, we would like to fill the matrix of all possible combinations of offense stimuli for which the question of additivity is relevant. Thus, a matrix such as this:



would have an item for each element of that intensity of each stimulus. These conjoint elements then form the basis for the test of additivity against the responses to the single stimulus of *A* and *B*. Of course, a large number of items quickly becomes necessary for an adequate test. In addition, one would have to assume that additivity for a particular comparison of crime types could be generalized to another comparison with some other crime types unless we are able to test *all* relevant comparisons.

In the context of the NSCS, the most tractable offense types for comparison are simple theft in which the dollar value varies from $10 to $10,000 (one entry of $100,000) and degrees of injury (in combination with theft, usually called robbery). Unfortunately, the constraints on time and number of items detailed above did not permit the production of even a complete matrix of that useful comparison. As a result, any reasonable combination with dollar value having two or more stimuli was enlisted for the task. Table 8 details the ratio scores available in the survey for this comparison. The injury types vary by only three dollar values, threats and kidnapping by two. Additionally two property crimes which were varied by dollar loss are also included. Because of the vacancy of so many cells, only a simple analysis will be presented here (more complete data could be subjected to extensive examination such as suggested in footnote 2). It is not being asserted that an adequate test of

the additivity assumption is possible with these data; however, some estimate of the effect that such an assumption may have on conclusions is offered with the hope that illumination may be shed on previous and future applications of the scale which have taken or may take additivity as a given.

Thus, in table 8 each entry is the ratio score[3] for an offense stimulus containing *both* the crime type listed in the column *and* the dollar value of loss appropriate for that cell in the matrix. For example, the ratio score for an offense containing minor injury *and* a theft of $10 is 5.13, while the ratio score for an offense resulting in the victim having to be hospitalized *and* having $1,000 taken is 16.88 and so on.

The purpose of this matrix is to determine the effect of an additional offense type on the incremental perceptions of the severity of dollar-value loss. A cursory glance at table 8 shows that the ratio differences among dollar-value increments do vary according to the type of associated offense. The ratio of a simple theft of $1,000 to $10 is about 4.0; for threats, 1.6; for minor injury, 1.6; for treated and discharged, 2.5;[4] for hospitalized, 1.2; for breaking and entering, 3.1; and for trespassing, 5.7.

Table 9, in columns (a) and (b), presents the slopes of perceived loss, with various types of additional offenses, generated by the regressions against dollar-value loss for the ratio scores of table 8. The incremental effect of dollar loss on the perceptions of the severity of complex offenses is increasingly negated by the overshadowing force of increasing injury severity. Thus, the slopes produced by the combination of dollar-value loss with the addition of a kidnapping are extremely small (.019 and .044, respectively), followed by threats (.095) and treated by a doctor and discharged (.097). Breaking and entering, with its implied risk, actually has a stronger effect on leveling the impact of dollar loss than does minor injury (.187 compared to .212) although their intercepts are similar (.296, .332). Finally, trespassing as a complex event has a small, opposite, but insignificant, bearing on the perception of dollar loss (slope of .303 compared to .268 for a simple theft). Indeed the intercept is about zero. The more serious the injury or the implied danger (threats and kidnapping), the larger the absolute value of the severity ratio (the greater the intercept) and the less the increment in dollar-value loss affects the perception of the severity of the combined criminal event. To that extent these results confirm those reported by Gottfredson Young, and Laufer (1980, p. 30, 34) as described in Chapter 1.

As a matter of interest, at this point an issue introduced by Lesieur and Lehman (1975, p. 79) regarding the reliability of slopes based on regressions of geometric means should be addressed. They argued that plots of geometric means on log paper (or log transformed regressions) overstate the strength of relationships and give a false impression of order. Columns (c) and (d) of table 9 display the slopes and intercepts for the dollar value-injury data of table 8 in the same manner as columns (a) and (b), except that these statistics were computed from individual responses rather than from the geometric means of those responses. For all practical purposes, the slopes of columns (a) and (c) are similar enough, as are the intercepts of columns (b) and (d), that it may be concluded that geometric mean comparisons do not inflict an interpretive injustice on the responses of individuals. Of course, the power function fits are not as good as those obtained with logged-score mean data but are nonetheless impressive when one realizes that individual response data produced them. Lodge and Tursky (1979, p. 40) reported a 5-percent decrease in explained variation with individual scores when compared to logged-score means and an additional 10 percent less explained variation with social variables as opposed to those investigated in sensory psychophysical research. It is adequate for the purposes at hand to show that the two sets of estimates really are quite similar as table 9 indicates. Therefore, one may conclude that the estimates of the power function parameters for logged means and individual responses are almost identical in

Table 8 (Additive measurement matrix)

Ratio scores for complex events

Crime type	Dollar value of loss						
	$0	$10	$50	$100	$1,000	$10,000	$100,000
Simple theft	—	1.73	2.89	3.60	6.88	10.96	—
Threats	—	6.63	—	—	10.30	—	—
Minor injury	1.47	5.13	—	—	8.00	—	—
Treated and discharged	8.52	6.71	—	—	16.63	—	—
Hospitalized	11.98	14.64	—	—	16.88	—	—
Kidnapping	21.23	—	—	—	24.5		
Breaking and entering	1.50	3.14	—	—	9.62	—	15.56
Trespassing	0.84	1.39	—	—	7.95	—	—

Table 9 (Slopes and intercepts)

Additive measurement matrix (log_{10})

Crime type	Grouped means		Individual responses	
	(a) Slope	(b) Intercept	(c) Slope	(d) Intercept
Simple theft	.268	0	.273	.001
Threats	.095	.726	.094	.736
Minor injury	.212	.332	.232	.285
Treated and discharged	.097	.872	.078	.931
Hospitalized	.044	1.01	.044	1.107
Kidnapping	.019	1.332	.019	1.341
Breaking and entering	.187	.296	.176	.369
Trespassing	.303	−.053	.304	−.046

[3]Ratio scores are computed by dividing each geometric mean by the geometric mean of a theft of $10.

[4]The out-of-order sequence of 8.52, 6.71, and 16.63 for treated and discharged is probably due to an ordering effect in the item stimuli, The regression estimate for a loss of $10 in this crime type is 9.3, producing a ratio of 1.8, more in line with the remaining injury plus dollar-value loss scores.

these data, although the fit for the former is necessarily better than that produced by the latter.

It is obvious in table 10 that the type and severity of an associated offense affect the perception of dollar-loss seriousness. The direct implication of this interaction is that the severity ratios for complex events, that is, criminal acts having more than one criminal behavioral component, developed from the simple additive sum of the ratio values for each component will be incorrect. Clearly, if the perceptions of the severities of theft depend to some degree on the existence and severity of another offense committed at the same time, then the assumption of simple additivity cannot be maintained and complex events whose severity ratios have been produced through the simple addition of the ratios of their component crimes will be misrepresented in terms of seriousness.

Therefore, the question of the precise form of the additivity rules operating when respondents perform severity judgments must remain unanswered until a complete conjoint analysis is accomplished. It has been shown that interaction does exist at least for dollar loss and the several associated crimes enumerated in the above tables.

However, the important question remains of the extent to which error results when the assumption of simple additivity is imposed on complex events where, in fact, interaction among components represents the true state of the severity perception. An assessment of the magnitude of the problem which results from the assumption of simple additivity is possible within the constraints imposed by the limitations of table 8 (empty cells, limited number of conjoint measures) by comparing the severity ratios generated through the simple addition of the component ratio scores of complex events to the ratio scores generated by the regression on the dollar value of complex events where the components were jointly evaluated by respondents in the NSCS. Tables 10 through 16 present such comparisons with their intercepts, slopes, and correlations for the offense of threats, minor injury, injury which caused the victim to be treated and discharged by a doctor or hospitalized, kidnapping, breaking and entering, and trespassing; each criminal act varied by the dollar value of an associated offense committed at the same time.

Table 10 (Complex vs simple additive ratio scores)

Offense: Threats

Dollar value	Complex	Additive
$0.5	5.3	5.7
10	6.6	6.8
100	8.2	8.3
1,000	10.3	11.3
10,000	12.8	16.7

a = .143
b = .807
r = .986

Table 11 (Complex vs. simple additive ratio scores)

Offense: Minor Injury

Dollar value	Complex	Additive
$0.5	2.2	2.3
10	3.5	3.3
100	5.7	4.9
1,000	9.3	7.8
10,000	15.1	13.2

a = −.032
b = 1.103
r = .998

If perceptions of the severity of complex events were similar to the ratio values determined by the addition of the ratio values of the respective components, then the values for complex and additive columns should be roughly the same (allowing for errors introduced by ordering effects, subsample bias in item selection and other unexplained biases caused by item construction, and so on) with an intercept of zero, a slope of one, and a correlation of unity. Of course, table 9 has already precluded such results; but how poor is the fit of the two sets of ratios for each offense type?

First, the correlations between complex and simple additive ratios are uniformly high, above .96 for all of the offense types and essentially unity for trespassing, breaking and entering, and minor injury. Despite the interaction between associated crime type and dollar value of loss the two estimates, complex and additive, covary almost perfectly as inspection of these tables reveals. However, the slopes for complex offenses having kidnapping, injury resulting in hospitalization, and, to a lesser degree, threats and trespassing depart from one indicating that the ratios do not progress at the same rate for both sets of distributions for each of these offense types.

The poorest fit in terms of ratios between complex and additive estimates with these data is found in table 14, kidnapping and theft. Dollar-value increments from $0.50 to $10,000 in addition to kidnapping result in larger severity ratios in the additive model as opposed to the complex especially for the values of $1,000 (27.6 vs. 24.5) and $10,000 (32.9 vs. 25.6). Thus, the severity of criminal events involving kidnapping may be overestimated when large amounts of money are stolen or other very serious criminal acts are committed at the same time and the severity of the event is produced by simply adding up the ratios of the component parts of the occurrence.

However, it should be pointed out that in general the ratio scores are only substantially different for dollar losses in excess of $10,000. This differential for higher serious offense types of threats, $1,000 and $10,000 the ratio values are hospitalized and, to a lesser extent, treated and discharged and breaking and entering. For threats with dollar losses of $1,000 and $10,000 the ratio values are 10.3 vs. 11.3 and 12.8 vs. 16.7 for complex and additive, respectively; for hospitalized, 17.1 vs. 18.3 and 19.8 vs. 23.8; for treated and discharged, 14.6 vs. 14.9 and 18.2 vs. 20.3; and for breaking and entering, 7.2 vs. 7.9 and 11.1 vs. 13.3. Thus, the error produced by the imposition of the simple additive model becomes relevant really for $10,000 and greater losses in complex events. The severities of complex events containing minor injury or trespassing actually are slightly underestimated by simple additivity.

From tables 10 to 16 it can be concluded that the simple addition of severity ratios of the components of complex events produces severity scores quite similar to those generated by ratios of geometric means resulting from judgments of the complex event as a whole as long as the associated dollar value of theft or loss is not extremely large.

Does the leveling effect on the perception of theft severity produced by a serious allied criminal act have any bearing on the application of severity ratios to criminal behaviors? One's immediate

Table 12 (Complex vs. simple additive ratio scores)

Offense: Treated and discharged

Dollar value	Complex	Additive
$0.5	7.4	9.4
10	9.3	10.4
100	11.6	11.9
1,000	14.6	14.9
10,000	18.2	20.3

a = −.184
b = 1.126
r = .975

Table 13 (Complex vs. simple additive ratio scores)

Offense: Hospitalized

Dollar value	Complex	Additive
$0.5	12.6	12.8
10	13.9	13.8
100	15.5	15.4
1,000	17.1	18.3
10,000	18.9	23.8

a = .424
b = .629
r = .969

Table 14 (Complex vs. simple additive ratio scores)

Offense: Kidnapping

Dollar value	Complex	Additive
$0.5	21.5	22.0
10	22.4	23.0
100	23.4	24.6
1,000	24.5	27.6
10,000	25.6	32.9

a = .783
b = .416
r = .969

response would be that if simple additivity errs in producing severity ratios which are essentially the same as those generated by conjoint evaluations then the application of the resulting scale values should be limited only to simple events. However, the dilemma is perhaps not as difficult to overcome as it might seem.

First the two distributions, complex and additive, do not deviate very much from each other until extreme values in dollar loss are encountered. But, in practice, large dollar value thefts in combination with other kinds of offenses are quite rare. In fact, initial analysis of the Philadelphia 1958 Birth Cohort Study[5] shows that 98 percent of all simple thefts result in loss of less than $1,000, 80 percent less than $100, and only 0.1 percent in excess of $10,000 (mean = $130.30, median = $24). For offenses involving injury and theft, 99 percent resulted in a loss of less than $1,000, 87 percent less than $100, and no offenses produced $10,000 or greater loss (mean = $97.50, median = $19). Even in complex events where both theft and damage resulted, 93 percent of the losses were less than $1,000, 53 percent less than $100, and only 0.4 percent of the offenses produced losses of $10,000 or more (mean = $421.80, median = $100). The *Uniform Crime Reports for the United States, 1978* (U.S. Department of Justice, Federal Bureau of Investigation, 1979, p. 174) produced means of $219 for larceny-theft, $434 for robbery, $46 for theft-murder, and $30 for theft-rape offenses. These means are probably not representative of the actual distributions (see means and medians above) because of the skewed nature of theft data. Nonetheless, these values along with those from the 1958 Philadelphia Cohort clearly imply that the great majority of offenses involving monetary loss are relatively minor in terms of the severity of theft—a few hundred dollars or less.

The impact of these dollar-loss distributions on the utility of simple additivity in severity scoring is fortunate and strong. Because complex and additive severity ratios are almost identical to one another for dollar values less than $1,000 and because so few complex events result in losses in excess of a few hundred dollars, the usefulness and, therefore, appeal of simple additivity are not really challenged, at least for theft-complex offenses. Nonetheless, it must be remembered that the matrix of conjoint comparisons is sparsely populated, that is, (a) for the most part the regressions detailed above are based on data with missing values and (b) many complex events which could be envisioned or which may actually occur during criminal activity have not been assessed in this context.

However, as a final validity check with these limited data, the intercepts of the crime types discussed above produced by severity perceptions of simple events (no associated thefts) may be compared to the intercepts of the regressions against dollar value when dollar value is set at zero. In other words, it should be determined if dollar value regressions of complex offenses produce the same intercepts when dollar loss is set at zero as do independent evaluations of those offenses without dollar loss of associated thefts. Table 17 shows that these two estimates really are quite similar to one another across crime types. In fact, the two distributions fit almost perfectly (X^2 = .6386, slope b = .97). These two independent estimates produce essentially identical intercepts even with the various data problems apparent above.

Table 15 (Complex vs. simple additive ratio scores)

Offense: Breaking and entering

Dollar value	Complex	Additive
$0.5	2.0	2.3
10	3.0	3.3
100	4.7	4.9
1,000	7.2	7.9
10,000	11.1	13.3

a = .031
b = .976
r = .997

Table 16 (Complex vs. simple additive ratio scores)

Offense: Trespassing

Dollar value	Complex	Additive
$0.5	0.9	1.6
10	1.8	2.6
100	3.6	4.2
1,000	7.2	7.2
10,000	14.4	12.6

a = −.305
b = 1.345
r = .999

Table 17 (Intercepts)

Complex vs. simple estimates

Crime type	Complex	Simple
Threats	5.32	5.25
Minor injury	2.14	1.47
Treated and discharged	7.45	8.52
Hospitalized	12.64	11.98
Breaking and entering	1.98	1.50
Trespassing	.88	.80

Concerning the assumption of simple additivity, certain conclusions may be drawn albeit cautiously at this point: (1) as the perceived severity of an offense type increases, increments in the dollar value of thefts are perceived by respondents with decreasing seriousness ratios; (2) the in-

[5]The analysis of these data is now underway at the Center for Studies in Criminology and Criminal Law at the University of Pennsylvania.

teraction between the perception of dollar loss and the severity of an associated offense committed during a complex criminal event becomes important only for large dollar losses ($10,000 or greater) and both complex and simple offense stimuli produce similar intercepts for zero dollar loss; (3) only a fraction of a percent of offenses typically encountered in criminal justice data results in thefts in excess of $10,000, thereby reducing the *applied* significance of (1) and (2) above for the use of simple additivity in severity summations of complex criminal events; and (4) regression effects discussed below and in chapter 2 may, in fact, be somewhat compensated for by the use of simple additivity (although this hypothesis should be tested with appropriate data).

Cross (1974) discussed theoretically and Cross, Tursky, and Lodge (1975) examined empirically the effects of regression bias on the slopes of magnitude estimates. Regression biases result from respondents' tendencies to underestimate large magnitudes and overestimate small ones, thus, regressing perceptions toward a mean level. Unfortunately, the determination of regression bias requires that the "true" exponents of the psychophysical relationships under study be known and that the regression parameters be determined so that the extent of response compression can be ascertained. That is, the crime severity scale would have to be calibrated against other psychophysical modalities, the parameters of which have been determined. Such an exercise was described in chapter 2. However this cross-modality matching procedure was not practicable in the home interview environment of a national survey. Therefore, the National Survey of Crime Severity could not be "calibrated" in a manner that would allow for a determination of regression bias.

However, if regression bias were occurring in the magnitude estimates of complex events and not in the components of those events, an assumption that would have to be tested, for it has not been determined that regression bias does not exist even in the single offense stimuli (in fact, it probably does given the wide ratio range of this study), then the correction to be used in the equation $\psi_i = R_i^{(1/a)}$ would be quite small.[6] In these data, the discrepancy between complex and additive scores for kidnapping yields the value of $a = .93$ producing an exponential correction for complex events of only 1.07, really not large enough to be troublesome. Indeed, this value obtains for the offenses of hospitalized and breaking and entering as well. The correction exponents of 1.1, $a = .90$ for threats and 1.04, $a = .96$ for treated and discharged are all within the same range of rather small factors.

This demonstration does not prove that regression bias is small or nonexistent; rather, it suggests that the differences between simple additive and conjoint measures of complex events are not large within the range constraints of the available responses and, if considered in terms of regression bias, are almost insignificant. Regression bias may be affecting both sets of measurements to a greater or lesser extent as yet undetermined; however, it could be assumed that the complex multioffense stimulus would suffer more from the effects of this bias than would a simple unit offense item. Indeed, the data do lie in the appropriate direction for this conclusion so that simple additivity does expand the upper limits of perceived severity at least to a small extent, thus probably correcting for some amount of regression in complex events.

Poulton (1968) has discussed at length hypotheses relating to how slopes of magnitude estimation regression may be diverted from the correct or true path of experimental design factors. Most relevant for the subject of this chapter are biases resulting from range effects, threshold effects, and position of the standard in the item range. Unfortunately, without an independent metric for crime severity, except for dollar value, tests of many of the biases enumerated by Poulton are not possible with these data; but it is plausible to assume that these effects act on the data at hand in a manner similar to that of physical continua.

Experimental evidence has shown that a limited range on a given physical continuum produces a steeper slope than does a larger range of stimulus intensities. In fact, respondents have produced functions up to about 1.6 times greater for small ranges than for large ones; thus, small ranges produce inflated exponents on power functions and too large a range produces overly small slopes.

The range of stimuli in the NSCS is quite large by conventional psychophysiological standards; however, it is not the overall range of stimuli that is relevant here, rather it is the *relative* range across offense type as dollar value of loss is varied, which has an impact on the conclusions here. It is conceivable that for offenses of limited severity, associated dollar losses will produce larger slopes than those same dollar-value stimuli would when the complex events include more or very serious associated criminal acts. The responses to the NSCS do verify this interrelationship (table 9); however, it cannot be determined from these data whether the declination of slope with greater severity levels in associated offenses is due to the expansion of stimulus range or to some other factors.

Certainly bias due to threshold effects is possible in these data and could also be responsible for slope variability across offense types in complex events. Threshold effects produce steeper slopes near the low end of perceptual capability. Therefore, the perception of stimulus intensity rises more quickly just above the perceptual threshold than it does as stimuli advance further up the range of item strength. A very minor offense such as trespassing, which lies at the very threshold of offense severity, should generate a steeper function against dollar value of loss in a complex event than would more serious offenses such as those resulting in grave bodily injury or large amounts of property damage. The data of this chapter support this hypothesis of threshold as well as range effects, although it is impossible to disentangle the two here.

Similar to the threshold effect is the relationship acting between the size of the standard or modulus and the position of a stimulus item on the intensity scale. If the stimulus magnitude of the standard is near the lower range of item intensities, then smaller stimuli will produce steeper slopes than will those items which are larger than the standard. The reverse is true for a modulus placed near the upper end of the stimulus magnitude. As a result, minor offenses which lie below the standard should generate steeper slopes with dollar loss than would the more serious components of events.

[6] See chapter 2, p. 18 and table 3.

Summary and conclusions

Each of these hypothetical situations is supported by the limited data presented in this chapter. In effect, each hypothesis argues that minor offenses will produce steeper slopes with associated thefts in dollar terms than will serious personal injuries or extensive property damage. Of course, these explanations are based on experience with physical continua and not with non- or minimally metrified attitudinal items. The lack of independent measures of offense stimuli strengths similar to those of physical continua limits the power of explanation available to these data. It is true that dollar-value increments are not perceived uniformly across the range of severity of offenses committed at the same time as theft. With an attitudinal variable such as offense severity, this reduction in the importance of dollar-value increments may result from the shadowing effect of a very serious associated criminal violation. The recognition that the dollar loss becomes less important as physical injury or other potentially or real grievous consequences increase should not be startling or even damaging to the development and use of a scale for crime severity. This relationship among the components of criminal behavior, that is, the reduction in slopes detailed above, can be explained simply as the reduction of the importance of money loss when serious crime is committed conjointly and also in terms of range, threshold, modulus position, and regression effects. The reduction in slope as the intensity of an attitudinal variable such as crime increases appears to be operating not unlike that function produced by physical continua observed under similar conditions of stimulus intensity.

Additional conjoint data should be developed both to fill in the data gaps on dollar value experienced here and to extend the range of offense types so that other additive combinations may be investigated. These stimuli should be measured cross-modally to produce additional metric information.

These data do suggest that the interaction between serious offense perceptions and the perception of additional increments of severity exists and this relationship is probably similar to that observed with physical continua. This interaction does compromise the assumption of simple additivity, but the effects on severity values in practical application are probably minimal. Additional experiments using cross-modal techniques with expanded offense stimuli conjointly presented should supply the necessary data for a full asssessment of this problem.

Offender-victim-weapon types and perceived severity

Chapter 4

Allied to the problem of additivity is the relationship between the perceived severity of an offense and factors which, although they are not to be considered directly as severity determinants, have an associated or conditional effect on the perceived severity of the criterion item. Most commonly, these characteristics involve aspects of the victim-offender relationship with its set of affective modifiers and the use or type of weapon employed in carrying out the offense. Ideally, the dimensionality of the offense stimuli items should be controlled so that concerns about the guilt, blameworthiness, or culpability of the offender do not intrude on the judgment of the basic or "pure" offense, if such is conceivable. Nonetheless, it is always possible for offenses having unspecified allied circumstances—which, had they been detailed, would have caused the respondent to produce markedly different severity ratios—that the effect of assumptions about these uncontrolled variables could be compromising the validity of the derived assessments. Stimuli can be designed in ways which dramatically shift the culpability of the offender without materially changing the basic seriousness of the act itself. The degree to which this kind of confounding intrudes on the production of severity scores shall be dealt with here in the data of tables 18, 19, 20, and 21.

Because the distributions of circumstances, attribution of guilt, personal experience, and the mixes of these variables which are attendant to the perception of the basic severity of an act itself are unknown in the population, it would be desirable, and eventually testable, to determine if the perceptions of crime severities developed from stimuli having no other ascriptive characteristics than the raw or basic offense alone would be more or less reproduced in some kind of rough generalization from a set of stimuli having some of these culpability and dangerousness modifiers attached. Only the most tentative and, perhaps, gross generalization could be drawn from such an awkward and untidy design, because no estimates of the basic parameters are available and therefore no really justifiable inferences based on mean values can be produced. Nevertheless, it is interesting at least to examine some of the data collected in the NSCS from this viewpoint. To be more specific, the determination of the effect of weapon type on severity perception holding crime type constant would require that the proportion of the respondents envisioning a weapon, by type, would be determinable for offense stimuli where no weapon type was specified. Similar knowledge would be necessary for all weapon-offense, victimization interactions, and any other variables which might conceivably bear on the severity of a criminal event in excess of its "basic" seriousness. Obviously, such determinations are beyond this study and discussion. Only limited data are available here for a simple analysis; therefore, no sturdy conclusions can be drawn safely from these data.

Table 18 (Ratio scores)

Robbery, by type of weapon, injury and loss in dollars

Weapon	Injury and loss: Minor harm $10	Minor harm $1,000	Treated and discharged $10	Treated and discharged $1,000	Hospitalized $10	Hospitalized $1,000
a Gun	9.4	9.7	15.8	16.6	18.0	21.1
b Lead pipe	7.5	9.0	7.1	13.8	13.3	15.7
c Force, no weapon stated	5.1	8.9	6.7	16.6	14.6	16.9
a, b, d ratio mean	6.2	8.8	10.5	15.1	14.9	18.2
d No force stated	3.3	7.8	10.4	14.9	13.8	18.3

Table 18 shows that, regardless of the physical injury or dollar loss of a robbery, gun usage tends to increase the severity ratios more than a lead pipe, nonspecified force, or no mention of force in the offense stimulus item. Even so, the spreads of ratios among the various injury, dollar, and weapon comparisons are not too large, except for lead pipe and force, $10, and treated and discharged.

These ratios were produced from various randomized locations across a large schedule having complex sampling and response rates; therefore, item effects, sample biases, and so on all enter into these diverse comparisons. It is remarkable that such uniformity was produced with items such as these. In fact, the ratio means of gun, lead pipe, and no force stated as estimates of the force, no weapon stated category are rather close to the observed values of that category (c): 6.2 vs. 5.1 for theft of $10, no harm; 8.8 vs. 8.9 for theft of $1,000, no harm; and 10.5 vs. 6.7, 15.1 vs. 16.6, 14.9 vs. 14.6, and 18.2 vs. 16.9 for the remaining categories of force, no weapon stated. As discussed above, these mean values are highly speculative and offered here only as a summative guide to permit some rough generalizations. It does appear, though, that weapon type has some effect on the severity ratios in table 18; but the net effect on the most commonly imagined circumstances of a robbery—that of a dollar loss resulting from some kind of force—is more or less reproduced by the average response across other weapon or nonweapon types.

Table 19 (Ratio scores)

Injury, by type of weapon

Weapon	Injury: Minor harm	Treated and discharged	Hospitalized	Death
Force, no weapon type stated	1.5	8.5	11.9	35.7
Fists	7.3	6.2	7.0	—
Lead pipe	7.9	9.0	10.4	—
Knife	11.9	17.2	18.1	35.8
Gun	17.8	19.0	24.9	43.4
Bomb (terrorist)	33.1	—	—	44.1
Pollution	6.9	—	—	20.0
Unwholesome food	—	8.2	—	17.8

Table 19 presents ratio scores for a wider range of weapon types, weapon being defined here loosely as the contents of the weapon type column of table 19, for several injury outcomes of an offense. Because of missing values, data for terrorist bombing, pollution, and the sale of unwholesome food are included for completeness rather than interpretive significance. It seems quite obvious that the gravity of the perceived injury seriousness varies strongly and directly as weapon type progresses from fists to lead pipe, knife, gun, and terrorist bomb, even though the extent of the actual injury incurred by the victim is held constant by explicit definition in the item stimulus. Injuries and death caused by pollution and purveying unwholesome food are judged less serious than the same victim consequences resulting from the use of

Table 20 (Ratio scores)

Dollar value of loss, by type of victim

Victim	Dollar value of loss			
	$10	100	1,000	10,000
None stated	1.7	3.6	9.6	11.0
House	—	3.2	9.6	—
Department store	2.8	—	7.3	—
Public recreation center	4.3	—	7.0	—
School	3.1	—	9.8	—
Museum	—	—	9.7	—
City storage lot	2.2	—	—	—
Parking meter	1.6	—	—	—
Railroad yard	1.4	—	8.0	—
Income tax evasion	—	—	—	6.1
Official takes public money	—	—	9.5	—
Doctor defrauds medical insurance	—	—	—	13.5
Employer (embezzlement)	1.9	—	6.2	—
Unlocked car	—	—	6.6	—
Pocket (pickpocket)	3.3	4.4	—	—
Bribe (offer)	—	—	—	14.5
Bribe (receive)	—	—	—	16.9
Ratio means	2.4	3.7	8.1	11.9

Table 21 (Ratio scores)

Beating and stabbing offenses: injury, by type of offender and victim

Offender, offense, victim	Injury	
	Hospitalization	Death
Stabbing, no relationship stated	18.0	35.0
Husband stabs wife	—	39.3
Wife stabs husband	—	28.0
Beating, no relationship stated	7.0	—
Husband beats wife	18.4	—
Parent beats child	23.0	48.0
Teenage boy beats father	8.0	—
Teenage boy beats mother	15.9	—
High school boy beats middle-aged woman	19.5	—
High school boy beats elderly woman	17.6	—
Three high school boys beat male classmate	11.4	—
Ten high school boys beat male classmate	11.8	—
Man beats stranger	11.8	—
No relationship or type of violence stated	11.9	35.7

more generally recognized "weapons." Most probably, supposed intent of the offender enters into the perception of offense severity in these instances. In addition, it might be concluded that the identical injury outcomes produce differentially perceived severities because the intent and potential dangerousness of the weapon as perceived by the respondent have a bearing on the severity of the event when such aspects are part of the offense stimulus description.

The response to an injury stimulus from the general perspective of force with no weapon type stated elicits a kind of average ratio score for the injury types other than minor, where lack of weapon type stated produces a very low severity ratio. It is possible that the wording of the simple minor injury stimulus tends to produce an underestimate of that offense type, at least in comparison with the remaining injury-weapon severity perceptions.

In table 20 the perceived severity of dollar-value loss is presented as a variable on type of victim. Data are unavailable for many of the cells in the table but, with the exception of a $10,000 loss to the government through income tax evasion, the spreads of severity ratios as victim type varies are not too large. The largest difference on a loss of $10 exists between that of theft from a railroad yard or parking meter (1.4 and 1.6) and a public recreation center (4.3), while the largest difference of any consequence for other dollar-value losses is that obtaining between income tax evasion of $10,000 (6.1) and the acceptance of a $10,000 bribe by a public official (16.9).

Generally, the effect of victim types, at least those types included on the variable of dollar loss in the NSCS, is minimal on the perception of the severity of loss. The ratio means for table 20 for all victim types are not very different from those produced by stimuli where the victim type was not stated: 2.4 vs. 1.7 for a $10 loss, 3.7 vs. 3.6 for a $100 loss, 8.1 vs. 9.6 for a $1,000 loss, and 11.9 vs. 11.0 for a $10,000 loss, indicating that dollar loss is primary to victim type for these offenses.

Table 21 produces severity ratios of 18.0 for stabbing resulting in hospitalization and 7.0 for a beating having the same physical consequence. A husband beating a wife, a parent beating a child, and a teenage or high school boy beating a woman all produce somewhat elevated ratio scores compared to those relationships seen perhaps as more "equal" between victim and offender. However, even with these differences, the ratio average of a hospitalization resulting from a stabbing and a hospitalization from a beating is 11.9—similar to the overall ratio average of 13.9 for all victim-offender relationships and offense types resulting in hospitalization.

Death of a child resulting from a parental beating is perceived as especially serious (48.0), while a wife stabbing her husband to death is less serious than a husband stabbing his wife to death (28.0 vs. 39.3). Overall, the ratio average is almost the same for the general case of death without additional modifiers, 37.1 ratio mean compared to 35.7 for the latter.

The victim-offender relationship does have some effect on the perceived severity

of otherwise identical offense outcomes. The more vulnerable or weaker the victim is viewed as compared to the offender, the greater the severity of the act even though the physical injury is stated in the stimulus as invariant.

Circumstances of the offense, such as weapon type or absence of weapon, relationship of the victim to the offender and potential dangerousness or intent of the offender, and probably many other variables not addressed in this survey all bear on some aspects of the perceived severity of a "basic" or nonmodified offense stimulus. This study was not designed to test this interaction effect nor to investigate the culpability or blameworthiness of the offender as these dimensions bear on offense severity. But the data in this chapter have shown that a sensitivity to these issues should be incorporated into a treatment of the dimensions of offense severity in future work. More important for the effort at hand, however, is the generalization that, for the variables presented in the offense stimuli in the NSCS, general nonspecific offense descriptions do appear to tap a general response set which can be used to develop an overall view of perceived offense severity.

Certain factors bear on the perception of offense severity, but ratio values developed from generalized stimuli which allow respondents to supply their own images and rationales for judging offense severity produce ratio estimates for those items which do not do an injustice to the dimensionality of the problem or even to ratio mean estimates based on elaborated scale items.

National Survey of Crime Severity pretesting

Chapter 5

Because the national victimization survey, known as the National Crime Survey (NCS), was under way by LEAA (later by the Bureau of Justice Statistics) and the Bureau of the Census at the time of the design of this project, it appeared quite appropriate to attach this attitude schedule to that effort, for the sample had already been defined, the interviewing staff was readily available and highly skilled, and the general mechanism for administering the survey were well worked out and operating.

At the outset, however, several methodological and procedural variables had to be investigated to ensure that a reliable and valid survey of this type could be administered in a home environment by census interviewers within reasonable cost and time parameters. To this end, several pretest exercises were undertaken at the University of Pennsylvania, in the Washington, D.C., area and, finally, on a national level before full-scale interviewing began. The results of these pretest efforts form the substance of this chapter.

Written vs. oral survey formats

The original work and the numerous replications in this area all employed a written format in which a respondent is presented a test booklet with each page containing an offense-severity stimulus. The practical advantages of this technique are that the respondent can answer at his or her own pace, tight control is maintained over the test situation, and a large number of people can be surveyed simultaneously with a resulting cost savings over personal interviews.

However, in the literature on survey methodology it is generally agreed that the personal interview is a more reliable and valid method than questionnaires for obtaining responses. For this reason, the National Crime Panel surveys of victimization have been conducted through personal interviews. For the purpose of integrating the crime severity survey with the National Crime Panel, it is important to determine the reliability of an oral method for measuring the seriousness of crime. Census-type interviews would not be possible if results obtained from an oral format differ substantially from the numerous replications of the traditional written method. Therefore, the intent of the first pretest study was to discover if any significant differences exist in the geometric means produced by the two methods of administering the crime severity items.

Figure 3

Interviewer instruction

INTERVIEWER INSTRUCTION ▶ *Interview all household members 18 years and over (proxy interview not acceptable)*

INTRODUCTION – I would like to ask your opinion about how serious **YOU** think certain crimes are.

The first situation is, "A person steals a bicycle parked on the street." This has been given a score of 10 to show its seriousness. *(PAUSE)* Use this first situation to judge all the others. For example, if you think a situation is 20 **TIMES MORE** serious than the bicycle theft, the number you tell me should be around 200 *(PAUSE)* or if you think it is **HALF AS SERIOUS**, the number you tell me should be around 5 and so on. *(PAUSE)* There is no upper limit; use **ANY** number so long as it shows how serious **YOU** think the situation is. *(PAUSE)* If **YOU** think something should not be a crime, give it a zero. *(PAUSE)*

Consider the following situation: "A person robs a victim. The victim is injured but not hospitalized." What number would you give to this situation to show how serious **YOU** think it is compared to the bicycle theft with a score of 10? *(Obtain answer)* . . . . . .

"A person under 16 years old plays hooky from school." Compared to the bicycle theft with a score of 10, how serious do **YOU** think this is? *(Obtain answer)* . . . . . .

"A person stabs a victim to death." Compared to the bicycle theft with a score of 10, how serious do **YOU** think this is? *(Obtain answer)* . . . . . .

1. A person steals a bicycle parked on the street	10
2. A person robs a victim. The victim is injured but not hospitalized	
3. A person under 16 years old plays hooky from school	
4. A person stabs a victim to death	

Let's go over these first few answers to be sure I have recorded them correctly. You feel that a robbery in which the victim is injured is (more/less/as) serious (than/as) the bicycle theft, *(PAUSE)* and that playing hooky is (more/less/as) serious (than/as) the bicycle theft; is that correct? *(PAUSE)*

INTERVIEWER INSTRUCTION: *Stop and resolve any misunderstandings about the instructions. Make any changes to the practice scores as needed.*

Score the remaining situations in the same way by comparing each one to the bicycle theft. There are no right or wrong answers. Remember, you may use any numbers, as high or low as you wish. *(PAUSE)*

Procedure

The sample of respondents taking part in the test of the written and oral surveys consisted of undergraduates in two criminology classes at the University of Pennsylvania. One class was asked to respond to the oral method, the other to the written. In the oral presentation, instructions were read to the respondents with the request that they respond on a set of 20 index cards, one card for each event described. The written survey instructions were self-explanatory, and no questions were answered by the research staff concerning the task until all survey schedules were returned. The written questionnaire consisted of two pages with a set of instructions, an illustrated example, and 20 events with a space next to each event for a seriousness score.

This procedure is similar to the one used originally in *The Measurement of Delinquency* (Sellin and Wolfgang, 1964). The exception in the written format presented is that the events were listed on a single page instead of in a test booklet. The 20 events used were randomized once for both written and oral surveys, while in the original survey each booklet contained a different randomized set of the same events. Instructions were the same as for the original booklet. The instruction sheet is presented in figure 3, and table 22 displays the offense-stimuli items and the corresponding written and oral geometric mean responses.

> The following describes a series of violations of the law; each violation is different. Your task is to show how serious *you* think each violation is, *not* what the law says or how the courts might act.
>
> You do this by printing to the right of the box a number which shows how serious each violation seems to you. The first violation has been done as an example. It shows a violation which is given a seriousness score of 10. Use this violation as a standard. Every other violation should be scored in relation to this standard violation. For example, if any violation seems twice as serious as the standard violation, print a score of 20. If any violation seems ten times as serious as the standard violation, print a score of 100. If a violation seems only a twentieth as serious as the standard, print a score of ½ or .50. You may use any whole or fractional numbers that are greater than zero, no matter how small or large they are just so long as they represent how serious the violation is compared to the standard violation.
>
> Take your time. Remember, this is not a test. The important thing is how *you* feel about each violation. Do not write your name; you will not be identified.
>
> This is the standard violation which is given a seriousness score of 10:
>
> An offender steals an unlocked car and abandons but does not damage it. [10]

As inspection of table 22 reveals, the two sets of responses are similar to one another. Simple means tests produced no significant differences between the written and oral techniques on any items. Figure 4 displays the bivariate plot of the two methods as essentially a straight line with a slope of .96, an origin of .35, and a correlation of .99—almost a perfect fit for the two distributions.

Conclusion

Based on the results obtained in this study, it can be concluded that there are no significant differences between an oral and a written method of surveying crime severity.

A further conclusion can be derived from a procedural difference in the two methods. In the written method, all the

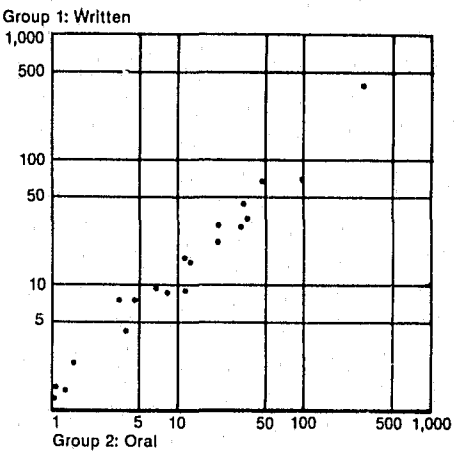
Table 22 (Items and geometric means)

Written vs. oral test

Item	Geometric means Written	Oral
1. An offender prowls in the backyard of a private residence.	4.3	3.8
2. An offender is found firing a rifle for which he has no permit.	9.8	6.8
3. An offender inflicts injury on a victim. The victim is treated by a physician and his injuries require him to be hospitalized.	68.3	43.3
4. An offender takes an automobile which is recovered undamaged.	9.9	11.1
5. An offender inflicts injury on a victim. The victim is treated by a physician but his injuries do not require him to be hospitalized.	44.5	30.8
6. An offender with a weapon threatens to harm a victim unless the victim gives him money. The offender takes the victim's money ($5) and leaves without harming the victim.	35.8	33.2
7. An offender breaks into a building and with no one else present takes property worth $5.	16.3	11.3
8. An offender disturbs the neighborhood with loud noisy behavior.	2.3	1.5
9. Without breaking into or entering a building and with no one else present, an offender takes property worth $5.	7.5	4.5
10. An offender is a customer in a house where liquor is sold illegally.	1.4	1.3
11. A juvenile runs away from home and thereby becomes an offender.	1.5	1.1
12. An offender forces a female to submit to sexual intercourse. No other physical injury is inflicted.	68.6	91.4
13. Without breaking into or entering a building and with no one else present, an offender takes property worth $50.	15.5	11.6
14. An offender without a weapon threatens to harm a victim unless the victim gives him money. The offender takes the victim's money ($5) and leaves without harming the victim.	29.9	19.9
15. An offender inflicts injury on a victim. The victim dies from the injury.	395.8	279.5
16. Without breaking into or entering a building and with no one else present, an offender takes property worth $5,000.	28.4	29.1
17. Without breaking into or entering a building and with no one else present, an offender takes property worth $1,000.	22.9	20.2
18. A juvenile plays hooky from school and thereby becomes an offender.	1.3	0.9
19. Without breaking into or entering a building and with no one else present, an offender takes property worth $20.	8.5	7.9
20. An offender shoves (or pushes) a victim. The victim does not require any medical treatment.	7.5	3.4

Figure 4

Written vs. oral test: Experiment I



$a = .3518$
$b = .9565$
$r = .9871$

events were listed on a single page, allowing the respondent to look at his or her previous answers. In the oral method respondents were asked not to look back at other index cards that contained their previous responses. The contribution of this factor was not controlled and thus remains unknown. But it is possible that the differences in the procedures could have caused a disparity between the two methods in the computed results. This was not the case. Therefore, it may be further assumed that looking back at previous answers does not cause significant differences in reported measures of seriousness.

Additional pretest studies were undertaken during 1976–77 to determine the field acceptability of the crime severity study in the household setting of a standard National Crime Panel interview. These pretests dealt with the preparation of concise, easily understood instructions for the respondent and the determination of (a) the need for a standard or modulus, (b) the degree to which the inclusion of certain item stimuli might be embarrassing or offensive to some respondents (items dealing with sex or particularly heinous crimes), (c) the optimum number of items to be administered, and (d) the appropriate scale type—magnitude estimation or categorical choice.

The resolution of these various problems involved numerous pretests in the Washington, D.C., area, followed by testing in nine different areas of the United States and a final large-scale national pretest in February 1977.

The instructions for the respondents evolved through several editions as a result of feedback from the field tests. As figure 3 indicates, the final version of the interview schedule is concise and clear about the problem and the task to be performed by the respondent. Experience revealed that lengthy explanations tended to confuse and cloud the task. Respondents performed more consistently with less assistance when the instructions were short and direct, as figure 3 illustrates. Practice items permitted recognition of response problems before the actual magnitude estimation tasks began and the use of a modulus eased the burden of responding, compared to employment of a free choice or unanchored estimation procedure. The laboratory work of Lodge and Tursky and their associates, referred to in the earlier chapters, has shown that a pretest standard, or modulus, is unnecessary for the production of valid magnitude estimates; in fact, regression bias may even be aggravated by the modulus. Nevertheless, field experience with the crime severity scale proved that most respondents felt more comfortable with a modulus to which their comparison of other criminal acts could be made.

Early forms of the offense-stimuli list included some 260 items covering a broad range of illegal behavior. About 5 percent of the respondents in the various pretests reported that they found some items personally offensive or disturbing. Due to the household character of the interview, the Bureau of the Census staff eliminated items relating to adultery to ensure that the integrity of the responses would not

be compromised by the introduction of a potentially sensitive subject in the family setting of the typical interview. The remaining items which were reported to have an offensive character were not eliminated because of the low incidence of this kind of difficulty and because of the lack of concensus among respondents about the offensive nature of the items. The broad range of offenses (minor to severe injury, drugs, sex, etc.) contained in the stimulus items required that the lower age limit for participation be set at 18 by the Bureau of the Census to eliminate any possible problems which might result from having underage children take part in the survey.

Various numbers of items per respondent were tested for subject attention span, response consistency, and interview length with the result of the choice of 20–25 items as optimum. However, the major research issue for the pretest phase of the project revolved around the issue of scale type—magnitude estimation vs. categorical choice.

Previous work described in chapter 1 proved that magnitude estimates could be performed by certain select populations, but it still remained to be shown that such responses could be reliably and validly produced by the U.S. population in a typical census interview. Early field work seemed to indicate that category responses were easier to elicit from respondents than were magnitude judgments, but the literature in psychophysical scaling is explicit in its condemnation of category as compared to magnitude methods.

> When magnitude rates are compared to category scales in direct matches against a known metric, the relationship between scale types is characteristically curvilinear, typically concave downward; magnitude scales almost invariably are found to be superior in providing quantitative information about the intensity of peoples' judgments. . . . [See Eisler (1962), Marks (1968, 1974), Shinn (1974), and Stevens and Galanter (1957).] Numerous such scale confrontation studies demonstrate that category scaling results in (1) the loss of significant portions of information, (2) ordinal level response data, (3) the misclassification of stimuli and respondents, and (4) because the number of categories and the assignment of numbers to categories are arbitrary, indeterminate regression coefficients. The long and short of it, weak measurement and consequently weak theory.
>
> Magnitude scaling, on the other hand, offers distinct advantages: (1) Given the simple instruction to match numbers (or any of 30 quantitative response measures) to impressions, the average person can make proportional judgments about the intensity of most sensory continua. (2) Because magnitude scaling places no investigation-imposed restraints upon the response measures, respondents are able to express and investigators record judgments as precise as possible: if an individual is capable of judging a stimulus as two, three, four or more times stronger than another, that ratio information can be conveyed through magnitude scaling. And (3), these magnitude scaling procedures produce log-interval (ratio-preserving) measures of impressions, thereby providing researchers with legitimate access to the powerful statistical tools required for testing quantitative hypotheses. [Lodge and Tursky, 1979, pp. 6–7]

Later in their exposition, Lodge and Tursky dealt with aspects of category scaling which bear directly on the question of scale type as applied to the NSCS.

> The reliance on category scaling compromises the full range of social science research activity from simple description of opinion distribution to the formal modeling of preferences and behavior.
>
> The description of opinion distributions is distorted because category scales are insensitive measures of opinion strength and all but oblivious to change in the range of stimulation. When the range of social opinion is greater than the category scale can measure as is typically the case, or when the range of opinion is less, there is a distortion of response: the greater the discrepancy between true and artificially imposed range, the greater the distortion. When a small number of categories is provided for evaluating a broad range of stimuli or for expressing strong opinions, most of the distortion appears in the end categories—the overall effect being to vitiate the expression of strong opinions. Because the variance found in the endmost categories is typically large, a researcher cannot be confident that a respondent choosing a polar category is expressing a moderate or intense opinion. (The answer does not lie in the arbitrary increase in the number of categories because the true range of social stimuli is not known beforehand, varies from question to question and from individual to individual over time.) This is particularly serious because most theories of behavior posit a relationship between strength of opinion and the likelihood of a congruent behavior. . . . As a result, attempts to predict behavior as a function of categorical expressions of opinion are jeopardized.
>
> Another serious consequence of weak measurement is weak theory. Given ordinal level measurement one is unable to test quantitative hypotheses: one can state only that Y "depends on" X to some extent. The magnitude of change of either variable or in the relationship between variables cannot be specified. As a consequence, a researcher is unable to measure precisely the impact of some intervening variable on a relationship between variables. What is lost is a sensitive, quantitatively meaningful measure of context effects—the extent to which some experimental measure of context effects—the extent to which some experimental manipulation or environmental change alters a relationship.
>
> Not to be denied access to the substantively important questions of the discipline, many researchers proceed to assign numbers to categories on the assumption of equal intervals between categories and go on to employ linear correlation and regression analyses in the testing of hypotheses. Empirical results such as ours, or, more impressively, the results of scale-confrontation studies in sensory psychophysical experiments, demonstrate that conventional category scales do not produce regression coefficients which can be meaningfully interpreted as quantitative measures of the relationship between variables.
>
> Regression coefficients are arbitrary when produced by variables measured categorically because of the arbitrariness of the categorical measure—first, in the number of categories imposed by the format of the scale, and secondly, in the numbers which are assigned to the categories. Essentially, different sets of arbitrarily assigned, intervally spaced values produce different regression coefficients.
>
> More specifically, where the stimulus range is greater than the response range, the slope will be lower than it should be, and where the stimulus range is less than the response range, the slope will be steeper than it should be—solely as a result of the arbitrary restraints imposed by the format of scale. [pp. 44-45]

Early studies with 1- to 11-category scales demonstrated that intense item stimuli (at both ends of the scale) produced truncation effects—a "bunching" of responses at the ends of the scale. In fact, similar findings have been reported by Shelly and Sparks in their study of prison inmates' responses to a 15-point crime seriousness category scale. "The medians in [table 1,

Shelly and Sparks] also suggest a truncation effect at the high end of the scale; incest, rape, homicide and arson all received median scores around 14" (1980, p. 18). Gottfredson, Young, and Laufer (1980, p. 35) also reported similar endpoint effects with serious crimes on an 11-point category scale in their discussion of additivity and interaction of offense-seriousness items.

With these concerns in mind, we at the University of Pennsylvania and the Bureau of the Census staff decided to undertake a full-scale evaluation of category and magnitude response in the final national pretest of the crime severity items in February 1977. However, to minimize the potential for truncation effects while still providing a numerical frame of reference both for the interviewers' ease in describing the task and for the respondents' comfort in performing the required evaluations, the category scale was expanded to 1,000 points. It was expected that such an enlarged category scale would produce judgments quite similar to those generated by an open-ended magnitude estimation scale.

Method

The Bureau of the Census interviewers went into the field with two versions of the crime severity scale: Version 1, the straight magnitude estimation scale, asked the respondents to judge how many times more or less serious than a theft of a bicycle, which is given a score of 10, is each of a set of descriptions of criminal behaviors. That is, if a particular offense stimulus is thought to be four times more serious than the theft of a bicycle, then the respondent should give a number around 40, and so on. Version 2 requested that participants perform the same task on a 1,000-point category scale.

Because it was not yet determined whether the magnitude estimation scale would work in the field, the crucial task for this pretest was the comparison of the two scale types. Therefore, even though the limited category scale suffered from severe endpoint effects and limited variations, it was decided, in what was called version 2, to expend considerable effort to ask respondents to perform essentially the same task as in version 1, but within a 1-to-1,000 range, as discussed above.

Some 225 scale items were randomly ordered across 12 stimulus sets for versions 1 and 2. Twelve core items were repeated in three sets within each of the 12 sets. These core items constituted the response points for the scale and also allowed the various item sets to be linked together. Thus there were two scale types, magnitude estimation and a 1,000-point category, each with 12 offense stimulus versions administered randomly to some 2,450 respondents in a panel of the National Crime Survey.

Findings

It will be recalled from the work cited above that the appropriate measure of central tendency for ratio judgments is the geometric mean defined as

$$\sqrt[N]{\prod_{i=1}^{N} X_i}$$

which, in practice, is calculated simply by taking the antilog of the arithmetic means of the logarithms of the responses or the antilog of

$$\frac{\sum_{i=1}^{N} \log X_i}{N}$$

Table 23 displays the geometric means of the magnitude and 1,000-point category scales for the 12 core items called the "Primary Index Scale" by Sellin and Wolfgang. These items generate the seriousness scores for the components of any criminal event which has elements of injury, theft, or damage. The remaining offense descriptions which form the "survey" part of this study will not be discussed here because they do not attend to the questions of the scalability of the items (the validity of the findings is primarily a function of the scale which is generated by the data). In other words, one may have confidence in the findings if, out of the some 200 items, an internally coherent and recognizable scale function for the 12 items that have been randomly distributed throughout the stimuli may be produced.

Because this is a pretest for a study which eventually involved 30,000 households

Table 23 (Geometric means and ratios)

Core offenses, by magnitude and 1,000-point category scales

Offense	Geometric mean		Ratio	
	Magnitude	1,000-point	Magnitude	1,000-point
Theft: $1*	23.5	38.2	1.0	1.0
$10	41.4	68.8	1.8	1.8
$50	61.9	101.2	2.6	2.6
$100	69.8	122.4	3.0	3.7
$1,000	130.9	242.4	5.6	6.3
$10,000	220.8	384.4	9.4	10.1
Injury:				
Death	731.8	823.2	31.1	22.5
Hospitalization	229.7	379.0	9.8	9.9
Treated and discharged	162.5	265.4	6.9	6.9
Minor	42.6	72.4	1.8	1.9
Robbery $10 with:				
Physical or verbal threat	128.3	209.0	5.4	5.5
Weapon	156.9	288.1	6.7	7.5
Burglary and theft of $10	54.2	102.4	2.3	2.7

*Theft of $1 derived from the power function of money.

and some 50,000 respondents, the most crucial findings are those relating to the form of the scale generated and the relative field success of the two versions, the magnitude and the 1,000-point category scales.

In the more traditional psychophysical experiment, the shape of the function between the stimulus intensity and the perceived increments is relatively simple to determine because the strength of the stimulus (sound level, light intensity, electric shock strength, etc.) is readily measurable. In this study and in other investigations involving social continua, the strength of the stimulus is an unknown quantity; therefore, the shape of the relationships between these social continua and their perceived intensities are difficult and often impossible to ascertain.

In the NSCS, the only metrically defined offense variable is that of the dollar value of theft. Therefore, many different dollar-value thefts and dollar-value thefts combined with various injuries were offered to respondents so that a satisfactory determination of the shape of the function between dollar value and perceived severity might be accomplished.

Two sets of numbers which plot as a straight line on log-log paper may be said to be related to one another as a power

Figure 5

Power function of money: Magnitude scale

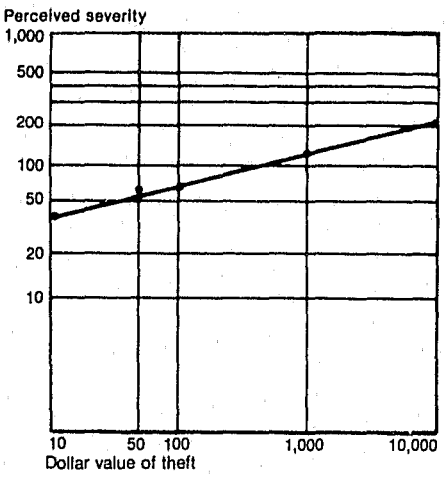


Figure 6

Power function of money: Category scale

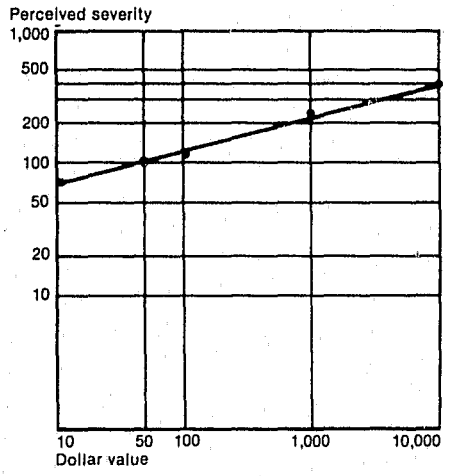


Table 24

Power function of money

Scale #1 (magnitude)

log Y = 1.3707 + .244 log X

	exp.	obs.	
$10 =	41.2	41.4	
50 =	61.0	61.9	
100 =	72.2	69.8	r = .9993
1,000 =	126.7	130.9	
10,000 =	222.2	220.8	

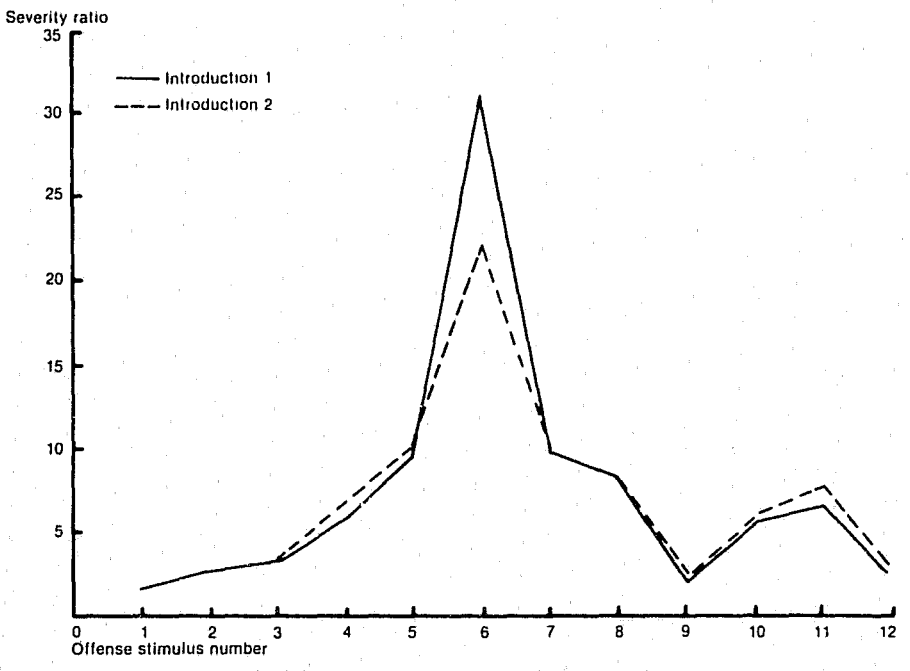
Scale #2 (category)

log Y = 1.5819 + .2556 log X

	exp.	obs.	
$10 =	68.8	68.8	
50 =	103.8	101.2	
100 =	123.9	122.4	r = .9975
1,000 =	223.2	242.4	
10,000 =	402.1	384.4	

Figure 7

Magnitude of offense stimulus number



function. (A power function in log transform is a simple linear relationship.)

Figures 5 and 6 indicate that for both the magnitude estimation and the 1,000-point category scales the perceived severity is a power function of the dollar amount of theft. The intercept point is about 40 for the magnitude vs. about 70 for the 1,000-point. The elevated intercept value for the 1,000-point scale is a characteristic of a category as compared to an infinite magnitude estimation scale.

Table 24 shows that the log transform correlation between the dollar value of theft and the perceived severity is .9993 for the magnitude estimation and .9975 for the 1,000-point scale, and the expected values from the regression equation are almost identical to the observed perceived values for magnitude estimation; while the stimulus intensity covers a range of 1 to 1,000, the perceived intensity range is 1 to 5. The fit for the 1,000-point scale, while extremely good, is not quite as tight as in version 1.

It seems safe to assert here that the respondents understood the task and were able to make magnitude judgments about the severity of crime. Although this finding represents the primary concern of the pretest, it still must be determined which version produces the more valid and reliable results.

Looking again at table 23, the *ratios* among offenses, computed by dividing the perceived severity of the theft of $1 into each of the geometric means, are identical for the thefts of $10 (1.8), $50 (2.6), and the injury of "treated and discharged" (6.9). However, with the exception of death, the ratios for the remaining offense types are all larger in the 100-point category scale.

Figure 7 shows how the upper-end truncation causes a "crunching" of the severity ratios, especially for murder as compared to the magnitude estimation

scale. Thus, injury resulting in death is considered 31.1 times more serious than the theft of $1 in the magnitude scheme, but only 22.5 times more serious in the category scale. Typically, previous research has shown the relationship between a category and a magnitude scale to be strongly concave downward when plotted. This shape is quite apparent with limited category scales, such as the 11-point scale used by Sellin and Wolfgang (1964), Normandeau (1970), and Figlio (1975).

Figure 8 exhibits the same concave effect, but it is muted considerably by the response set size of the 1,000-point scale. In fact, the two scales are highly related within the linear portion of the curve ($r = .98$, $b = 1.09$). As indicated earlier, the slopes for the power functions of money are .244 and .256 for r· ·nitude and category, respectively.

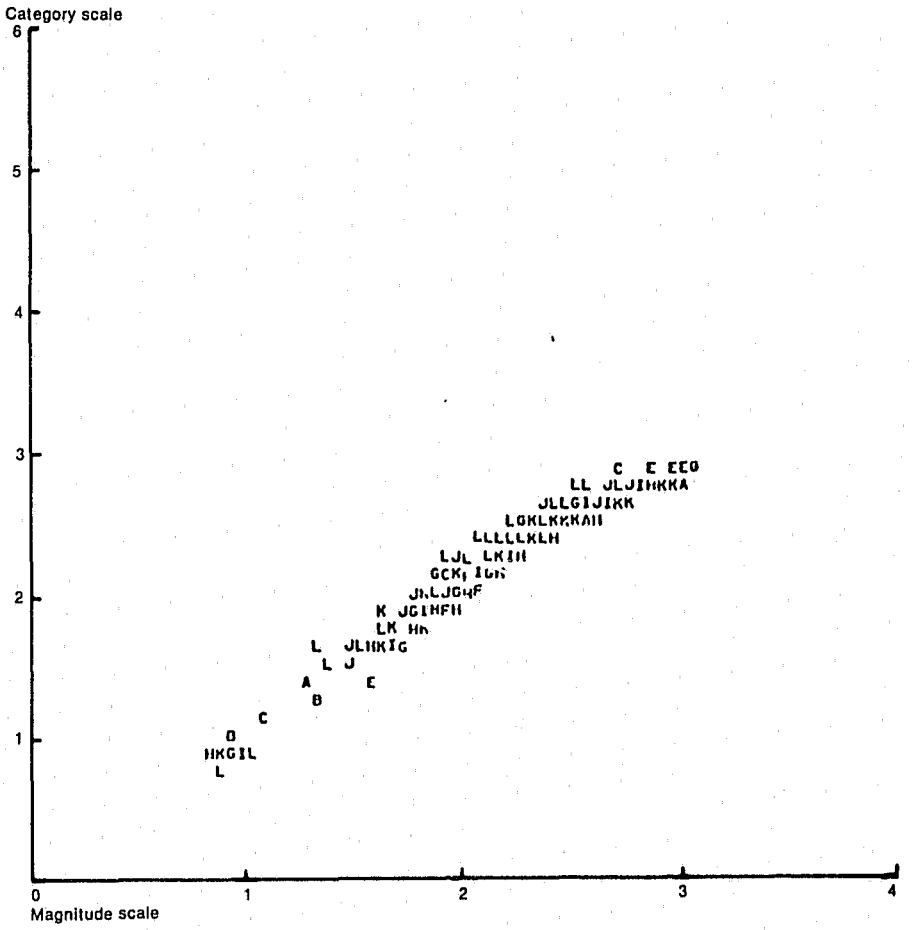
The major fault of the category scale is that it constrains the upper-end responses, thus artificially compressing the ratios of extremely serious offense stimuli. Because of this constraining effect and because the respondents were able to make magnitude judgments successfully, it was decided to utilize the magnitude estimation scale in the national survey.

The 12 core items which constitute the scales discussed above were repeated three times across the 12 versions of each scale type, yielding three independent subsamples of these items within both the magnitude and the 1,000-point category scales. Because these three subscales were randomly distributed throughout the scale versions and across raters, one may look at the scale intercorrelations as a kind of reliability check.

The intercorrelations of $r_{12} = .96$, $r_{13} = .94$, and $r_{23} = .96$ for the magnitude scale indicate a high degree of agreement among the subsets of raters on these scale items. The 1,000-point category scale subsample responses, while somewhat less highly correlated ($r_{12} = .88$, $r_{13} = .94$, $r_{23} = .91$), are still quite respectable. Thus it may be concluded that the scales are being responded to in similar ways among subsamples of the pretest group.

Figure 8

Geometric means: All stimuli



Letters indicate number of cases falling on coordinate; A = 1, B = 2, C = 3, and so on.

Summary and conclusions of scale type pretest

The main purpose of the national pretest of the crime severity scale was to determine if census interviewers operating in the average household milieu could elicit magnitude estimations of the relative severities of offense stimuli. It was found that the scale generated by this study could be fit by a power function and that the fit was marginally better for magnitude estimation as compared to a 1,000-point category scale. Thus it was concluded that the scale is workable in this setting and that reasonable results are being generated.

In addition, it was shown that even the 1,000-point category scale exhibited the truncation effects noted elsewhere in the literature when compared to the open-ended magnitude estimation scale. Therefore, it is suggested that unconstrained response schema such as magnitude estimation produce scales of higher validity than do the relatively limited category schema, even the 1,000-point scale.

Finally, it was shown that subsets of respondents produced highly intercorrelated responses to similar scale items, suggesting that the crime severity scale exhibits substantial reliability.

Overall pretest conclusions

Late in 1976 the Bureau of the Census, by agreement with the Law Enforcement Assistance Administration (LEAA) (now BJS), began working with the Center for Studies in Criminology and Criminal Law at the University of Pennsylvania to develop a survey design and methodology for assessing the relative perceived seriousness of various kinds of criminal acts as judged by a sample of the U.S. population. The primary objective of the project was to use data collected in a national sample survey to create a national crime seriousness weighting system to be used by criminal justice policymakers and researchers.

The Center had spent the previous year, working under an LEAA grant, doing basic substantive work that had to be completed before specific planning could even begin. This work included determining the best scaling technique to be used, developing the range of scale items describing the criminal acts to be included, and investigating certain methodological alternatives such as oral vs. written administration; the use of modulus, or standard reference point item, for indicating relative seriousness; the effect of perceived circumstances; and offender intent on scoring events. Very briefly stated, the conclusions from that work were (1) that the best technique to use to obtain responses on a continuum of perceived crime severity is the unlimited magnitude or ratio estimation scale, as opposed to a category scale with set range limits; (2) that it does not matter much whether the administration is oral or written, with or without a modulus; (3) that the offense stimuli (the crime event descriptions) should be as brief and simple as possible to avoid the effects of circumstantial elements. In addition, more than 250 scale items were compiled, including such diverse offense categories as murder, larceny, trespassing, gambling, arson, pollution, bribery, and drug offenses.

A summary of the major findings shows that (1) important aspects of the instructions were overlooked by respondents if they were too long; (2) a practice exercise aided the respondents in comprehending the task, but not with unrelated subjects such as different line lengths or other seemingly unrelated response modalities; (3) using a prescored modulus helped respondents "get into" the task, and the modulus choice (a bicycle theft scored at 10) appeared to be satisfactory and easy enough to work with; (4) the magnitude estimation approach tested seemed to be slightly more difficult to administer than the scale of 0–1000 approach, but did not suffer from the tendency to cluster scores at the upper range limit used in the scale estimation approach; (5) a maximum of 20 to 25 items per respondent appeared optimum; and (6) of items tested, only one (adultery) was eliminated because of sensitivity on the part of the respondents, but enough concern about potential sensitivity overall remained to restrict interviewing to adults age 18 or older.

NSCS study design and administration[1]

Chapter 6

Survey design

Supplement to the National Crime Survey

The National Survey of Crime Severity (NSCS) was administered as a supplement to the National Crime Survey (NCS) which is an ongoing, national sample survey of household and individual victimization by the major crimes of assault, burglary, larceny, robbery, and auto theft. The NCS utilizes a rotating sample design, with about 60,000 housing units interviewed over a 6-month period, or 10,000 units per month.

Sample design[2]

Source of data

The NSCS estimates are based on data collected in July through December 1977 as a supplement to the National Crime Survey (NCS). Questionnaires regarding the perceived seriousness of various kinds of criminal acts were administered to each member age 18 and older in half the NCS-interviewed households. The NSCS sample was spread over 376 sample areas with coverage in each of the 50 states and the District of Columbia.

Selection of sample

The NSCS sample was a 50 percent subsample of the NCS full sample, reflecting all aspects of the NCS sample design. The present NCS sample, initially selected from the 1970 census files, has been updated continuously to reflect new construction where possible. In selecting the NCS sample, first-stage or primary sampling units (PSUs) consisting of counties or groups of counties were formed. These PSUs accounted for every county in the United States. Approximately 1,930 of these units were formed and grouped into 376 strata. Among these strata, 156 consisted of only one PSU, which was chosen with certainty. These strata generally contained the larger metropolitan areas and were called self-representing (SR) since the sample housing units from the sample area represented just that PSU. The remaining 220 strata were formed by aggregating PSUs that shared certain characteristics in common, such as geographic region, population density, population growth rate, proportion of persons other than whites, etc. From each of these strata, one PSU was selected for the sample, with probability proportional to the 1970 PSU population; PSUs so chosen are referred to as being non-self-representing (NSR) since the sample housing units from the sample PSU in the stratum represented the other PSUs in the stratum as well.

The second stage of sampling was designed to ensure a self-weighting probability sample of dwelling units and group quarters within each of the selected PSUs. This involved a systematic selection of enumeration districts (geographic areas used for the 1970 Census), with a probability of selection proportional to their 1970 population size, followed by the selection of clusters of approximately four housing units within each enumeration district, the households within a cluster having the same probability of selection. To account for units built within each of the sample PSUs after the 1970 Census, a sample was drawn, by an independent clerical operation, of permits issued for the construction of residential housing units. Jurisdictions that do not issue building permits were sampled by area sampling methods. These supplementary procedures enabled persons occupying housing built after 1970 to be properly represented in the survey.

A rotation scheme was also used in the implementation of the NCS. The sample households were divided into six groups or rotations. At the beginning of specified 6-month intervals, a new rotation (incoming), was introduced to the sample, while a rotation which had been in the sample for seven 6-month intervals was discontinued. Data from the incoming rotation were not used for regular estimation purposes. The complete sample for the NSCS was spread out over one of the 6-month intervals (July–December 1977), with one-sixth of the sample (one-sixth of each rotation) interviewed each month.

There were 32,034 housing units and other living quarters designated for the sample. For households where no interview could be obtained for NCS, no effort was made to obtain any NSCS interviews. Therefore, of the 32,034 units eligible for interviewing, NSCS interviews were attempted in 30,589 (about 95 percent of all eligible housing units) and were not attempted in 1,445. Of the 59,431 people designated for the survey, interviews were obtained from 51,623. Responses were not obtained from 7,808 people because of individual noninterviews on NCS, refusals, language difficulty, misunderstanding of instructions, or other reasons. Thus, the noninterview rate for individual persons was about 13.1 percent of the total number designated for the survey.

Interview procedures

The NSCS supplement was administered to respondents immediately after completion of the NCS victimization interview, so as to minimize the possibility of the supplement interview biasing the victimization data in some way. Interviews were conducted by self-response only—no proxy interviews were allowed. However, Spanish versions of the questionnaires were available to use in order to reduce nonresponse because of language difficulties. Following the basic NCS interviewing procedures, most severity supplement interviews (about 80 percent) were conducted in person, though telephone interviews were permitted for callbacks to interview persons not at home at the time of the personal interview in a unit. While it was not possible to insist on private interviews with respondents, interviewers were encouraged to try to obain interviews without others being present in an effort to try to minimize within-household bias. In 53 percent of the interviews, no other persons besides the respondent and interviewer were present during the interview.

In a further effort to reduce biasing influences within a household, different questionnaires were assigned to each household member. This was done by having interviewers assign questionnaire versions (from a set of 12) in order to eligible household members immediately after updating the household roster. To ensure the assignment of versions in order, they were bound in tablet form from version number 1 in order to number 12. This procedure resulted in nearly equal numbers of interviews for

[1]Substantial portions of this chapter were prepared by Linda Murphy of the U.S. Bureau of the Census and presented by her at the 1978 meetings of the American Society of Criminology.

[2]Source: U.S. Bureau of the Census, "Sampling Statement (NSCS)" (Washington: U.S. Government Printing Office, 1978).

each questionnaire version. The dispersion over the entire survey period ranged from 9.06 percent for version 1 to 7.56 for version 12.

For each respondent, the interviewer first read the verbatim instructions for scoring seriousness printed on the questionnaire, obtained scores for the practice items, made sure the respondent understood how to perform the task, and then read each offense description and asked the respondent to score its relative seriousness in comparison to the prescored modulus offense. Respondents were instructed to assign a score of zero to something they did not consider a crime.

Questionnaire design

As mentioned earlier, originally there were over 250 offense items to be included in the study. This number was far too large to ask each respondent to score; so to keep respondent burden at a reasonable level, most of the items were randomly distributed among 12 different versions of the questionnaire. A subset of 12 core items, however, essential to later severity scale construction, was included more frequently than the rest in order to obtain larger numbers of cases. These 12 core items were divided into four sets of three items each, and each set of three was included on a quarter (3) of the questionnaire versions. Most of the other items on each version were different.

To keep the total number of offense items to be scored on each questionnaire version close to the maximum of 20–25 items indicated in the pretests, it was necessary to pare the list from about 250 to 204 items. In addition to the final 21 items, each version also contained a prescored modulus item and three practice items, as well as instructions for respondents. The order of all items on each form including the core items generally was randomized (except modulus and practice items). In a few cases, the random order had to be adjusted to eliminate chance clusterings of certain types of offenses. (Copies of the questionnaire versions appear in Appendix A.)

The variables covered by the offense descriptions included type of crime, amount of loss or damage, extent of injury, presence and type of weapon, type of victim (private/commercial/public), use of force or intimidation, and type of offender (private/juvenile or adult and commercial/public). Because the NSCS was conducted in conjunction with NCS, variables collected in the victimization experience also could be related to the severity assessments of respondents.

Field operations

NCS operation

The data collection operation was managed through the Bureau's 12 permanent regional offices and utilized the regular NCS interviewing staff of about 500, as well as the office clerical and supervisory staff. Interviews were conducted mostly during the regular NCS interviewing period during the first 2 weeks of each month, beginning in July and continuing for 6 months through December 1977.

NSCS training

Special training for the NSCS supplement was given to interviewers in June by means of a 3-hour self-study, completed at home, and a half-hour group training session in a classroom setting. In subsequent months during the survey, special features of the study or problems encountered were addressed in special memoranda to interviewers and office staff.

Quality control procedures

Quality control procedures applied to the field operation included observation, editing, and reinterview of the interviewers' work.

1. Observation. During the 6 months the survey was conducted, special emphasis was given to the NSCS supplement during the observation, with feedback to the interviewers. About half the interviewers were observed on the job by supervisory or senior interviewing staff.

2. Office edit. All NSCS supplement questionnaires were edited in the office during the entire survey period to ensure that the supplement was asked of all eligible respondents and that all required information was entered on the form correctly.

— Any interviewers the edit identified as making habitual errors were notified of the correct procedures.

— If a supplement questionnaire was missing for an eligible person, the interviewer or office was required to attempt to obtain the interview.

3. Reinterview. Throughout the survey period, a small percentage (2 percent) of interviewed persons were contacted again by supervisory staff shortly after the original interview and a reinterview was conducted. Though the primary purpose of the NSCS reinterview program was to prove a measure of reliability of overall results, any interviewer problems detected during reinterview were brought to their attention.

Field problems

In general, the field operation proceeded with little difficulty. Both interviewers and respondents seemed to understand and perform their jobs satisfactorily. There was one problem, however, worthy of mention—the nonresponse rate was higher than anticipated.

Over the entire 6-month survey period, the total noninterview rate was 13 percent of all eligible persons (those 18+ in interviewed NCS households). However, in the first 2 months (July and August), the nonresponse rate was so high (17.1% and 15.8%, respectively) that noninterview cases had to be sent back out to the field for additional followup work to bring the nonresponse rate down to a more acceptable level (13.1% and 12.9%, respectively). After that, noninterviews were monitored more closely than usual during the field operation, and offices were not permitted to close out the monthly case load until their nonresponse level was determined to be acceptable.

The final NSCS noninterviews were distributed by reason as follows:

Reason	*Number*	*Percent*
Individual noninterview on NCS	1,730	2.9
Proxy interview	1,298	2.2
Refused	1,913	3.2
Language difficulty	568	1.0
Could not understand	1,384	2.3
Other	915	1.5
Total	7,808	13.1
(Total cases 59,431)		

Data processing

Clerical Processing

Upon completion of data collection and the regional office review each month, the NCS and supplement questionnaires were transmitted to the Bureau's central processing center in Indiana for various clerical checks and data keying.

1. Preliminary processing. First, the forms were reviewed for supplement eligibility. NSCS questionnaires completed by mistake were deleted; if any were missing for persons eligible for the supplement, noninterview records were filed. During this stage of processing, all identification items on the NSCS forms were verified to ensure that they matched those on the NCS forms. At this point, NSCS forms were separated from NCS forms; the remaining data processing was done separately from the NCS.

2. Clerical editing and coding. Next the questionnaires were clerically edited for completeness, and certain entries—such as "Don't know" or "Not ascertained"—or numbers larger than 6 digits were assigned specific numeric codes for ease of processing. The editing and coding were verified 100 percent, and any errors or omissions were corrected.

3. Data keying. The NSCS data were then keyed onto magnetic tape from the documents in preparation for computer processing. The keying machines were programmed to reject certain errors, such as identification number problems, for clerical correction. All data keying was verified 100 percent. Errors and omissions were corrected.

Computer processing

1. Computer edit. Compared to most surveys, relatively little computer editing was done to the NSCS supplement data. Identification items were edited for blanks, duplicates, nonnumerics, and invalid codes. But only three noteworthy edits were performed on the offense items scored by respondents: (a) any blanks were assigned a special numeric code identifying them as blanks; (b) if the scores for all offense items were identical, the case was made a noninterview (occurred 49 times total); and (c) zero scores were changed to "1" for mathematical calculation purposes.

2. Match to the NCS and weighting. Following the computer edit, the NSCS supplement records were matched to the NCS victimization records for identical persons, and one merged file containing all household and individual data, victimization data, and crime severity data was created for each quarter of the survey. All mismatches were clerically resolved and noninterviews created for missing cases. Weights were then assigned to the NSCS data to permit estimates to be made for the total population age 18 and older based on the sample cases as follows:

——*Weighting procedure for national level estimates.* The national level estimates produced from the sample data were obtained by assigning weights to all of the sample persons. The person weights were then multiplied by an items adjustment factor as described below.

A person weight consisted of the product of the following factors:

(a) The reciprocal of the initial probability of selection (this factor was the one used for NCS, 1104.267, applied to all sample units.

(b) A special weight of 2 to inflate the estimate to the national level because the supplement was assigned to one-half the sample households used for the regular NCS interviews.

(c) A duplication control factor to reflect any subsampling done after the initial selection.

(d) An adjustment to reduce the bias resulting from noninterviewed households for the NSCS that were eligible to be interviewed. This adjustment was computed separately within cells that were defined for groups of PSUs having similar demographic characteristics. Cells were defined separately for six groups—combinations of two race categories and three residence categories. Separate adjustment factors were calculated for these noninterview cells by the housing unit population in SMSAs, non-SMSAs, and the population not in housing units.

(e) An adjustment to reflect the noninterviewed persons within household on the NSCS where at least one person was interviewed on the NCS (called type-Z noninterviews). This adjustment was computed separately within cells defined within each region. Cells for this adjustment were defined separately for 24 groups—combinations of two race, four age, and three household position categories. A person who was classified as a type-Z noninterview for the NCS was classified as a type-Z noninterview for the severity supplement. Those people represented by proxy responses in the NCS interview were classifed as type-Z noninterviews for the severity supplement, unless they completed an NSCS questionnaire in followup interviews, in which case their responses were kept. In addition, if the person was an interview for the NCS but a noninterview for the NSCS, then this person was also considered a type-Z noninterview for the NSCS.

(f) A first-stage ratio estimate factor to be applied to data from the NSR PSUs only. Its purpose was to reduce the variance arising from the sampling of PSUs in noncertainty strata. The numerator of this factor was the 1970 Census population count, in collapsed race-residence cells in SMSA and non-SMSA groups for four geographical regions. This census count was divided by an estimate of this population, based on the 1970 census population for sample PSUs in the same group.

(g) A second-stage ratio estimate factor. Its purpose was to reduce variance and bias arising from undercoverage occurring within a number of age-sex-race groups. This factor adjusted sample estimates of total persons age 18 and older to independently derived census figures reflecting population changes since 1970 for each age-sex-race category.

The above weight was multiplied by an adjustment factor, applied to adjust for differences in item and various frequency distributions due to the following two sources: (1) some items appeared more frequently than others, and (2) all 12 versions were not administered an equal number of times. The item adjustment factor consisted of the product of an item frequency factor and a version adjustment factor to reflect these two sources, respectively. The differences in the distributions described above resulted in varied numbers of people answering the individual items. The use of the item adjustment factor allowed for the analysis of questionnaire item scores by adjusting the person weight to reflect the number of respondents for a given question.

——*Weighting procedure for subnational level estimates.* The weighting procedure used for the national estimates was also employed to produce the estimates for the census regions, subdivisions, and Federal (OMB) regions. A modified weighting procedure, as described below, was used for obtaining the State, SMSA, and city level estimates.

A person weight consisted of the product of the components described below:

(a) An NSCS modified adjusted person weight defined as the product of the factors described in (a)-(g) above, except that the national first-stage ratio estimate factor (f) was replaced by a single State first-stage ratio estimate factor. This factor was used to adjust for the more restricted sample size in the State or group of States. This factor was applied only to data coming from NSR PSUs. No adjustment was made to SMSA or city data since they are SR PSUs. It should also be noted that biases resulted when using the regional household noninterview factor (d) to produce subregional estimates; it was believed that this bias was small.

(b) After the application of the national second-stage factor (described in (g) above), a State second-stage ratio estimate factor, computed separately for each city, SMSA, and the balance located in a given State. It was applied to the civilian noninstitutional sample in the given area of the appropriate State. This factor adjusted weighted sample estimates of the civilian noninstitutional population age 18 and older to independently derived census figures for the same population as of October 1, 1977, for the SMSAs, cities, and balance of the given State.

Tabulations. The main set of tabulations was produced for the Center for Studies in Criminology and Criminal Law at the University of Pennsylvania. These tables gave both weighted and unweighted mean scores and antilogs for each offense item included in the survey by geographic region. For offense items appearing on multiple questionnaires, tables were produced by race, age, sex, occupation, education, family income, and victimization experience variables, as well as for 45 States or State groups, 41 SMSAs, and six cities. These statistics were produced according to the following estimation procedures.

Estimation procedure. The estimation procedure was performed on a quarterly basis, July-September and October-December 1977. Sample data from these two quarters were cumulated to produce representative seriousness scores and the base 10 logarithms or logs of these scores. A weighted mean or average of the logs of scores (Y) was the estimate used for a population mean log score. This measurement corresponded to a geometric mean (G) for a set of original scores. The relationship between these two quantities is described below.

The geometric mean for a set of N scores is ordinarily defined as the n^{th} root of the product of these scores. The individual scores were given different weights during the estimation procedure. The weights reflected the number of persons represented by a given score at the national and subnational levels. To take into account the different weights that were used, the ordinary definition for G was modified. Letting W_i denote the weight that was applied to a given X_i for an item, the estimate based on log scores was

$$Y = \frac{\sum_{i=1}^{N} W_i \log_{10} X_i}{\sum_{i=1}^{N} W_i}$$

and the corresponding geometric mean estimate was $G = 10^Y$. The weights applied to the sample data inflate it to the level of the whole U.S. population, age 18 and older. As in the case of the regular NCS tabulations, the final weights described above were based on 6-months' cumulative data and were calculated on a monthly basis.

NSCS general findings

Introduction

From previous chapters, it will be recalled that this research has two purposes: (a) to survey the seriousness of a wide range of criminal behaviors as perceived by a national sample of the U.S. population, and (b) to determine the form of the relationship between offense types and their perceived severities. This study builds on the work of S.S. Stevens (1966a) and his students in the field of psychophysical scaling and on the basic work of Sellin and Wolfgang (1964) in scaling the seriousness of crimes in *The Measurement of Delinquency*.

Stevens and his successors have shown that, for a variety of physical stimuli such as sound level, time duration, pleasantness of odors, occupational preferences, attitudes toward political candidates, and others, equal stimulus ratios generate equal perceptual ratios; that is, the perceived stimulus is a power function ($Y = aX^b$) of the physical stimulus. Sellin and Wolfgang suggested that the perceived severities of various crimes could also be fitted with a power function, at least when the crimes are defined in terms of dollars stolen. Numerous replications of the Sellin-Wolfgang crime seriousness scale have been undertaken in the United States, Canada, England, and other countries and with other selected special interest samples of the U.S. population.[1] Almost without exception, power functions similar to that discovered by Sellin and Wolfgang have been produced by these studies.

However, the replications undertaken in the United States have always used unique nongeneralizable samples such as college students, municipal judges, police officers, prison inmates, prosecuting attorneys, and so on. In addition, the scale items have always been administered in a highly controlled procedure by the project investigators in classrooms or halls designated for this purpose, with highly motivated respondents as subjects.

Widespread interest in attaching seriousness scores to crimes has been expressed in the United States by academic researchers and practitioners in government agencies. As a result, the Center for Studies in Criminology and Criminal Law at the University of Pennsylvania decided in 1975 to broaden the applicability of the scale by attempting to develop a scale of crime severity based on a representative national sample which would include a wide range of socially harmful behaviors—from very insignificant crimes, such as creating a disturbance on a street, to property, political, and corporate violations and serious crimes against the person. After pretesting numerous versions of stimuli, the Center developed, with the Bureau of the Census, 204 offense descriptions to cover adequately this range of criminal behavior; in July 1977 a 6-month survey was begun which ultimately had more than 50,000 respondents rate the relative severities of the 204 descriptions. These items were randomly ordered across 12 interview schedules. Twelve "core items" constituting the "primary index scale" of index offenses were repeated in three sets within each of the 12 versions to generate the response points for the scaling procedure and also to allow the versions to be linked together (see appendix A for items and schedules).

[1] See chapter 1 for a review of this literature.

Findings

The survey was administered on a month-by-month basis from July through December 1977. Because each monthly sample was independent, there are six independent sample estimates of the geometric mean responses, the weighted sums of which constitute the final national-level values. If the items and the interviewing were to exhibit reliability, one would expect that the monthly estimates would not differ very much among themselves. Therefore, it is possible to assess the quality of the data as the survey progressed in the field. In the following tables, the monthly pretest and final national-level data are presented for comparative purposes.

As detailed earlier and in previous work cited, the appropriate measure of central tendency for ratio judgments is the geometric mean defined as

$$\sqrt[N]{\prod_{i=1}^{N} X_i}$$

which, in practice, is calculated simply by taking the antilog of the arithmetic mean

of the logarithms of the responses or the antilog of

$$\frac{\sum_{i=1}^{N} \log X_i}{N}.$$

Table 25 displays the geometric means of the magnitude estimation responses of the core items of the primary index scale for the final national-level data, the monthly estimates, and the national pretest (the results of the pretest are discussed in chapter 5). These *N*s of 8 to 10 thousand per month exhibit substantial uniformity across offense types. In fact, the intercorrelation matrix entries of months typically center about 1.00. Thus, it may be assumed that the reliabilities of the items and administrative procedures are high. For the most part, the pretest values are somewhat lower than those obtained from the final survey. These lower values are to be expected because the final stimuli wordings, interviewer instructions, and general procedures had not yet been refined when the national pretest was undertaken early in 1977. Additionally, as shown in table 27, the data seem to indicate that interviewers are better able to elicit responses as they become more experienced in administering the magnitude estimation items. The net effect of improved interviewer techniques generally is expanded perceptions of severity as the item intensities are increased.

Note that the core items listed in the tables generate the seriousness scores for the components of any criminal event which has elements of injury, theft, or damage to property. Because of their importance in scaling the index crimes and their additional utility in determining the forms of the function between stimulus intensity changes and perceptions of those changes, these core items appeared more numerously in the 12 schedules than did the remainder of the offense types. Therefore, the comparisons among demographic variables in chapter 8 are based on these core items because of the stability which results in the estimates due to the comparatively large sample sizes.

Of course the primary interest here is in the ratios among the offenses. Table 26 displays the perceived ratios of the various offense stimuli compared to a theft of $1. As with table 25, the ratios generated by the monthly estimates are almost identical (they must be because they are based on the geometric means). The bombing of a building resulting in 20 deaths is the most serious crime (72 times more serious than a theft of $1), followed by one death (35.6:1), rape (25.8:1), injury resulting in hospitalization (12:1), theft of $10,000 (10.9:1), injury resulting in medical treatment and discharge (8.5:1), robbery of $10 with a weapon (7.3:1), theft of $1,000 (6.9:1), robbery of $10 with physical or verbal threat (6.6:1), theft of $100 (3.6:1), burglary of $10 (3.2:1), theft of $50 (2.9:1), theft of $10

Table 25 (Geometric means, by core-item-offense stimuli)

Final national level, monthly estimates, and pretest

Offense		Final national level	July	Aug.	Sept.	Oct.	Nov.	Dec.	Pretest
Theft:	$1*	21.9	23	23	22	21	20	21	24
	$10	37.8	38	41	38	38	35	37	41
	$50	63.0	65	66	63	65	61	59	62
	$100	78.5	79	81	80	80	76	78	70
	$1,000	150.2	152	161	149	155	147	146	131
	$10,000	239.3	230	247	240	258	240	233	221
Injury:	Death	778.4	758	868	752	777	793	841	732
	Hospitalization	261.4	269	276	255	275	282	246	230
	Treatment, no hospitalization	186.0	179	178	194	212	193	182	162
	Minor	32.2	34	34	31	34	29	33	43
Robbery $10 with:									
Physical or verbal threat		144.8	138	144	133	143	143	141	128
Weapon		160.0	159	171	152	172	160	165	157
Burglary and theft of $10		70.6	67	69	69	70	69	63	54
Rape		565.6	528	609	564	581	647	555	—
Bombing of building, 20 deaths		1577.5	1378	1657	1559	1689	1717	1629	—

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 26 (Severity ratios, by core-item-offense stimuli)

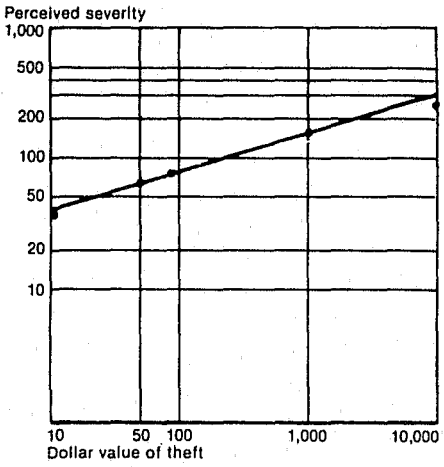
Final national level, monthly estimates, and pretest

Offense		Final national level	July	Aug.	Sept.	Oct.	Nov.	Dec.	Pretest
Theft:	$1*	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	$10	1.7	1.6	1.8	1.7	1.8	1.8	1.8	1.8
	$50	2.9	2.8	2.8	2.9	3.1	3.0	2.8	2.6
	$100	3.6	3.4	3.5	3.6	3.8	3.8	3.7	3.0
	$1,000	6.9	6.6	6.9	6.8	7.1	7.4	7.0	5.6
	$10,000	10.9	10.0	10.6	10.9	12.3	12.0	11.1	9.4
Injury:	Death	35.6	33.0	37.2	34.2	37.0	39.6	40.0	31.1
	Hospitalization	12.0	11.7	11.8	11.6	13.1	14.1	11.7	9.8
	Treatment, no hospitalization	8.5	7.8	7.6	8.8	10.1	9.6	8.7	6.9
	Minor	1.5	1.5	1.5	1.4	1.6	1.4	1.6	1.8
Robbery $10 with:									
Physical or verbal threat		6.6	6.0	6.2	6.0	6.8	7.2	6.7	5.4
Weapon		7.3	6.9	7.3	6.9	8.2	8.0	7.9	6.7
Burglary and theft of $10		3.2	2.9	3.0	3.1	3.3	3.4	3.0	2.3
Rape		25.8	23.0	26.1	25.6	27.7	32.4	26.4	—
Bombing of building, 20 deaths		72.1	59.9	71.1	70.9	80.4	85.8	77.6	—

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Figure 9
(Dollar value of theft vs. perceived severity)

Final national level



$Y = 21.88$
$b = 0.27$

Line is plot of expected values
• = observed values

(1.7:1), minor injury (1.5:1), and theft of $1 (1:1).

In practice it will be proposed that an offense resulting in one death with no other components of criminally offensive behavior involved would receive a value of 35.6. In like manner, a simple theft of $100 would receive a value of 3.6, and so on for the remaining offenses. One would then construct a composite score for criminal acts committed by individuals, groups, or specially defined demographic clusters. The comparisons of perceived severities across demographic, geographic, and victimization-specific groups in the United States is the objective of chapter 8.

However, the validity of such comparisons and of the scale itself depends on the determination of the scalability of the items. In other words, it must be determined whether perceived magnitudes of change in offense-stimulus intensity follow a power function. One may have confidence in the findings if, out of some 204 items, an internally coherent and recognizable scale function for the core items that have been randomly distributed throughout the stimuli is produced.

In the more traditional psychophysical experiment the shape of the function between the stimulus intensity and the perceived increments is relatively simple to determine because the strength of the stimulus (sound level, light intensity, electric shock strength, etc.) is readily measurable. In this study and other investigations involving social continua, the strength of the stimulus is an unknown quantity; therefore the shape of the relationship between these social continua and their perceived intensities is difficult and often impossible to ascertain.

In the NSCS, the only metrically defined offense variable is that of the dollar value of theft. Therefore many different dollar-value thefts and dollar-value thefts combined with various injuries have been offered to respondents so that a satisfactory determination of the shape of the function between dollar value and perceived severity may be accomplished.

Two sets of numbers which plot a straight line on log-log paper may be said to be related to one another as a power function. (A power function in log transform is a simple linear relationship.)

Figure 9 indicates that the perceived severity of increments in the dollar value of thefts is a power function. The expected values based on the function $Y = 21.88X^{0.27}$ lie almost perfectly on the observed values and both trace a straight line on log-log paper.

Table 27 presents the regression constants and slopes of the power functions for the final national level, monthly level, and pretest. The baseline or Y-intercept value is almost identical month by month, with a weighted average of 21.88 for the total national-level data base. The slopes, while extremely close in value (0.26 to 0.28 for the national survey, 0.24 for the pretest), hint at the possible time trend in the data related to possible improvement in interview technique alluded to earlier.

Field experience with this scale has indicated that a lack of understanding of the task on the part of the respondent or a poor interviewer instructional technique or both usually result in reduced diversity in the responses, with the net effect of diminished ratio differences. Smaller regression line slopes follow from these phenomena. Thus the smallest slope (0.24) appears in the pretest data, followed by a jump to 0.26 in July when the survey went into the field with refined instructional materials

Table 27 (Regression constants and slopes)

Dollar value of theft vs. perceived severity; final national level, monthly estimates, and pretest
$(Y = aX^b)$

Sample	Constant (a)	10^a	Slope (b)
Final national level	1.34	21.88	0.27
July	1.35	22.39	0.26
August	1.37	23.44	0.26
September	1.34	21.88	0.27
October	1.33	21.38	0.28
November	1.30	19.95	0.28
December	1.32	20.89	0.27
Pretest	1.37	23.44	0.24

Table 28

Predicted geometric means of thefts based on power functions for samples

Samples	Dollar value $10	50	100	1,000	10,000
Final national level (Obs.)	38	63	78	150	239
(Pred.)	41	63	76	141	263
July (Obs.)	38	65	79	152	230
(Pred.)	41	63	75	137	251
Aug. (Obs.)	41	66	81	161	247
(Pred.)	43	66	79	145	266
Sept. (Obs.)	38	63	80	149	240
(Pred.)	41	63	75	139	257
Oct. (Obs.)	38	65	80	155	258
(Pred.)	41	63	77	145	275
Nov. (Obs.)	35	61	76	147	240
(Pred.)	38	59	72	136	259
Dec. (Obs.)	37	59	78	146	233
(Pred.)	39	60	72	134	250
Pre-test (Obs.)	41	61	72	127	222
(Pred.)	41	62	70	131	221

and better trained interviewers than in the pretest, followed by small increments in the slopes during the remainder of the survey period. It is hypothesized that this trend, if real, results from improving interviewer technique and, through attrition (those interviewers who were less involved and motivated dropped out), the development of a better and more highly committed interviewing team. Nonetheless, whatever the meaning of this small slope trend, the effect on observed data is insignificant within the 6-month period of the survey.

In table 28 the predicted values of the perceived magnitude of $10 to $10,000

value stimuli based on the power function estimates for each month, final, and pretest data are very close to the observed. In fact, the goodness-of-fit tests show no significant differences at the 0.4 to 0.5 level.

At this stage in the discussion of the findings of the National Survey of Crime Severity it has been shown that, with thorough and proper training of interviewers, the careful choice of stimulus wording, and explicit instructions, magnitude estimations can be performed by the general U.S. population. Repeatable results are obtained and a power function is generated. Intensity orderings of the stimuli are maintained over time, as are the relative distances among those orderings.

The killing of 20 people by bombing a building is judged to be 72 times more serious than the theft of $1, while the killing of one person is about 36 times more serious than the theft of $1. Most of the remaining criminally offensive behaviors lie within the bounds of one homicide and the theft of $1.

It is appropriate here to discuss the complete item set of responses. Table 29 displays all of the 204 offense-stimulus items in ascending severity order. The interested reader is encouraged to peruse these data with care for this array constitutes the overall product of the national-level survey of the perceptions of the population regarding the relative gravities of a wide range of criminal behaviors. This data set was produced through the aggregation of the 12 versions of the stimulus items under the assumption of little or no ordering effects of the items or versions. No such problems developed in the national pretest; therefore, the appropriateness of version aggregation appears to be supported by the total survey.[2] Thus the geometric means and ratios are fully comparable across items even though item sample size, respondent, and item repetition rates vary.

The least serious offense is the juvenile status violation of playing hooky from school, with a ratio score of one-fourth that of a theft of $1, while the most serious offense is that of a bombing of a building in which 20 people are killed, with a score of 72.1. Offenses such as playing dice in an alley, trespassing, juvenile incorrigibility, vagrancy, and being a runaway are all considered to be less serious than the theft of $1.

Offenses lying in the range of one to two times the theft of $1 include such acts as taking bets on the numbers, being disorderly, willingly engaging in a homosexual act, possessing or smoking marijuana, pushing or shoving someone without injuring him/her, being a customer in a house of prostitution, stealing $10 worth of property from outside a building, and making an obscene phone call.

Between 2 and 3 on the ratio scale fall such offenses as prostitution, trespassing and stealing $10 worth of materials, carrying an illegal knife, stealing property worth $50 from outside a building, and breaking into a department store and stealing $10 worth of merchandise.

Breaking into a home and stealing $100, threatening to fire employees if they join a labor union, picking a person's pocket of $10, stealing property worth $100 from outside a building, passing a bad check, labor law violations, and turning in a false fire alarm are some of the offenses falling between 3 and 4 in perceived ratio seriousness.

Between 4 and 5 in the ratio severity are such offenses as picking a person's pocket of $100, cheating on one's Federal income tax return, carrying a gun illegally, and male exhibitionism.

Using force to rob a victim of $10, but without injuring him/her, received a ratio score of 5 from the national sample, while offenses such as indecent assault, loan sharking, threatening a victim to rob him/her of $10, refusing to sell a house to someone because of race, possessing heroin for personal use, and showing pornographic movies to a minor fell between 5 and 6.

Cheating on Federal income taxes to avoid paying $10,000 received a ratio score of 6.1 in the national survey, while stealing $10,000 from outside a building warranted an 11.8, indicating that the dollar value of theft diminishes dramatically when the government is the victim.

Running a prostitution ring, embezzling $1,000, jumping bail, pimping, refusing to hire someone because of his/her race, stealing $1,000 from outside a building, and the pollution by a factory of a city's water supply causing one person to become ill all received scores between 6 and 7 on the ratio scale.

Between 7 and 8 the dollar value of various kinds of thefts increased to the $1,000 range, personal encounters increase in severity; illegally receiving monthly welfare checks, conspiracy, and selling contaminated food also fell into this category.

All of these offenses and those whose ratio scores lie below 8.5 are judged to be less serious than intentionally injuring someone to the extent that he/she needs to be treated by a doctor but not hospitalized.

Selling contaminated food causing one person to be treated by a doctor, dealing in marijuana for resale, performing an illegal abortion, hitting a person with a lead pipe causing him/her to be treated by a doctor, and illegally receiving welfare checks of $200 a month occupy the 8 to 9 category.

When a city official takes a bribe, large companies fix prices, a witness falsifies documents for a trial, a public official steals $1,000 of public money, a police officer knowingly makes a false arrest, a government official intentionally hinders the investigation of a criminal offense, and a person breaks into a home and steals $1,000, respondents placed these offenses between 9 and 10 on the ratio scale. It is in this category that the offenses commonly known as "white-collar" began to appear in the severity ratio scale. Corruption of public officials, pollution, and corporate law violations ranged from 8 almost all the way to the end of the scale (39.1) at which point a factory pollutes the water supply of a city causing 20 people to lose their lives.

Between 10 and 12 lay the offenses of selling barbituates, injuring a person so that he/she requires hospitalization, smuggling marijuana, stealing $10,000 from outside a building, paying a bribe to a legislator, lying under oath during a trial, paying a witness to give false testimony, and the taking of a bribe by

[2]See Appendix B for a discussion by Charles D. Cowan of the Survey Analysis and Evaluation Branch of the Bureau of the Census concerning the lack of item, version, and aggregation effects in the national pretest.

a police officer so that he will not interfere with an illegal gambling operation.

In the range of perceived severities up to 20, the value of thefts increased to $100,000, robberies increased in injury and dollar loss, personal injuries resulting from assault and battery required hospitalization, and heroin smuggling appeared. Several corruption, pollution, and fraud crimes came to the fore: a doctor cheats on claims to a Federal health insurance plan to gain $10,000, a factory knowingly pollutes the water supply of a city so that people are injured and killed, a legislator takes a bribe from a company to vote for a law favoring that company, a company pays a bribe of $10,000 to a legislator, and a store owner sells contaminated food with the result that one person dies.

Above the ratio score of 20, offense types become even more serious: selling heroin to others for resale (20.6); kidnapping (21.2); forcible rape (25.2); armed skyjacking (26.3); various injuries resulting from the terrorist bombing of a building (20 people injured, no medical treatment, 30.5, one person killed, 44.0, 20 people killed 72.1); running a narcotics ring (33.8); homicide (35.6); pollution by a factory resulting in 20 deaths (39.2); robbery-homicide (43.2); child beating resulting in death to the child (47.8); and rape-homicide (52.8).

The uniformities in these data, especially with regard to dollar-value increments and the grievousness of the injury, are remarkable when put into the context of the study design. As the standard errors for the survey items detailed in appendix C demonstrate, the variation around the mean log estimates is small, thus supporting the high reliability of the item response. These items are randomly distributed across 12 versions with most stimuli appearing only once. The fact that a power function scale was generated and other uniformities, as described above, were produced in the responses by the national sample suggests that the survey produced a valid and reliable set of perceived severities.

Various offenses committed by consenting adults in the sexual and self-victimization (drug usage, gambling) realms were not thought to be very serious by the national sample. As the vulnerability of the victim increased because of age or the sex of the victim or as a result of the dangerousness of the weapon or situation, so did the perceived severity of the event. Public corruption; fraud perpetrated by companies, public servants, and medical doctors; and pollution by factories—all of these "white-collar" crimes are thought to be relatively serious as are, of course, serious property crimes involving large amounts of dollar loss and crimes against the person resulting in injury, personal violation, or death.

Various aspects of victim-offender relationships and weapon usage have been treated in chapter 4 and were not dealt with here. The study was not designed to delve into these topics or that of the culpability or blameworthiness of the offender; however, these topics were discussed within the data constraints in that chapter.

In the next chapter the scale parameters produced by various regional, demographic, and victimization experience variables are discussed.

Table 29 (NSCS final National level)

Offense stimuli items: Geometric means and ratio scores in ascending order of perceived severity

Item	Geometric mean	Ratio score
A person under 16 years old plays hooky from school.	5.392	0.25
A person is a vagrant. That is, he has no home and no visible means of support.	6.684	0.31
A person takes part in a dice game in an alley.	10.837	0.50
A person trespasses in the backyard of a private home.	14.104	0.64
A person under 16 years old breaks a curfew law by being out on the street after the hour permitted by the law.	16.059	0.73
A person is drunk in public.	16.779	0.77
A person knowingly trespasses in a railroad yard.	18.377	0.84
A person under 16 years old runs away from home.	18.683	0.85
A person under 16 years old is reported to police by his parents as an offender because they are unable to control him.	20.689	0.95
A person under 16 years old illegally has a bottle of wine.	23.152	1.06
A group continues to hang around a corner after being told to break up by a police officer.	23.091	1.06

Table 29—continued

Item	Geometric mean	Ratio score
A person takes bets on the numbers.	23.681	1.08
A person disturbs the neighborhood with loud noisy behavior.	24.868	1.14
Two persons willingly engage in a homosexual act.	28.755	1.31
A person has some marijuana for his own use.	29.335	1.34
A person trespasses in a railroad yard and steals a lantern worth $10.	30.345	1.37
A person smokes marijuana.	31.063	1.42
A person has some barbiturates, such as sleeping pills, for his own use without a legal prescription.	31.208	1.43
A person intentionally shoves or pushes a victim. No medical treatment is required.	32.167	1.47
A person takes barbiturates, such as sleeping pills, without a legal prescription.	32.392	1.48
A person breaks into a parking meter and steals $10 worth of nickels.	34.365	1.57
A person is a customer in a place where he knows liquor is sold without a license.	34.370	1.57
A male, over 16 years of age, has sexual relations with a willing female under 16.	34.927	1.60
A person is a customer in a house of prostitution.	35.374	1.62
A person steals property worth $10 from outside a building.	37.777	1.73
A person is a customer in a place where he knows gambling occurs illegally.	38.274	1.75
A person under 16 years old is drunk in public.	38.314	1.75
A store owner knowingly puts "large" eggs into containers marked "extra-large."	40.729	1.87
An employee embezzles $10 from his employer.	41.018	1.87
A person makes an obscene phone call.	40.916	1.87
A woman engages in prostitution.	45.355	2.07
A person is found firing a rifle for which he knows he has no permit.	45.893	2.10
A person steals $10 worth of merchandise from the counter of a department store.	47.565	2.17
A person trespasses in a city-owned storage lot and steals equipment worth $10.	48.539	2.22
A person knowingly carries an illegal knife.	53.398	2.44
A person breaks into a department store and steals merchandise worth $10.	60.518	2.77
A person steals property worth $50 from outside a building.	63.049	2.88

continued

Table 29—continued

Item	Geometric mean	Ratio score
A person breaks into a school and steals $10 worth of supplies.	67.413	3.08
A person forces open a cash register in a department store and steals $10.	68.471	3.13
A person breaks into a home and steals $100.	68.743	3.14
An employer illegally threatens to fire employees if they join a labor union.	69.657	3.18
A person breaks into a building and steals property worth $10.	70.559	3.22
A person attempts to rob a victim but runs away when a police car approaches.	71.232	3.26
A person picks a victim's pocket of $10.	71.926	3.29
A person breaks into a department store, forces open a cash register, and steals $10.	72.488	3.31
A person runs a place where he permits gambling to occur illegally.	76.175	3.48
A person steals property worth $100 from outside a building.	78.473	3.59
A person knowingly passes a bad check.	78.755	3.60
A person attempts to break into a parked car, but runs away when a police car approaches.	79.310	3.62
A labor union official illegally threatens to organize a strike if an employer hires nonunion workers.	81.222	3.71
A person turns in a false fire alarm.	82.807	3.78
A person attempts to break into a home but runs away when a police car approaches.	92.343	4.22
A person breaks into a public recreation center, forces open a cash box and steals $10.	94.412	4.31
A person robs a victim. The victim is injured but not hospitalized.	95.598	4.37
A person picks a victim's pocket of $100.	95.767	4.38
A person steals an unlocked car and later abandons it undamaged.	97.277	4.45
A person cheats on his Federal income tax return.	98.155	4.49
A person carries a gun, illegally.	101.629	4.64
A man exposes himself in public.	103.890	4.75
A person snatches a handbag containing $10 from a victim on the street.	107.911	4.93
A person knowingly buys stolen property from the person who stole it.	109.378	5.00
A person, using force, robs a victim of $10. No physical harm occurs.	112.031	5.12
A man runs his hands over the body of a female victim, then runs away.	112.263	5.13
A person loans money at an illegally high interest rate.	116.432	5.32
A person threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.	117.790	5.38
A real estate agent refuses to sell a house to a person because of that person's race.	117.731	5.38
A person has some heroin for his own use.	118.507	5.42
A person runs a place where liquor is sold without a license.	120.240	5.50
A theatre owner knowingly shows pornographic movies to a minor.	123.975	5.67
A person cheats on his Federal income tax return and avoids paying $10,000 in taxes.	133.742	6.11
A person runs a prostitution racket.	133.865	6.12
A person beats a victim with his fists. The victim requires treatment by a doctor but not hospitalization.	134.996	6.17
An employee embezzles $1,000 from his employer.	136.015	6.22
A person, free on bail for committing a serious crime, purposefully fails to appear in court on the day of his trial.	137.735	6.30
A person gets customers for a prostitute.	139.542	6.38
An employer refuses to hire a qualified person because of that person's race.	139.792	6.39
A person uses heroin.	143.023	6.54
A person steals $1,000 worth of merchandise from an unlocked car.	143.780	6.57
A person does not have a weapon. He threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.	144.752	6.62
A person, using force, robs a victim of $10. The victim is hurt and requires treatment by a doctor but not hospitalization.	146.526	6.70
Because of a victim's race, a person injures a victim to prevent him from enrolling in a public school. No medical treatment is required.	148.633	6.79
A person steals property worth $1,000 from outside a building.	150.203	6.86
A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result, one person becomes ill but does not require medical treatment.	150.922	6.90
A person breaks into a public recreation center, forces open a cash box, and steals $1,000.	151.624	6.93
A person beats a victim with his fists. The victim requires hospitalization.	151.900	6.94
A person, armed with a lead pipe, robs a victim of $10. The victim is injured and requires treatment by a doctor but not hospitalization.	155.799	7.12
A person signs someone else's name to a check and cashes it.	157.845	7.21
A person willingly hides out a bank robber.	158.080	7.22
A person breaks into a department store and steals merchandise worth $1,000.	159.255	7.28
A person beats a victim with his fists. The victim is hurt but does not require medical treatment.	159.600	7.29
A person threatens a victim with a weapon unless the victim gives him money. The victim gives him $10 and is not harmed.	160.007	7.31
A person illegally gets monthly welfare checks.	161.431	7.38
A person, armed with a lead pipe, robs a victim of $10. No physical harm occurs.	163.152	7.46
A person steals $1,000 worth of merchandise from the counter of a department store.	166.928	7.63
A person conceals the identity of others that he knows have committed a serious crime.	167.673	7.66
Knowing that a shipment of cooking oil is bad, a store owner decides to sell it anyway.	169.209	7.73
A person intentionally hits a victim with a lead pipe. No medical treatment is required.	172.345	7.88
A teenage boy beats his father with his fists. The father requires hospitalization.	173.424	7.93
A person trespasses in a railroad yard and steals tools worth $1,000.	173.571	7.93
A person, using force, robs a victim of $1,000. No physical harm occurs.	174.595	7.98
A person steals an unlocked car and sells it.	176.066	8.05
Knowing that a shipment of cooking oil is bad, a store owner decides to sell it anyway. Only one bottle is sold and the purchaser is treated by a doctor but not hospitalized.	178.505	8.16
A person illegally gets monthly welfare checks of $200.	180.877	8.27
A person intentionally injures a victim. The victim is treated by a doctor but is not hospitalized.	186.039	8.50
A person sells marijuana to others for resale.	186.650	8.53
A person performs an illegal abortion.	187.589	8.57
A person intentionally hits a victim with a lead pipe. The victim requires treatment by a doctor but not hospitalization.	195.339	8.93
A person, armed with a lead pipe, robs a victim of $1,000. No physical harm occurs.	197.042	9.01
A city official takes a bribe from a company for his help in getting a city building contract for the company.	197.850	9.04
A person knowingly makes false entries on a document that the court has requested for a criminal trial.	200.680	9.17
Several large companies illegally fix the retail prices of their products.	201.037	9.19
A person threatens to seriously injure a victim.	203.307	9.29
A person robs a victim of $10 at gunpoint. No physical harm occurs.	206.033	9.42
A public official takes $1,000 of public money for his own use.	206.812	9.45

A police officer knowingly makes a false arrest.	209.230	9.56
A person breaks into a home and steals $1,000.	210.012	9.60
A person breaks into a display case in a store and steals $1,000 worth of merchandise.	211.372	9.66
A person walks into a public museum and steals a painting worth $1,000.	212.386	9.71
A person robs a victim of $1,000 at gunpoint. No physical harm occurs.	212.646	9.72
A person breaks into a school and steals equipment worth $1,000.	212.732	9.72
A person breaks into a department store, forces open a safe, and steals $1,000.	213.118	9.74
A government official intentionally hinders the investigation of a criminal offense.	218.099	9.97
A person threatens to harm a victim unless the victim gives him money. The victim gives him $1,000 and is not harmed.	224.742	10.27
A person operates a store where he knowingly sells stolen property.	225.155	10.29
A person illegally sells barbiturates, such as prescription sleeping pills, to others for resale.	225.573	10.31
A person intentionally hits a victim with a lead pipe. The victim requires hospitalization.	227.334	10.39
A person smuggles marijuana into the country for resale.	229.551	10.49
A person steals a locked car and sells it.	236.771	10.82
A person steals property worth $10,000 from outside a building.	239.281	10.94
A company pays a bribe to a legislator to vote for a law favoring the company.	244.413	11.17
Three high school boys beat a male classmate with their fists. He requires hospitalization.	247.938	11.33
A person knowingly lies under oath during a trial.	248.866	11.37
Ten high school boys beat a male classmate with their fists. He requires hospitalization.	256.853	11.74
A man beats a stranger with his fists. He requires hospitalization.	257.800	11.78
A person stabs a victim with a knife. No medical treatment is required.	259.195	11.85
A person intentionally injures a victim. The victim is treated by a doctor and hospitalized.	261.435	11.95
A police officer takes a bribe not to interfere with an illegal gambling operation.	261.637	11.96
A person gives the floor plans of a bank to a bank robber.	262.428	11.99
A person pays a witness to give false testimony in a criminal trial.	266.678	12.19
A person intentionally sets fire to a building causing $10,000 worth of damage.	278.864	12.75
A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city.	285.147	13.03
A person, armed with a lead pipe, robs a victim of $10. The victim is injured and requires hospitalization.	291.726	13.33
An employer orders his employees to make false entries on documents that the court has requested for a criminal trial.	293.631	13.42
A doctor cheats on claims he makes to a Federal health insurance plan for patient services. He gains $10,000.	295.105	13.49
A person, armed with a lead pipe, robs a victim of $1,000. The victim is injured and requires treatment by a doctor but not hospitalization.	300.295	13.72
A legislator takes a bribe from a company to vote for a law favoring the company.	303.417	13.87
A doctor cheats on claims he makes to a Federal health insurance plan for patient services.	308.581	14.10
A company pays a bribe of $10,000 to a legislator to vote for a law favoring the company.	316.311	14.46
A person, using force, robs a victim of $10. The victim is hurt and requires hospitalization.	319.418	14.60
A person breaks into a bank at night and steals $100,000.	339.466	15.51
A person, armed with a lead pipe, robs a victim of $1,000. The victim is injured and requires hospitalization.	342.330	15.65
A person robs a victim of $10 at gunpoint. The victim is wounded and requires treatment by a doctor but not hospitalization.	344.161	15.73
A county court judge takes a bribe to give a light sentence in a criminal case.	344.547	15.75
A teenage boy beats his mother with his fists. The mother requires hospitalization.	347.784	15.90
A person attempts to kill a victim with a gun. The gun misfires and the victim escapes unharmed.	358.678	16.39
A person robs a victim of $1,000 at gunpoint. The victim is wounded and requires treatment by a doctor but not hospitalization.	361.133	16.51
A person, using force, robs a victim of $1,000. The victim is hurt and requires treatment by a doctor but not hospitalization.	362.848	16.58
A person, using force, robs a victim of $1,000. The victim is hurt and requires hospitalization.	368.327	16.83
A man drags a woman into an alley, tears her clothes, but flees before she is physically harmed or sexually attacked.	368.834	16.86
A legislator takes a bribe of $10,000 from a company to vote for a law favoring the company.	369.539	16.89
A person stabs a victim with a knife. The victim requires treatment by a doctor but not hospitalization.	374.916	17.14
A high school boy beats an elderly woman with his fists. She requires hospitalization.	383.302	17.52
An employer orders one of his employees to commit a serious crime.	386.533	17.67
A person, armed with a gun, robs a bank of $100,000 during business hours. No one is physically hurt.	387.052	17.69
A person intentionally shoots a victim with a gun. The victim is wounded slightly and does not require medical treatment.	388.558	17.76
Knowing that a shipment of cooking oil is bad, a store owner decides to sell it anyway. Only one bottle is sold and the purchaser dies.	388.936	17.78
A person robs a victim of $10 at gunpoint. The victim is wounded and requires hospitalization.	392.227	17.93
A person stabs a victim with a knife. The victim requires hospitalization.	394.325	18.02
A man beats his wife with his fists. She requires hospitalization.	400.754	18.32
A person intentionally shoots a victim with a gun. The victim requires treatment by a doctor but not hospitalization.	415.075	18.97
A high school boy beats a middle-aged woman with his fists. She requires hospitalization.	426.114	19.48
A person kills a victim by recklessly driving an automobile.	426.145	19.48
A person smuggles heroin into the country.	426.487	19.49
A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result 20 people become ill but none require medical treatment.	431.299	19.71
A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result one person dies.	436.075	19.93
A man forcibly rapes a woman. Her physical injuries require treatment by a doctor but not hospitalization.	439.088	20.07
A person sells heroin to others for resale.	451.736	20.65
A person robs a victim of $1,000 at gunpoint. The victim is wounded and requires hospitalization.	460.007	21.02
A person kidnaps a victim.	463.386	21.18
A person pays another person to commit a serious crime.	474.245	21.67
A person intentionally sets fire to a building causing $500,000 worth of damage.	487.652	22.29
A parent beats his young child with his fists. The child requires hospitalization.	500.831	22.89
A person kidnaps a victim. A ransom of $1,000 is paid and the victim is returned unharmed.	535.498	24.47
A person plants a bomb in a public building. The bomb explodes but no one is injured.	536.254	24.51
A person intentionally shoots a victim with a gun. The victim requires hospitalization.	543.592	24.84
A person intentionally sets fire to a building causing $100,000 worth of damage.	544.043	24.86
A man tries to entice a minor into his car for immoral purposes.	551.831	25.22

continued

Table 29—continued

Item	Geometric mean ↓	Ratio score ↓
A man forcibly rapes a woman. No other physical injury occurs.	565.658	25.85
An armed person skyjacks an airplane and demands to be flown to another country.	575.696	26.31
A woman stabs her husband. As a result, he dies.	611.132	27.93
A man forcibly rapes a woman. Her physical injuries require hospitalization.	657.340	30.04
A person plants a bomb in a public building. The bomb explodes and 20 people are injured but no medical treatment is required.	666.553	30.46
An armed person skyjacks an airplane and holds the crew and passengers hostage until a ransom is paid.	715.992	32.72
A person plants a bomb in a public building. The bomb explodes and one person is injured but no medical treatment is required.	721.692	32.98
A person runs a narcotics ring.	738.810	33.77
A person intentionally injures a victim. As a result, the victim dies.	778.374	35.57
A person stabs a victim to death.	781.369	35.71
A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result 20 people die.	856.710	39.15
A man stabs his wife. As a result, she dies.	857.988	39.21
A person robs a victim at gunpoint. The victim struggles and is shot to death.	946.181	43.24
A person plants a bomb in a public building. The bomb explodes and one person is killed.	961.672	43.95
A parent beats his young child with his fists. As a result, the child dies.	1046.428	47.83
A man forcibly rapes a woman. As a result of physical injuries, she dies.	1155.335	52.80
A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	1577.526	72.10

Chapter 8

Regional and demographic differences in the perceived severity of crime

Earlier in this report it was indicated that one of the objectives of the crime severity study was to collect national-level data concerning public perceptions about the relative severities of various kinds of crime in order to construct a scale of criminally offensive behavior. This emphasis necessarily limits the focus to the consensual aspects of the data (that is, central tendency) rather than variation in responses. Thus it is assumed for now that in-the-aggregate variation in seriousness perception surrounding a particular criminal event constitutes error or noise and that calculating geometric means provides valid point estimates of perceived severity.

The preceding chapter discussed the general findings of the study and presented data concerning the entire set of 204 offense stimuli that were surveyed. In this chapter we investigate whether attitudes toward the relative severity of various crimes differ across regions of the country or for different segments of the population.

It should be noted at the outset that, although we shall discuss the magnitude judgments of respondents reflected in the geometric means, we are not particularly interested in the absolute values given to the offense stimuli. In effect, we are not comparing different groups in terms of the judged absolute gravity but rather in terms of the relative degree of judged harm. Thus we are concerned primarily with whether magnitude judgments conform to the power function relationship discussed in chapter 7. In this context, the only number needed to characterize the data completely (on the assumption that all the data are approximated by straight lines in a logarithmic plot) is the slope of the relation between dollar and perceived seriousness. The slopes provide a measure by which differences across groups may be observed.

The findings reported below are divided into three groupings. First, univariate demographic and victimization characteristics for the total United States and the four census regions are presented. The core item offenses are tabulated by region, race, sex, income, occupation, education, and victimization. Second, the multivariate distribution of select factors is examined. For the Nation and the four census regions the analysis consists of race by age by sex, occupation by income, race by income, and victimization by race. Last, we report the findings of multiple regression analysis using disaggregated data.

Univariate data

Census regions

The geometric means data for the total United States and the four census regions are displayed in table 30. The magnitude judgments for the various dollar values of theft indicate that the absolute values of perceived severity are lowest in the Northeast and highest in the North Central regions (with the scores for the South and West generally falling between but closest to those obtained in the North Central region). The gap between the Northeast and the North Central magnitude values becomes increasingly pronounced as the dollar value of theft increases. From a difference of about 3 points for the perceived seriousness of $1 of theft (19.907 vs. 23.014), the difference in geometric means increases to almost 55 points at the highest value of theft (206.972 vs. 261.961). Comparisons of the magnitude judgments for the dollar-value items for various pairs of the regions reveal similar differences in the absolute values.

However, as noted previously, differences in the absolute values of perceived seriousness are of little interest compared to the question of whether the data conform to the power function assumption. Figures 10 to 13 contain the log of dollar value plotted against the log of perceived severity for the four regions and indicate that the relationship is a power function (a power function in log transform is a simple linear relationship). Clearly, the four regions have generated fairly similar power functions. Table 31 confirms that the relationship between dollar value of theft and perceived gravity is linear, as all correlations are very near unity.

It is important to note that, despite the similarities among the functions across regions, the slopes indicate differences in the sensitivity to change in dollar-value stolen. Although the slopes reported in table 31 are very similar, ranging from .260 to .284, it is apparent that the West exhibits the greatest sensitivity, followed by the North Central and the Northeast, with the South showing the least sensitivity to changes in the dollar value of theft.

In general, for injury-related offenses, the West exhibits the highest geometric means, while the South has the lowest. For example, a bombing of a building in which 20 persons are killed has geometric means of 1442 in the Northeast, 1627 in the North Central, 1399 in the South, and 2079 in the West. The regional differences, however, do not affect the uniformity in the rank ordering of score values reflecting the extent of injury inflicted.

Although no metric is available, such as with theft, with which to plot and compute a power function, the ratios of perceived severity within regions can be compared. These data will indicate whether, despite differences in the magnitude values, the same relative perceptions of offense gravity exist. Thus, table 32 reports the ratio scores comparing the relative seriousness for 20 deaths from a bombing compared to the killing of a single person. In all census regions, the ratio of the magnitude values for these two offense stimuli is very nearly the same. Respondents in the Northeast, North Central, South, and West uniformly perceive the most serious offense as being twice as serious as the killing of a single person. Naturally, one could compute ratio scores for other injury-offense comparisons to test the scalability assumption further. We have used this particular pair of offenses in order to examine the ratio characteristic at the extreme end of the perceived severity continuum.

Table 30 (Geometric means, by core-item-offense stimuli)

Census regions

Offense		Total U.S.	Northeast	North Central	South	West
Theft:	$1*	21.827	19.907	23.014	23.068	20.606
	$10	37.777	34.378	40.823	38.735	36.354
	$50	63.049	55.285	66.061	65.305	65.519
	$100	78.473	70.055	83.623	80.827	78.327
	$1,000	150.203	134.117	161.496	148.156	159.601
	$10,000	239.281	206.972	261.961	235.069	259.859
Injury:	Death	778.374	722.753	799.055	669.847	1064.920
	Hospitalization	261.435	252.870	271.818	228.222	325.908
	Treatment, no hospitalization	186.039	181.601	190.644	165.893	226.275
	Minor	32.167	33.848	34.071	29.050	32.912
Robbery $10 with:						
Physical or verbal threat		144.752	139.492	152.146	126.428	177.714
	Weapon	160.007	146.432	175.880	143.514	186.906
Burglary						
and theft of $10		70.559	62.101	74.094	71.560	75.446
Rape		565.658	548.080	577.351	516.175	669.434
Bombing of building, 20 deaths		1577.526	1441.606	1627.180	1398.81	2079.084

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 31 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by Census region

($Y = aX^b$)

Sample	Correlation	Constant (a)	10^a	Slope (b)
Total U.S.	.996	1.339	21.827	.268
Northeast	.995	1.299	19.907	.262
North Central	.997	1.362	23.014	.271
South	.995	1.363	23.068	.260
West	.995	1.314	20.606	.284

Table 32 (Geometric mean ratios)

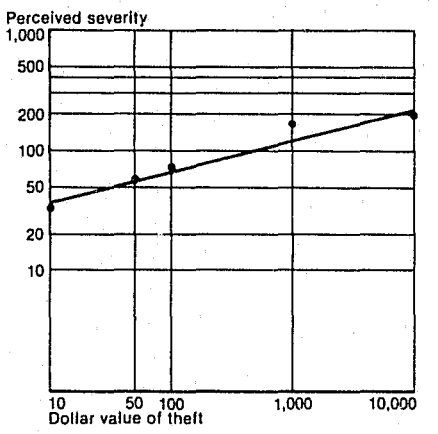
Twenty deaths by bombing to a single killing

(Total United States, by Census region)

Census region	Ratios
Total United States	2.03
Northeast	1.99
North Central	2.04
South	2.09
West	1.95

Figure 10
(Dollar value of theft vs. perceived severity)

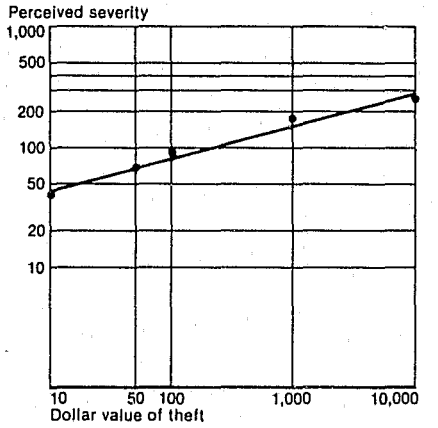
Census region: Northeast



Line is plot of expected values
• = observed values

Figure 11
(Dollar value of theft vs. perceived severity)

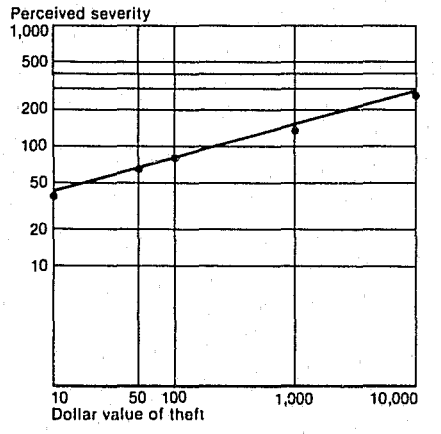
Census region: North Central



Line is plot of expected values
• = observed values

Figure 12
(Dollar value of theft vs. perceived severity)

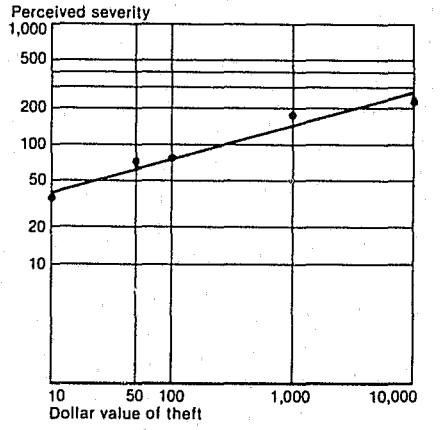
Census region: South



Line is plot of expected values
• = observed values

Figure 13
(Dollar value of theft vs. perceived severity)

Census region: West



Line is plot of expected values
• = observed values

Race

The geometric means by race for the core items for the total United States are given in table 33. These data indicate that perceived gravity is generally lower for blacks and "other" respondents than for whites. The differences, however, appear to be substantially greater for the highest levels of dollar loss. That is, for dollar values of $100 and lower the geometric means are similar across race categories, while the magnitude values for thefts involving $1,000 and $10,000 show much lower perceptions of seriousness for blacks and "other" respondents.

The variation in magnitude values can be further observed in the slopes obtained from regressing perceived severity and dollar value of theft. Table 34 shows that the slopes for blacks (.196) and "other" respondents (.245) are lower than that for whites (.277) at the total United States level. Yet, despite these differences in the range of magnitude estimation judgments evidenced by the slopes, the correlations between perceived severity and dollar value are uniformly high for the race categories (that is, r = at least .97). Further, figures 14 to 16 support the hypothesized power function of money for all three racial groups.

For serious assaultive injuries, the difference between geometric means by race becomes even greater. For a single killing, rape, or bombing, the geometric mean for whites is about twice that computed for blacks.

Although the difference in absolute values may seem appreciable, there still remains relative proportionality between serious injury offenses within racial categories. To illustrate, table 35 contains the ratios for a single death due to injury and 20 deaths resulting from a bomb. The single death is due to a stabbing, while the 20 deaths are reported to result from a bombing of a building. The ratios for white and black respondents are about the same, 2.03 and 2.04, indicating that the relative distance between offenses is equal.

For "other" respondents the score values are generally less consistent and indicate substantial variation in responses—this can be due, in part, to the lower sample size for "other" respondents (about 10 percent of the number of blacks and 1

Table 33
(Geometric means, by core-item-offense stimuli)

National: Race

Offense		White	Black	Other
Theft:	$1*	21.281	27.542	16.520
	$10	37.693	40.176	23.542
	$50	63.840	58.183	51.910
	$100	79.413	74.140	54.583
	$1,000	155.431	118.598	97.222
	$10,000	254.094	153.213	140.719
Injury:				
Death		845.688	413.433	436.865
Hospitalization		278.841	158.334	223.284
Treatment, no hospitalization		196.363	124.684	117.378
Minor		32.324	30.747	33.721
Robbery $10 with:				
Physical or verbal threat		153.190	93.763	99.524
Weapon		169.993	105.555	74.099
Burglary and theft of $10		68.096	59.691	61.431
Rape		614.096	307.854	275.430
Bombing of building, 20 deaths		1720.17	843.62	687.76

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 34 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by Census region and race

($Y = aX^b$)

Sample	Correlation	Constant (a)	10^a	Slope (b)
Total U.S.				
White	.996	1.328	21.281	.277
Black	.986	1.440	27.542	.196
Other	.972	1.218	16.520	.245
Northeast				
White	.996	1.309	20.370	.266
Black	.977	1.223	16.712	.226
Other	.979	.938	8.670	.358
North Central				
White	.997	1.341	21.928	.279
Black	.981	1.594	39.264	.182
Other	.780	1.273	18.750	.188
South				
White	.996	1.348	22.284	.273
Black	.987	1.445	27.861	.192
Other	.968	1.233	17.100	.305
West				
White	.996	1.303	20.091	.292
Black	.962	1.545	35.075	.191
Other	.953	1.250	17.783	.226

Table 35 (Geometric mean ratios)

Twenty deaths by bombing to a single killing

(Total United States, by Census region and race)

Census region	Ratios
Total United States	
White	2.03
Black	2.04
Other	1.57
Northeast	
White	1.97
Black	2.20
Other	2.54
North Central	
White	2.04
Black	2.00
Other	1.67
South	
White	2.09
Black	2.06
Other	2.11
West	
White	2.01
Black	1.74
Other	1.30

percent of the number of whites in the sample). The computed slope for "other" respondents is .245, compared to .196 for blacks and .277 for whites. The ratio, 1.57, of a single death from an injury to 20 deaths from a bombing, however, is substantially lower than for white and black respondents. It is unclear, therefore, whether subsequent comparisons using the "other" category will be similarly affected by the small sample size which will be even a greater problem in the multivariate results. Thus, although we shall report all of the data, our discussion on race will be largely devoted to black vs. white comparisons.

Within the four census regions, the observed differences in the national magnitude estimates remain about the same. Black respondents, whether they live in the Northeast, North Central, South, or West regions, generally exhibit lower scores than do whites for both serious personal and property offenses. However, a regional effect within race is observed, in that both whites and blacks in the Northeast produce lower magnitude values than their counterparts in the West (tables 36 to 39). These data indicate that the effect of race and region on perceived seriousness is additive rather than interactive.

As before, these magnitude differences do not influence the power function relationships. Table 34 clearly indicates a strong association between perceived seriousness and increases in the dollar value of theft for all regions by race except for the "other" category in the North Central region where the correlation (.78) shows only a moderately strong relationship. Further, the slope values confirm the lower sensitivity of blacks to changes in the seriousness of the theft value compared to whites for all of the regions. The values for the "other" category continue to be inconsistent compared to the other groups, as "other" respondents have the highest slopes in the Northeast (.358) and the South (.305) and intermediate slopes in the North Central (.188) and the West (.226) compared to whites and blacks.

The ratio scores for the selected injury-offense comparison reported in table 35 add some confidence to the national-level finding that whites and blacks perceive a similar ratio in the seriousness of a bombing with 20 deaths to a single death from an injury regardless of region, as opposed to the "other" category which departs appreciably in the relative seriousness of the two offenses.

Table 36
(Geometric means, by core-item-offense stimuli)

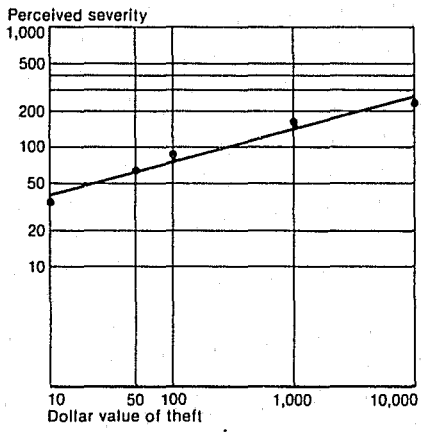
Northeast region: Race

Offense		White	Black	Other
Theft:	$1*	20.370	16.711	8.670
	$10	35.563	25.207	21.779
	$50	57.696	38.022	27.296
	$100	71.514	57.676	56.894
	$1,000	140.681	85.783	86.673
	$10,000	218.766	121.046	257.645
Injury:				
Death		781.322	352.964	269.946
Hospitalization		269.279	141.463	163.420
Treatment, no hospitalization		185.643	147.759	151.176
Minor		34.558	27.230	53.453
Robbery $10 with:				
Physical or verbal threat		149.219	76.011	49.416
Weapon		154.982	87.152	90.590
Burglary and theft of $10		65.578	38.569	22.810
Rape		581.953	322.083	158.286
Bombing of building, 20 deaths		1542.417	775.984	684.637

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Figure 14
(Dollar value of theft vs. perceived severity)

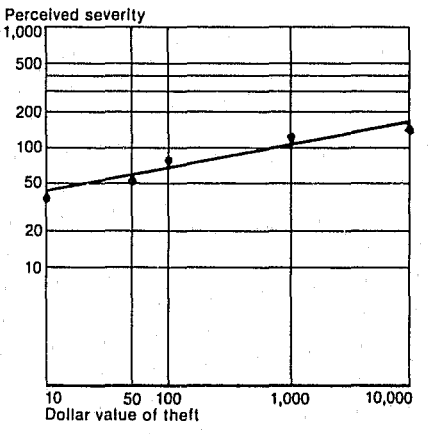
Race: White



Line is plot of expected values
• = observed values

Figure 15
(Dollar value of theft vs. perceived severity)

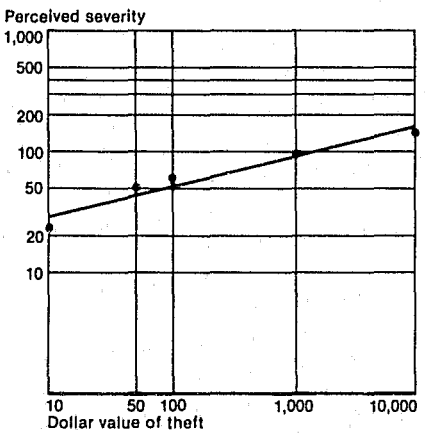
Race: Black



Line is plot of expected values
• = observed values

Figure 16
(Dollar value of theft vs. perceived severity)

Race: Other



Line is plot of expected values
• = observed values

Table 37
(Geometric means, by core-item-offense stimuli)

North Central region: Race

Offense		White	Black	Other
Theft:	$1*	21.928	39.264	18.750
	$10	39.617	58.850	24.560
	$50	65.591	71.209	73.739
	$100	82.708	101.814	27.412
	$1,000	163.202	149.578	68.969
	$10,000	269.975	196.089	107.404
Injury:				
Death		832.064	512.533	511.135
Hospitalization		278.908	206.563	197.756
Treatment, no hospitalization		193.256	166.870	123.475
Minor		33.208	44.383	51.084
Robbery $10 with:				
Physical or verbal threat		154.332	131.543	106.971
Weapon		178.475	153.683	99.581
Burglary and theft of $10		73.559	81.345	51.759
Rape		606.626	347.921	180.503
Bombing of building, 20 deaths		1699.528	1025.511	868.867

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 38
(Geometric means, by core-item-offense stimuli)

South Central region: Race

Offense		White	Black	Other
Theft:	$1*	22.284	27.861	17.100
	$10	38.497	40.156	26.884
	$50	66.633	59.818	58.647
	$100	83.128	70.329	92.008
	$1,000	155.542	117.642	155.152
	$10,000	257.828	148.883	239.015
Injury:				
Death		772.440	346.868	386.938
Hospitalization		253.362	139.248	600.745
Treatment, no hospitalization		184.731	100.543	115.980
Minor		29.472	26.687	41.992
Robbery $10 with:				
Physical or verbal threat		139.250	80.980	88.215
Weapon		157.836	89.644	106.187
Burglary and theft of $10		73.890	61.812	76.815
Rape		601.303	254.532	170.217
Bombing of building, 20 deaths		1615.537	715.380	816.289

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 39
(Geometric means, by core-item-offense stimuli)

West region: Race

Offense		White	Black	Other
Theft:	$1*	20.091	35.075	17.783
	$10	36.449	46.159	23.293
	$50	65.238	85.035	53.843
	$100	79.374	86.138	53.091
	$1,000	163.776	152.002	94.739
	$10,000	274.202	178.508	122.497
Injury:				
Death		1100.394	979.565	492.744
Hospitalization		337.873	252.758	198.869
Treatment, no hospitalization		237.705	161.526	112.851
Minor		32.925	36.059	28.963
Robbery $10 with:				
Physical or verbal threat		181.327	158.799	120.912
Weapon		199.277	154.950	64.684
Burglary and theft of $10		75.530	92.037	59.344
Rape		691.758	641.010	341.949
Bombing of building, 20 deaths		2214.203	1705.511	641.614

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Age

The magnitude judgments of the core-item-offense stimuli show no consistent pattern across the various age levels. Older respondents (that is, ages 50 to 64 and 65 and over) appear to judge the seriousness of extreme values of theft as more grave than the other age groups, but the difference in geometric means is not very large (tables 40 to 44).

It is not surprising, therefore, that the regression data given in table 45 show that, for the total United States, respondents' perceptions of offense seriousness increase in concern with increases in the dollar value of theft (the correlations are all about .99) regardless of age. The slopes of the various regression lines are very similar, ranging from .25 to .30, with the highest slopes observed for the two older age groups, thus showing the greater range of magnitude values for these respondents. Also, as expected, figures 17 to 22 show the presence of a power function for all six age groups.

For the injury-related offenses, a slight curvilinear relationship exists—respondents in the 25–34 and 35–49 age ranges generally produce higher geometric means than those both younger and older. Yet, table 46 shows that the geometric mean ratios for a bombing with 20 casualties to a single death from an injury are very similar for the first four age groups and discrepant only for the two oldest age groups.

By census region, differences across age categories follow the national-level patterns. Magnitude estimates are highest in the middle age groups for the injury offense stimuli, but the majority of the theft-related offenses exhibit no observable trend. However, for the theft of $10,000, older respondents generally have higher magnitude values. For example, in the West, the mean for respondents age 65 or older is 340 compared to 221 for individuals between ages 18 and 19. In the Northeast and North Central regions, the difference is less substantial. In the South, the major difference occurs in the 50–64 and 20–24 age groups, where the former mean is 261 compared to 208 for the latter.

The absence of appreciable magnitude differences by age for the set of theft offenses is paralleled in the power function slopes reported in table 45. Although the oldest age group (65+) consistently produces the steepest slope across regions, the slopes are reasonably close, indicating that all age groups have similar ranges in the magnitude values of perceived seriousness. This observation is strongly supported by the correlation coefficients which generally reach .99, thus indicating a near perfect relationship.

Table 40 (Geometric means, by core-item-offense stimuli)

National: Age

Offense		18-19	20-24	25-34	35-49	50-64	65+
Theft:	$1*	21.429	22.594	22.284	23.442	21.979	18.281
	$10	35.789	36.341	37.374	39.138	40.942	34.165
	$50	62.215	65.823	61.925	64.519	64.330	58.571
	$100	79.380	80.599	78.195	75.635	81.461	76.902
	$1,000	147.611	145.889	141.247	144.467	162.264	161.948
	$10,000	227.811	224.776	224.131	220.082	275.678	265.153
Injury:	Death	605.782	796.820	880.331	807.290	805.377	630.688
	Hospitalization	195.723	252.370	295.077	282.044	263.447	216.529
	Treatment, no hospitalization	135.512	165.357	210.822	204.672	193.654	158.416
	Minor	25.033	26.572	31.368	33.335	35.389	36.419
Robbery $10 with:	Physical or verbal threat	110.653	133.155	162.020	163.094	154.323	110.466
	Weapon	116.830	138.916	171.254	180.440	171.418	137.313
Burglary	and theft of $10	43.054	54.559	67.357	75.408	74.654	69.403
Rape		498.783	616.571	655.859	558.461	570.802	445.499
Bombing	of building, 20 deaths	1143.74	1472.91	1615.98	1592.33	1706.06	1605.15

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 41 (Geometric means, by core-item-offense stimuli)

Northeast region: Age

Offense		18-19	20-24	25-34	35-49	50-64	65+
Theft:	$1*	18.030	17.947	20.606	21.330	20.606	17.989
	$10	32.991	30.386	35.325	34.980	38.358	30.462
	$50	48.810	46.670	52.239	61.077	57.720	56.764
	$100	68.273	75.189	69.251	66.071	73.514	68.824
	$1,000	126.735	122.000	125.167	128.196	153.972	141.129
	$10,000	208.840	191.886	191.706	197.148	240.719	211.438
Injury:	Death	583.781	631.364	968.048	746.210	759.568	522.990
	Hospitalization	176.213	194.321	300.351	290.566	255.095	216.866
	Treatment, no hospitalization	151.423	167.731	197.942	204.838	182.955	152.665
	Minor	18.657	26.218	32.454	37.355	38.862	38.795
Robbery $10 with:	Physical or verbal threat	111.286	101.844	166.642	150.235	170.000	100.520
	Weapon	105.172	127.550	145.610	175.099	161.735	119.720
Burglary	and theft of $10	41.713	39.854	64.517	70.846	71.521	61.831
Rape		508.319	511.579	680.602	537.133	568.883	430.154
Bombing	of building, 20 deaths	1026.499	1290.919	1529.578	1536.052	1556.166	1325.992

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 42 (Geometric means, by core-item-offense stimuli)

North Central region: Age

Offense		18-19	20- 24	25-34	35-49	50-64	65 +
Theft:	$1*	22.751	23.988	25.235	25.119	22.803	17.022
	$10	35.728	38.142	42.210	43.094	44.533	35.613
	$50	69.155	72.877	68.129	66.755	69.454	51.726
	$100	87.903	84.378	83.939	81.605	87.928	78.329
	$1,000	157.325	158.594	154.406	156.422	172.471	169.674
	$10,000	236.693	240.361	238.620	238.549	325.334	291.079
Injury:	Death	570.544	843.690	877.665	820.586	834.009	693.849
	Hospitalization	204.505	280.991	315.061	310.042	266.219	194.828
	Treatment, no hospitalization	129.909	171.161	222.466	224.116	192.712	151.605
	Minor	26.103	31.604	32.713	33.157	40.078	36.177
Robbery $10 with:							
	Physical or verbal threat	105.410	149.953	181.202	171.627	154.759	114.260
	Weapon	140.413	164.487	183.781	189.170	202.014	139.835
Burglary and theft of $10		55.958	62.136	74.730	84.494	84.801	63.237
Rape		500.395	649.811	623.924	635.367	579.075	425.144
Bombing of building, 20 deaths		1340.656	1599.162	1597.200	1604.815	1733.638	1709.799

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 43 (Geometric means, by core-item-offense stimuli)

South region: Age

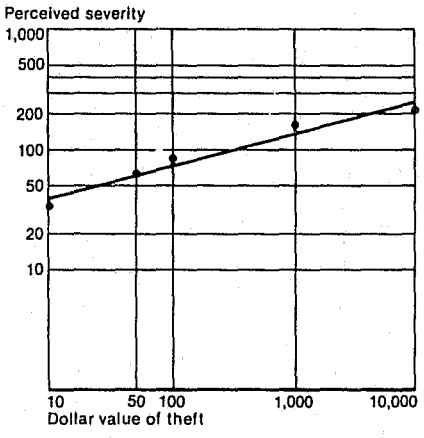
Offense		18-19	20-24	25-34	35-49	50-64	65 +
Theft:	$1*	21.777	25.527	22.336	25.410	21.528	19.634
	$10	35.049	41.063	36.952	42.068	39.453	35.003
	$50	69.237	65.734	63.174	66.575	68.301	60.495
	$100	81.785	78.215	79.500	81.901	83.825	78.817
	$1,000	158.234	140.852	137.628	146.110	156.914	158.976
	$10,000	238.446	208.411	226.797	226.425	261.293	251.310
Injury:	Death	529.144	749.295	692.792	733.719	666.721	551.682
	Hospitalization	210.998	218.272	251.573	234.162	240.598	186.793
	Treatment, no hospitalization	126.659	148.592	185.280	178.865	180.116	134.553
	Minor	27.612	25.575	28.191	30.424	30.692	30.027
Robbery $10 with:							
	Physical or verbal threat	104.405	124.634	136.006	141.049	125.857	104.035
	Weapon	106.029	112.547	161.750	172.572	146.191	121.826
Burglary and theft of $10		51.711	61.724	67.756	80.815	78.571	69.952
Rape		510.773	566.348	595.492	498.804	518.773	409.688
Bombing of building, 20 deaths		1062.214	1212.291	1406.964	1475.679	1590.704	1325.913

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

The geometric mean ratios displayed in table 46 suggest, however, that there are differences in the relative seriousness of injury offenses by age. Here, the oldest age group exhibits the highest ratio score, while the middle age group generally reports the lowest.

Figure 17
(Dollar value of theft vs. perceived severity)

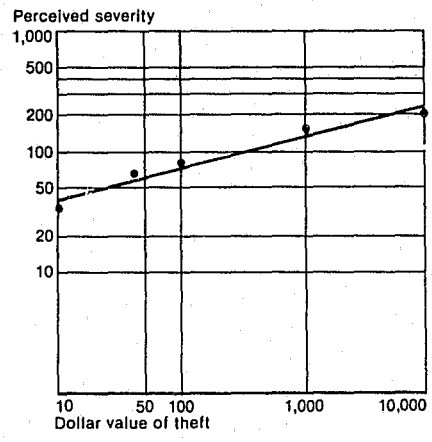
Age: 18-19 years



Line is plot of expected values
• = observed values

Figure 18
(Dollar value of theft vs. perceived severity)

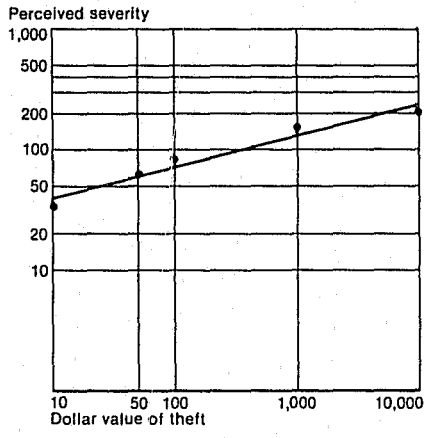
Age: 20-24 years



Line is plot of expected values
• = observed values

Figure 19
(Dollar value of theft vs. perceived severity)

Age: 25-34 years



Line is plot of expected values
• = observed values

Table 44 (Geometric means, by core-item-offense stimuli)

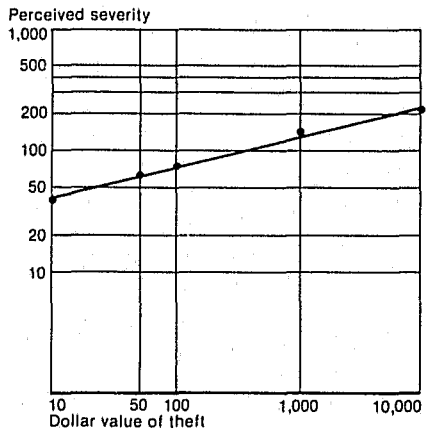
West region: Age

Offense		18-19	20-24	25-34	35-49	50-64	65+
Theft:	$1*	24.717	21.528	20.512	20.559	21.086	18.450
	$10	42.885	33.882	34.501	34.542	42.179	35.914
	$50	61.196	82.026	63.771	62.405	59.977	69.892
	$100	77.909	85.839	78.711	70.068	79.883	82.607
	$1,000	143.905	167.451	148.639	147.279	169.514	186.920
	$10,000	220.596	278.868	239.578	215.743	287.588	339.682
Injury:	Death	976.793	1046.347	1150.217	1035.587	1170.838	896.325
	Hospitalization	184.992	358.918	339.046	333.854	320.376	334.508
	Treatment, no hospitalization	141.148	183.558	263.578	227.122	241.385	234.737
	Minor	28.458	22.805	33.291	34.124	33.132	46.742
Robbery $10 with:	Physical or verbal threat	137.433	166.951	177.349	217.818	191.433	132.668
	Weapon	119.658	171.375	200.810	189.162	195.341	194.689
Burglary and theft of $10		50.281	65.095	71.568	81.759	79.635	88.777
Rape		457.102	836.442	788.843	600.418	666.130	579.015
Bombing of building, 20 deaths		1178.602	2076.894	2168.661	1887.486	2162.346	2625.728

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Figure 20
(Dollar value of theft vs. perceived severity)

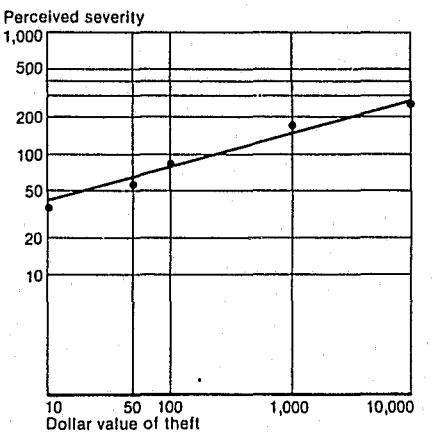
Age: 35-49 years



Line is plot of expected values
• = observed values

Figure 21
(Dollar value of theft vs. perceived severity)

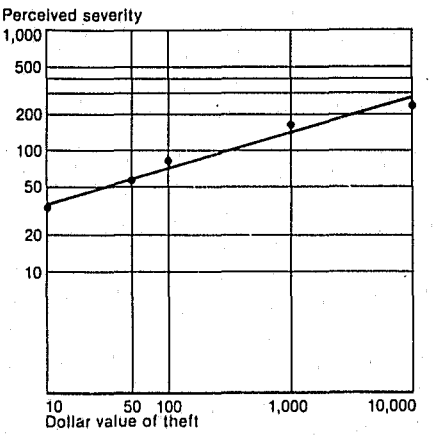
Age: 50-64 years



Line is plot of expected values
• = observed values

Figure 22
(Dollar value of theft vs. perceived severity)

Age: 65 years and over



Line is plot of expected values
• = observed values

Table 45 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by Census region and age

($Y = aX^b$)

Sample	Correlation	Constant (a)	10^a	Slope (b)
Total U.S.				
18-19	.992	1.331	21.429	.266
20-24	.991	1.354	22.594	.259
25-34	.995	1.348	22.284	.258
35-49	.995	1.370	23.442	.251
50-64	.998	1.342	21.979	.280
65+	.995	1.262	18.281	.300
Northeast				
18-19	.996	1.256	18.030	.272
20-24	.984	1.254	17.947	.267
25-34	.995	1.314	20.606	.249
35-49	.994	1.329	21.330	.248
50-64	.995	1.314	20.606	.274
65+	.990	1.255	17.989	.280
North Central				
18-19	.984	1.357	22.751	.267
20-24	.988	1.380	23.988	.261
25-34	.996	1.402	25.235	.251
35-49	.996	1.400	25.119	.252
50-64	1.000	1.358	22.803	.290
65+	.993	1.231	17.022	.316
South				
18-19	.987	1.338	21.777	.272
20-24	.994	1.407	25.527	.236
25-34	.995	1.349	22.336	.258
35-49	.996	1.405	25.410	.244
50-64	.996	1.333	21.528	.274
65+	.993	1.293	19.634	.287
West				
18-19	.996	1.393	24.717	.243
20-24	.979	1.333	21.528	.289
25-34	.992	1.312	20.512	.276
35-49	.990	1.313	20.559	.266
50-64	.996	1.324	21.086	.288
65+	.996	1.266	18.450	.324

Table 46 (Geometric mean ratios)

Twenty deaths by bombing to a single killing

(Total United States, by Census region and age)

Census region	Ratios
Total U.S.	
18-19	1.89
20-24	1.85
25-34	1.84
35-49	1.97
50-64	2.12
65+	2.54
Northeast	
18-19	1.76
20-24	2.04
25-34	1.58
35-49	2.06
50-64	2.05
65+	2.54
North Central	
18-19	2.35
20-24	1.90
25-34	1.82
35-49	1.96
50-64	2.08
65+	2.46
South	
18-19	2.01
20-24	1.62
25-34	2.03
35-49	2.01
50-64	2.39
65+	2.40
West	
18-19	1.21
20-24	1.98
25-34	1.88
35-49	1.82
50-64	1.85
65+	2.93

Sex

Although the geometric means indicate differences by sex, the differences are minimal. Females produce slightly higher magnitude values for theft offenses and for injury events that do not result in death. For a single death from an injury and 20 deaths from a bombing, males report higher perceived seriousness while females consider rape as somewhat more serious than do males (582 vs. 549).

These relatively minor differences are far outweighed by the power function data given in figures 23 and 24 and table 52. Figures 23 and 24 clearly indicate that the dollar value of theft vs. perceived severity conforms to the hypothesized power function. More important, the slopes found in table 52 are very nearly identical (.266 for males and .269 for females), which indicates that, although the two sexes begin and end at different points in their magnitude judgments, the range involved is almost exactly the same. The correlations near unity would also be expected with these data.

Examination of sex differences across the four census regions fails to alter the findings observed for the national data. Thus, females display generally higher magnitude values for theft offenses and nondeath injury offenses. The geometric mean ratios reported in tables 47 to 51 and 53 indicate only small differences in the relative seriousness of the two extreme injury cases.

The hypothesized power function is again supported for all of the regions. The association between dollar value and perceived seriousness is near unity in each instance, and the slopes were again found to be very nearly the same.

Table 47
(Geometric means, by core-item-offense stimuli)

National: Sex

Offense		Male	Female
Theft:	$1*	20.277	23.388
	$10	34.613	41.215
	$50	58.060	67.649
	$100	73.178	83.502
	$1,000	139.897	160.193
	$10,000	216.394	262.495
Injury:			
Death		783.892	772.943
Hospitalization		234.741	286.561
Treatment, no hospitalization		163.109	210.116
Minor		25.683	38.924
Robbery $10 with:			
Physical or verbal threat		144.057	145.448
Weapon		172.006	150.478
Burglary and theft of $10		70.459	65.376
Rape		549.221	582.199
Bombing of building, 20 deaths		1665.29	1502.19

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 48
(Geometric means, by core-item-offense stimuli)

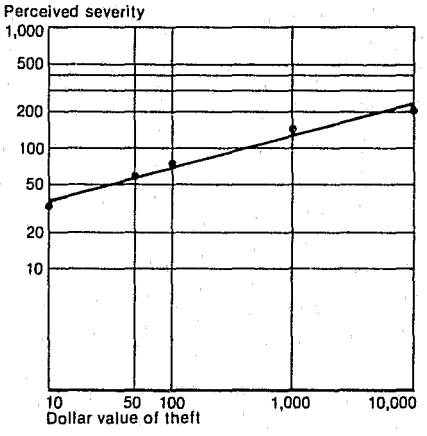
Northeast region: Sex

Offense		Male	Female
Theft:	$1*	17.782	22.130
	$10	31.097	37.976
	$50	46.786	63.812
	$100	63.926	75.823
	$1,000	121.269	146.701
	$10,000	181.425	232.636
Injury:			
Death		761.784	686.131
Hospitalization		215.795	289.745
Treatment, no hospitalization		159.269	204.472
Minor		27.017	40.627
Robbery $10 with:			
Physical or verbal threat		140.313	136.680
Weapon		153.644	140.847
Burglary and theft of $10		61.808	62.353
Rape		512.953	584.673
Bombing of building, 20 deaths		1476.762	1411.151

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Figure 23
(Dollar value of theft vs. perceived severity)

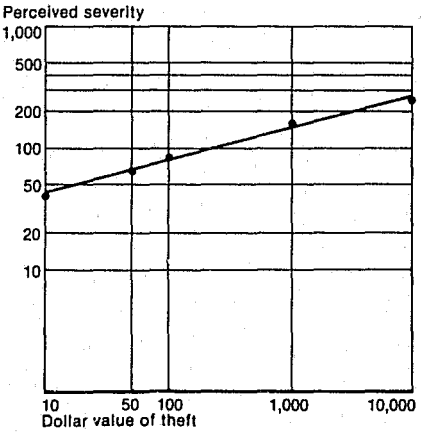
Sex: Male



Line is plot of expected values
• = observed values

Figure 24
(Dollar value of theft vs. perceived severity)

Sex: Female



Line is plot of expected values
• = observed values

Table 49
(Geometric means, by core-item-offense stimuli)

North Central region: Sex

Offense		Male	Female
Theft:	$1*	21.677	24.322
	$10	37.558	44.313
	$50	60.792	71.115
	$100	79.203	87.856
	$1,000	152.031	170.787
	$10,000	233.463	291.617
Injury:			
Death		817.636	781.323
Hospitalization		244.489	298.676
Treatment, no hospitalization		170.935	210.628
Minor		28.103	40.000
Robbery $10 with:			
Physical or verbal threat		152.836	151.467
Weapon		187.284	166.041
Burglary and theft of $10		72.840	75.232
Rape		581.536	573.347
Bombing of building, 20 deaths		1783.237	1494.929

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 50
(Geometric means, by core-item-offense stimuli)

South region: Sex

Offense		Male	Female
Theft:	$1*	21.979	24.266
	$10	35.424	42.410
	$50	63.764	66.573
	$100	77.363	84.024
	$1,000	140.885	154.973
	$10,000	216.782	253.932
Injury:			
Death		669.482	670.215
Hospitalization		213.363	240.861
Treatment, no hospitalization		144.774	189.411
Minor		22.136	36.037
Robbery $10 with:			
Physical or verbal threat		121.541	131.580
Weapon		157.567	133.239
Burglary and theft of $10		77.117	67.391
Rape		497.365	535.453
Bombing of building, 20 deaths		1471.786	1335.435

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 51
(Geometric means, by core-item-offense stimuli)

West region: Sex

Offense		Male	Female
Theft:	$1*	18.923	22.284
	$10	33.756	39.108
	$50	60.998	69.813
	$100	69.908	86.744
	$1,000	146.139	173.032
	$10,000	240.641	276.356
Injury:			
Death		1005.275	1127.200
Hospitalization		287.556	363.969
Treatment, no hospitalization		195.279	257.892
Minor		26.737	39.673
Robbery $10 with:			
Physical or verbal threat		183.309	172.355
Weapon		198.999	176.647
Burglary and theft of $10		77.663	73.531
Rape		655.739	682.676
Bombing of building, 20 deaths		2155.756	2011.412

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 52 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by Census region and sex

($Y = aX^b$)

Sample	Correlation	Constant (a)	10^a	Slope (b)
Total U.S.				
Male	.994	1.307	20.277	.266
Female	.997	1.369	23.388	.269
Northeast				
Male	.992	1.350	17.782	.262
Female	.996	1.345	22.130	.263
North Central				
Male	.994	1.336	21.677	.267
Female	.998	1.386	24.322	.274
South				
Male	.991	1.342	21.979	.258
Female	.998	1.385	24.266	.260
West				
Male	.996	1.277	18.923	.284
Female	.994	1.348	22.284	.283

Table 53 (Geometric mean ratios)

Twenty deaths by bombing to a single killing

(Total United States, by Census region and sex)

Census region	Ratios
Total United States	
Male	2.12
Female	1.94
Northeast	
Male	1.94
Female	2.06
North Central	
Male	2.18
Female	1.91
South	
Male	2.20
Female	1.99
West	
Male	2.14
Female	1.78

Occupation

The geometric mean magnitude values for the total United States and the four census regions (tables 54 to 58) reveal no major differences by occupation for the theft-offense stimuli. The perceptions of the seriousness of a $1 theft are very similar and increase similarly across occupational categories as the value of theft increases. The only exception occurs for the respondents in the armed forces from the Northeast and North Central regions who did differ from their counterparts in the other occupational categories. These differences are not disturbing, however, because the sample size for armed forces respondents appears to be insufficient for the geometric means to serve as a reliable measure with which to typify the category.

As expected, therefore, figures 25 to 30 illustrate the power function of money obtained for the six occupational groups at the national level. Table 59 displays the very high correlations between dollar value and perceived seriousness for these occupational categories. The slope values indicate that, at the national level and for the census regions, the various occupational categories have similar sensitivity to the changes in the dollar value of theft. This finding characterizes all groups with the exception of the armed forces category, which differs the most in the Northeast and North Central regions and somewhat less in the South and West. Again, we suggest that these departures are a function of the sample size, which should be considered too small for statistically reliable results.

The injury-offense stimuli, however, did elicit substantial differences in the perception of severity between white-collar respondents and the other occupational categories at the national and census region levels. For example, the geometric mean for a single death by injury is 1025 for white-collar subjects compared to 655 for blue-collar subjects. For a bombing which causes 20 deaths, the difference between these two categories is even more appreciable: 1955 vs. 1418. Similar comparisons can be made for the regions as well.

Although there are differences in the absolute magnitudes the respondents assign to serious injury offenses, the proportionality between one and 20 deaths is maintained, as we noted with other demographic characteristics. That is, the relative distances between offenses tend to approximate one another closely. Table 60 presents these ratios for the occupation categories for the Nation and the four census regions. The ratio is again comparable to that observed for all sub-

Table 54 (Geometric means, by core-item-offense stimuli)

National: Occupation

Offense		White collar	Blue collar	Farm	Service	Armed forces	Not available
Theft:	$1*	20.559	23.442	18.793	21.827	21.827	20.845
	$10	36.054	36.861	32.601	42.733	34.632	37.906
	$50	64.170	63.676	56.997	65.165	68.365	59.782
	$100	78.711	79.444	71.298	80.118	85.017	76.518
	$1,000	153.121	146.011	142.851	146.429	151.235	152.663
	$10,000	254.421	221.675	220.946	221.087	238.637	245.610
Injury:	Death	1024.70	655.47	552.74	615.05	956.27	672.38
	Hospitalization	338.640	219.579	161.594	217.968	414.615	227.822
	Treatment, no hospitalization	237.674	147.321	125.239	162.953	215.818	172.580
	Minor	32.340	28.006	23.166	33.777	19.876	38.475
Robbery $10 with:							
	Physical or verbal threat	179.611	127.659	105.731	134.380	202.462	119.903
	Weapon	185.219	157.215	138.311	136.509	210.357	134.206
Burglary and theft of $10		72.082	70.267	47.282	59.774	90.131	63.388
Rape		722.232	491.275	458.017	471.203	812.636	469.152
Bombing of building,							
	20 deaths	1954.90	1418.37	1151.86	1210.51	2031.82	1413.68

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 55 (Geometric means, by core-item-offense stimuli)

Northeast region: Occupation

Offense		White collar	Blue collar	Farm	Service	Armed forces	Not available
Theft:	$1*	19.861	19.999	22.962	21.528	38.548	19.055
	$10	34.853	34.739	36.819	37.113	70.972	31.798
	$50	59.060	52.979	47.843	49.890	68.085	54.497
	$100	71.369	69.232	60.169	71.736	39.124	68.543
	$1,000	142.146	127.707	129.941	124.446	112.069	132.919
	$10,000	227.193	200.122	137.199	186.623	142.005	195.721
Injury:	Death	1000.556	627.181	708.746	586.108	1321.914	528.970
	Hospitalization	308.728	216.781	161.408	198.079	204.696	241.846
	Treatment, no hospitalization	224.790	160.504	142.077	148.895	154.326	159.686
	Minor	33.238	29.421	43.930	34.136	13.494	40.382
Robbery $10 with:							
	Physical or verbal threat	179.100	127.982	128.752	129.781	185.247	102.868
	Weapon	171.491	143.598	188.522	130.183	106.124	120.706
Burglary and theft of $10		64.424	61.360	60.963	58.145	70.162	61.009
Rape		670.937	477.982	411.243	521.539	2314.189	453.863
Bombing of building,							
	20 deaths	1796.113	1346.307	1053.182	1127.702	1920.230	1210.422

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 56 (Geometric means, by core-item-offense stimuli)

North Central region: Occupation

Offense		White collar	Blue collar	Farm	Service	Armed forces	Not available
Theft:	$1*	20.654	27.102	20.464	26.853	3.483	21.380
	$10	37.816	43.011	38.172	44.887	7.833	42.450
	$50	62.492	75.759	58.232	72.395	19.374	60.481
	$100	81.956	83.121	88.733	88.792	74.353	84.014
	$1,000	159.305	160.510	172.097	160.749	120.226	166.188
	$10,000	270.666	231.763	272.313	252.405	273.638	295.727
Injury:	Death	930.180	725.832	747.124	654.591	605.237	772.323
	Hospitalization	340.189	244.426	208.312	232.124	384914.580	224.412
	Treatment, no hospitalization	238.973	147.824	182.750	176.969	247.429	184.898
	Minor	33.540	32.056	24.016	39.059	13.065	37.864
Robbery $10 with:							
	Physical or verbal threat	176.227	147.191	116.572	148.895	52.970	127.269
	Weapon	191.885	186.445	163.957	154.588	136.034	147.975
Burglary and theft of $10		75.343	83.797	49.190	69.371	70.596	68.212
Rape		692.936	536.645	644.398	463.462	17190.211	478.035
Bombing of building, 20 deaths		1868.807	1535.268	1468.074	1321.702	7104.752	1523.433

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 57 (Geometric means, by core-item-offense stimuli)

South region: Occupation

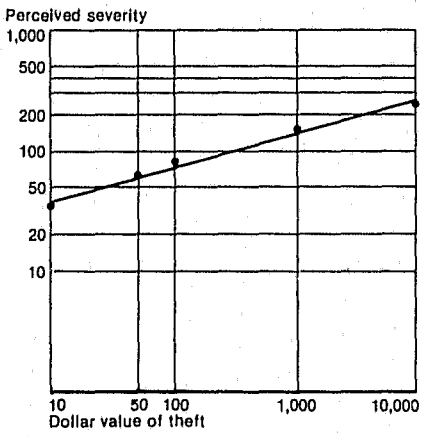
Offense		White collar	Blue collar	Farm	Service	Armed forces	Not available
Theft:	$1*	22.284	23.442	15.704	28.576	19.543	22.699
	$10	37.949	37.443	28.148	46.511	34.727	39.815
	$50	68.955	60.263	52.292	73.397	65.566	62.686
	$100	84.107	81.925	59.507	80.440	88.608	76.467
	$1,000	154.082	139.676	119.923	146.760	165.414	152.234
	$10,000	262.133	204.111	211.493	226.996	290.411	233.676
Injury:	Death	989.018	534.713	368.799	470.069	1024.607	570.814
	Hospitalization	323.194	176.840	98.844	222.651	228.204	188.502
	Treatment, no hospitalization	230.016	123.315	90.107	149.424	283.338	146.678
	Minor	29.811	23.568	22.674	29.846	23.214	36.551
Robbery $10 with:							
	Physical or verbal threat	166.985	97.459	84.571	114.319	225.443	114.828
	Weapon	175.367	136.956	113.445	108.323	218.565	120.950
Burglary and theft of $10		82.453	65.747	52.011	72.610	93.248	62.897
Rape		744.430	401.295	315.049	439.000	814.330	411.205
Bombing of building, 20 deaths		1831.537	1218.597	828.219	1061.204	1836.862	1243.293

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

jects: white-collar respondents as well as non-white-collar subjects generally perceive a bombing to be twice as serious as a single death by injury.

Figure 25
(Dollar value of theft vs. perceived severity)

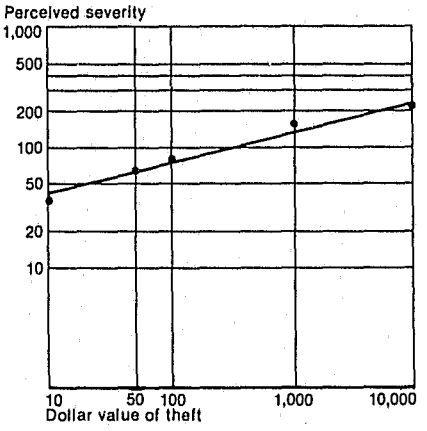
Occupation: White collar



Line is plot of expected values
• = observed values

Figure 26
(Dollar value of theft vs. perceived severity)

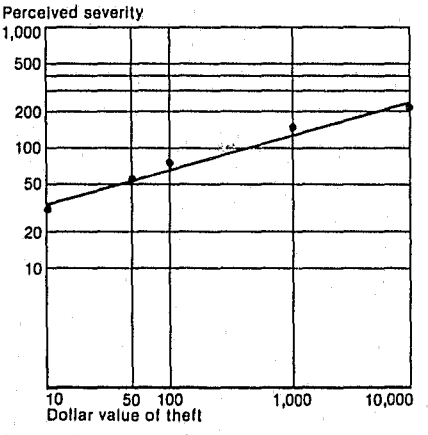
Occupation: Blue collar



Line is plot of expected values
• = observed values

Figure 27
(Dollar value of theft vs. perceived severity)

Occupation: Farm



Line is plot of expected values
• = observed values

Table 58 (Geometric means, by core-item-offense stimuli)

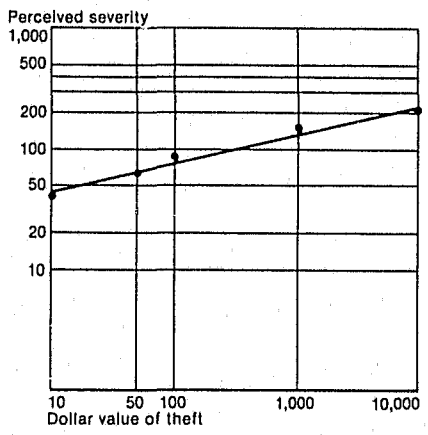
West region: Occupation

Offense		White collar	Blue collar	Farm	Service	Armed forces	Not available
Theft:	$1*	18.923	22.131	21.878	24.044	27.227	19.814
	$10	32.598	40.581	30.063	40.544	35.316	38.254
	$50	65.823	67.592	72.074	63.114	81.029	62.026
	$100	75.728	83.461	65.425	78.761	93.976	78.281
	$1,000	157.071	162.116	138.877	157.369	146.871	166.524
	$10,000	255.446	285.199	170.402	218.869	199.898	285.246
Injury:	Death	1266.880	854.888	781.243	972.305	831.880	1051.505
	Hospitalization	401.924	283.111	219.181	216.935	422.721	305.331
	Treatment, no hospitalization	264.437	190.109	98.407	186.961	153.360	233.840
	Minor	33.780	28.637	16.265	33.634	19.604	40.164
Robbery $10 with:							
	Physical or verbal threat	206.521	165.971	150.041	160.952	198.765	149.090
	Weapon	209.112	171.830	117.523	182.984	238.267	163.717
Burglary and theft of $10		85.085	75.909	68.560	54.563	91.322	67.563
Rape		795.891	660.204	496.348	479.289	384.671	603.360
Bombing of building, 20 deaths		2519.003	1788.548	1444.341	1483.927	1951.132	2016.491

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Figure 28
(Dollar value of theft vs. perceived severity)

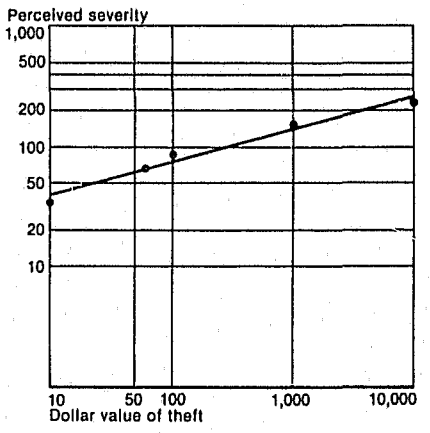
Occupation: Service



Line is plot of expected values
• = observed values

Figure 29
(Dollar value of theft vs. perceived severity)

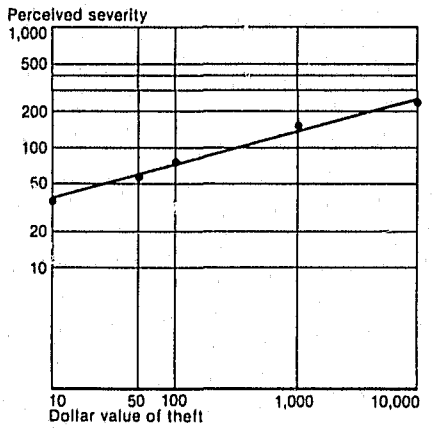
Occupation: Armed forces



Line is plot of expected values
• = observed values

Figure 30
(Dollar value of theft vs. perceived severity)

Occupation: Not available



Line is plot of expected values
• = observed values

Table 59 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by Census region and occupation

($Y = aX^b$)

Sample	Correlation	Constant (a)	10^a	Slope (b)
Total U.S.				
White collar	.995	1.313	20.559	.231
Blue collar	.994	1.370	23.442	.252
Farm	.993	1.274	18.793	.278
Service	.996	1.408	25.585	.241
Armed forces	.986	1.339	21.827	.271
Not available	.997	1.319	20.845	.275
Northeast				
White collar	.996	1.298	19.861	.272
Blue collar	.996	1.301	19.999	.257
Farm	.961	1.361	22.962	.211
Service	.991	1.333	21.528	.242
Armed forces	.719	1.586	38.548	.132
Not available	.991	1.280	19.055	.264
North Central				
White collar	.997	1.315	20.654	.286
Blue collar	.990	1.433	27.102	.242
Farm	.990	1.311	20.464	.291
Service	.998	1.429	26.853	.250
Armed forces	.949	.542	3.483	.501
Not available	.997	1.330	21.380	.289
South				
White collar	.995	1.348	22.284	.274
Blue collar	.988	1.370	23.442	.245
Farm	.996	1.196	15.704	.288
Service	.997	1.456	28.573	.229
Armed forces	.993	1.291	19.543	.302
Not available	.996	1.356	22.699	.261
West				
White collar	.991	1.277	18.923	.293
Blue collar	.999	1.345	22.131	.282
Farm	.951	1.340	21.878	.242
Service	.990	1.381	24.044	.251
Armed forces	.952	1.435	27.227	.233
Not available	.998	1.297	19.815	.296

Table 60 (Geometric mean ratios)

Twenty deaths by bombing to a single killing

(Total United States, by Census region and occupation)

Census region	Ratios
Total United States	
White collar	1.91
Blue collar	2.16
Farm	2.08
Service	1.97
Armed forces	2.12
Not available	2.10
Northeast	
White collar	1.80
Blue collar	2.15
Farm	1.49
Service	1.92
Armed forces	1.45
Not available	2.29
North Central	
White collar	2.01
Blue collar	2.12
Farm	1.96
Service	2.02
Armed forces	11.74
Not available	1.97
South	
White collar	1.85
Blue collar	2.28
Farm	2.24
Service	2.26
Armed forces	1.79
Not available	2.18
West	
White collar	1.99
Blue collar	2.09
Farm	1.85
Service	1.53
Armed forces	2.34
Not available	1.92

Income

The perception of the seriousness of various dollar values of theft does not differ markedly for the total United States or the census regions by the family income of the respondent (tables 61 to 65). Differences in the geometric means for the theft-offense stimuli are minimal and do not follow a consistent pattern. The relationship between the logged values of theft and perceived severity is observed to be linear as required by the power function assumption (see figures 31 to 37). Additionally, the observed correlations, which generally fall in the .99 area, attest to the strong linear fit. The slope values are found to be within a narrow range of one another for the income groups, thus signifying similar ranges of magnitude values.

For serious injury offenses, variation does exist by income category at the national level in the direction of low-income groups producing lower mean scores. For a single death by injury, those earning over $25,000 generate a mean 2.5 times that of the under-$3,000 income group. The difference in absolute numerical values is approximately the same for other injury-related offenses. The computed ratios (table 67) for a single to 20 deaths again illustrate the proportionality between serious injury offenses. The relative spread between geometric mean values is greatest among those in the under-$3,000 income group and lowest in the over-$25,000 income group. Thus, while there are differences in the magnitudes respondents assign, again they appear proportional across different core-item offenses.

The relationship reported above for injury offenses in the national estimates appears to hold for each of the census regions. For example, the over-$25,000 income group produces a geometric mean for a single death by injury in the Northeast, North Central, and South two to three times higher than that for the lowest income category. Only in the West does the geometric mean depart from the observed relationship between income and the absolute values respondents assign to serious injury offenses.

These divergent absolute values for the regions do not greatly affect the repeated finding that relative judgments of offense severity are similar. The ratios reported in table 67 are shown to be close to the finding observed for other demographic factors that the bombing event is perceived to be twice as serious as a single death by injury.

Table 61 (Geometric means, by core-item-offense stimuli)

National: Income

Offense		Under $3,000	$3,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-24,999	$25,000+	Not available
Theft:	$1*	18.281	22.439	23.823	23.550	21.627	18.923	22.387
	$10	31.402	38.788	42.815	40.576	36.871	32.891	38.290
	$50	49.270	62.744	63.539	67.982	65.304	58.863	61.179
	$100	65.634	73.549	82.410	84.636	80.426	74.582	79.584
	$1,000	128.770	144.110	155.006	159.323	155.347	141.624	149.426
	$10,000	185.084	225.840	252.443	257.308	250.500	235.099	228.615
Injury:	Death	478.70	601.68	718.00	743.42	910.20	1176.49	771.24
	Hospitalization	161.327	213.044	230.593	273.936	314.024	335.487	249.767
	Treatment, no hospitalization	115.466	143.969	179.380	201.091	214.398	244.941	180.730
	Minor	25.899	31.783	33.747	33.866	33.784	28.629	32.129
Robbery $10 with:	Physical or verbal threat	84.982	114.723	140.525	152.068	167.714	192.231	147.818
	Weapon	101.151	122.822	151.289	174.161	182.999	203.288	167.132
Burglary	and theft of $10	46.216	63.770	59.586	71.545	73.808	73.612	68.403
Rape		350.609	436.936	521.946	610.000	644.956	814.52	554.100
Bombing of building,	20 deaths	1013.52	1271.64	1454.62	1640.81	1745.70	2167.29	1687.92

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 62 (Geometric means, by core-item-offense stimuli)

Northeast region: Income

Offense		Under $3,000	$3,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-24,999	$25,000+	Not available
Theft:	$1*	16.520	19.364	19.231	22.182	20.606	17.418	19.815
	$10	30.194	33.672	34.659	37.567	35.709	30.443	32.661
	$50	48.767	50.871	49.121	61.649	58.698	52.974	53.393
	$100	60.209	60.261	70.511	81.930	72.330	64.232	69.396
	$1,000	120.377	124.871	133.542	145.040	141.311	129.531	124.499
	$10,000	201.099	179.311	202.659	232.595	219.383	204.014	187.967
Injury:	Death	347.535	570.548	625.560	751.755	960.921	1002.765	581.171
	Hospitalization	172.592	230.322	200.357	266.697	290.297	304.876	226.179
	Treatment, no hospitalization	150.282	132.385	167.916	204.690	199.979	239.018	161.062
	Minor	23.211	33.890	33.768	38.633	35.212	30.106	31.370
Robbery $10 with:	Physical or verbal threat	65.164	110.921	129.164	149.441	169.776	169.013	133.292
	Weapon	110.890	113.574	126.014	164.940	158.462	200.504	132.257
Burglary	and theft of $10	42.924	58.568	48.433	66.775	66.294	71.851	62.035
Rape		338.909	427.075	429.764	654.865	635.987	735.307	451.749
Bombing of building,	20 deaths	915.653	1221.370	1264.886	1502.550	1593.694	2030.747	1307.292

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 63 (Geometric means, by core-item-offense stimuli)

North Central region: Income

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	18.967	26.303	23.496	23.714	22.699	18.793	24.210
	$10	33.865	46.247	44.735	42.004	39.529	34.058	42.863
	$50	50.173	70.071	62.368	69.990	66.513	61.242	67.185
	$100	70.219	82.219	84.603	88.394	83.867	83.168	82.847
	$1,000	147.143	163.952	159.184	164.746	161.344	157.931	165.141
	$10,000	201.282	252.359	275.622	280.742	258.258	276.219	256.120
Injury:	Death	587.078	710.967	680.706	746.993	827.384	1283.937	796.709
	Hospitalization	208.888	220.320	254.340	289.566	310.850	325.638	227.971
	Treatment, no hospitalization	122.971	151.577	172.658	213.540	206.560	238.798	192.155
	Minor	28.019	37.392	32.394	32.381	35.522	31.510	37.562
Robbery $10 with:								
	Physical or verbal threat	102.933	133.145	143.295	150.887	169.327	194.480	141.688
	Weapon	126.424	143.510	153.403	186.776	196.591	204.703	183.31
Burglary								
	and theft of $10	58.986	69.725	65.474	80.639	74.505	78.008	78.76
Rape		391.053	484.672	557.546	553.705	648.792	828.173	525.14
Bombing of building,								
	20 deaths	1341.048	1470.344	1357.454	1644.024	1685.059	2113.837	1659.22

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 64 (Geometric means, by core-item-offense stimuli)

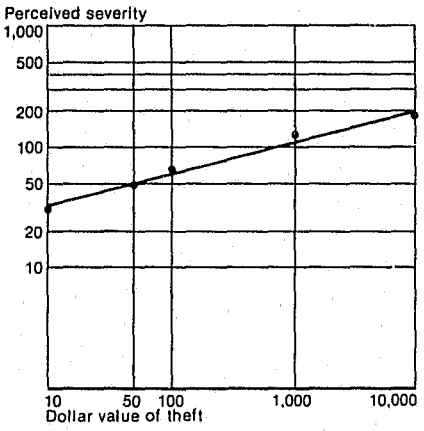
South region: Income

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	19.143	22.594	26.182	24.660	22.856	20.893	25.004
	$10	31.309	36.936	44.975	41.574	39.541	34.885	41.051
	$50	46.832	64.965	72.125	69.881	66.272	64.325	66.759
	$100	66.920	75.648	87.222	82.399	87.586	71.157	91.948
	$1,000	122.844	138.117	158.080	160.702	154.043	136.219	159.361
	$10,000	163.614	219.530	263.327	245.029	262.860	224.136	240.907
Injury:	Death	406.527	482.366	610.764	690.723	842.884	1321.438	719.780
	Hospitalization	126.080	186.986	200.753	252.493	270.625	325.272	272.346
	Treatment, no hospitalization	92.650	125.163	165.867	167.384	218.742	232.877	193.343
	Minor	27.048	26.479	35.452	31.017	30.204	23.909	29.836
Robbery $10 with:								
	Physical or verbal threat	84.090	97.114	118.243	133.583	147.899	200.879	143.290
	Weapon	86.759	104.786	157.892	155.978	166.959	201.198	174.190
Burglary								
	and theft of $10	46.869	67.460	75.913	70.890	76.984	90.481	76.90
Rape		300.187	375.807	486.839	546.539	613.154	943.559	624.79
Bombing of building,								
	20 deaths	766.600	1027.055	1351.422	1536.952	1663.757	2087.694	1859.69

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Figure 31
(Dollar value of theft vs. perceived severity)

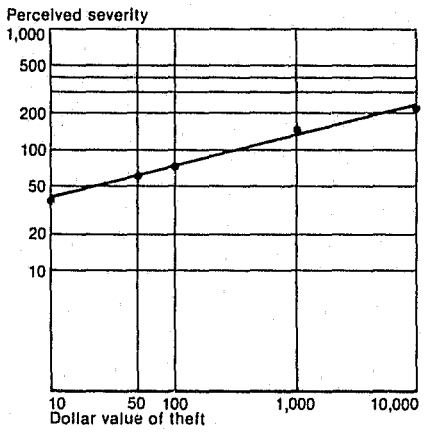
Income level: Under $3,000



Line is plot of expected values
• = observed values

Figure 32
(Dollar value of theft vs. perceived severity)

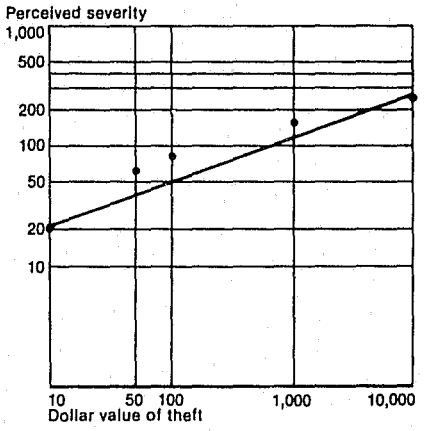
Income level: $3,000–$7,499



Line is plot of expected values
• = observed values

Figure 33
(Dollar value of theft vs. perceived severity)

Income level: $7,500–$9,999



Line is plot of expected values
• = observed values

Table 65 (Geometric means, by core-item-offense stimuli)

West region: Income

Offense	Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft: $1*	17.298	20.989	26.424	23.227	18.880	18.408	19.543
$10	29.561	39.716	47.524	40.781	31.798	31.445	37.240
$50	57.558	62.988	70.159	70.734	70.675	56.746	57.097
$100	61.142	74.662	85.887	86.480	76.566	81.005	72.275
$1,000	130.278	154.925	172.993	168.552	166.379	141.727	157.746
$10,000	206.819	267.793	266.517	277.261	263.470	237.199	249.063
Injury: Death	840.939	805.173	1245.226	1185.274	1076.200	1056.569	1455.122
Hospitalization	213.177	243.593	317.594	299.050	426.521	403.437	293.304
Treatment, no hospitalization	140.749	198.378	242.407	247.164	239.207	276.173	178.282
Minor	22.511	33.681	32.577	35.152	34.581	30.328	30.539
Robbery $10 with: Physical or verbal threat	83.459	137.152	210.158	196.200	191.095	206.297	206.973
Weapon	100.303	147.178	171.702	199.107	220.353	207.811	205.218
Burglary and theft of $10	52.130	63.641	71.777	75.800	93.176	76.582	68.17
Rape	505.275	525.481	690.007	790.525	695.921	732.985	682.12
Bombing of building, 20 deaths	1728.216	1677.839	2218.070	2051.060	2175.892	2542.281	2304.94

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 66 (Regression constants and slopes)

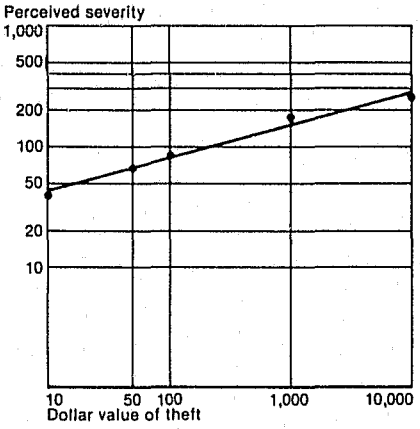
Dollar value of theft vs. perceived severity, by Census region and income

($Y = aX^b$)

Sample	Correlation	Constant (a)	10^a	Slope (b)
Total U.S.				
Under $3,000	.990	1.262	18.281	.263
$3,000–7,499	.997	1.351	22.439	.257
$7,500–9,999	.998	1.377	23.823	.261
$10,000–14,999	.996	1.372	23.550	.267
$15,000–24,999	.994	1.335	21.627	.276
$25,000+	.994	1.277	18.923	.282
Not available	.994	1.350	22.387	.261
Northeast				
Under $3,000	.998	1.218	16.520	.277
$3,000–7,499	.993	1.287	19.364	.250
$7,500–9,999	.991	1.284	19.231	.264
$10,000–14,999	.994	1.346	22.182	.263
$15,000–24,999	.995	1.314	20.606	.265
$25,000+	.994	1.241	17.418	.276
Not available	.992	1.297	19.815	.253
North Central				
Under $3,000	.986	1.278	18.967	.270
$3,000–7,499	.997	1.420	26.303	.251
$7,500–9,999	.997	1.371	23.496	.270
$10,000–14,999	.997	1.275	23.714	.274
$15,000–24,999	.995	1.356	22.699	.272
$25,000+	.994	1.274	18.793	.300
Not available	.996	1.384	24.210	.264
South				
Under $3,000	.982	1.282	19.143	.247
$3,000–7,499	.994	1.354	22.594	.254
$7,500–9,999	.998	1.418	26.182	.254
$10,000–14,999	.994	1.392	24.660	.258
$15,000–24,999	.996	1.359	22.856	.271
$25,000+	.994	1.320	20.893	.264
Not available	.990	1.398	25.004	.256
West				
Under $3,000	.991	1.238	17.298	.278
$3,000–7,499	.999	1.322	20.989	.280
$7,500–9,999	.996	1.422	26.424	.257
$10,000–14,999	.996	1.366	23.227	.276
$15,000–24,999	.986	1.276	18.880	.299
$25,000+	.989	1.265	18.408	.287
Not available	.995	1.291	19.543	.284

Figure 34
(Dollar value of theft vs. perceived severity)

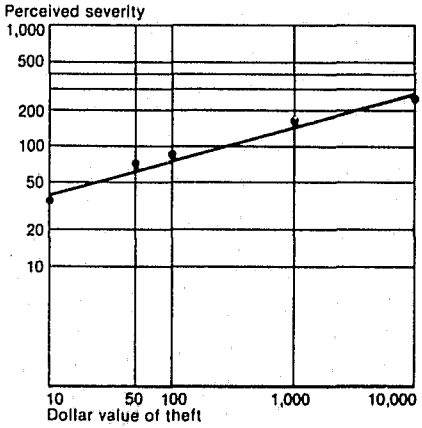
Income level: $10,000–$14,999



Line is plot of expected values
• = observed values

Figure 35
(Dollar value of theft vs. perceived severity)

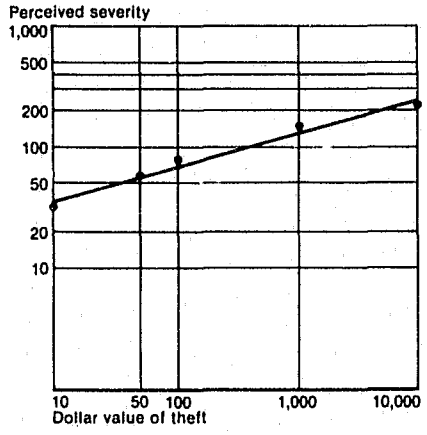
Income level: $15,000–$24,999



Line is plot of expected values
• = observed values

Figure 36
(Dollar value of theft vs. perceived severity)

Income level: $25,000 and over



Line is plot of expected values
• = observed values

Table 67 (Geometric mean ratios)

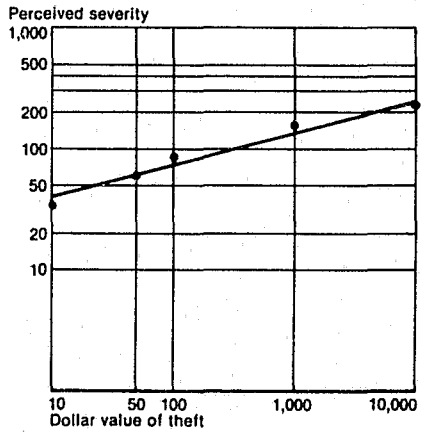
Twenty deaths by bombing to a single killing

(Total United States, by Census region and income)

Census region and income	Ratio
Total U.S.	
Under $3,000	2.12
3,000–7,499	2.11
7,500–9,999	2.03
10,000–14,999	2.07
15,000–24,999	1.92
25,000+	1.84
Not available	
Northeast	
Under $3,000	2.63
3,000–7,499	2.14
7,500–9,999	2.02
10,000–14,999	2.00
15,000–24,999	1.66
25,000+	2.02
Not available	2.25
North Central	
Under $3,000	2.28
3,000–7,499	2.07
7,500–9,999	1.99
10,000–14,999	2.20
15,000–24,999	2.04
25,000+	1.65
Not available	2.08
South	
Under $3,000	1.88
3,000–4,999	2.13
7,500–9,999	2.21
10,000–14,999	2.22
15,000–24,999	1.97
25,000+	1.58
Not available	2.58
West	
Under $3,000	2.06
3,000–7,499	2.08
7,500–9,999	1.78
10,000–14,999	1.73
15,000–24,999	2.02
25,000+	2.41
Not available	1.58

Figure 37
(Dollar value of theft vs. perceived severity)

Income level: Not available



Line is plot of expected values
• = observed values

Education

Differences in the perceived severity of theft-related offenses are found for the national-level data by respondents' education. Respondents who never attended school consistently report geometric means that are lower than those for the other categories of education. The size of the differences increases as the theft offense becomes more serious. Although not alike, the magnitude scores across the other educational levels are less dissimilar. The exception to be noted pertains to the "not available" category which has so few cases that we will ignore this group for comparative purposes.

The national-level magnitude score differences do not affect the power function of money. The fact that all education levels perceive seriousness as a power function of dollar value is shown by the straight lines displayed in figures 38 to 42. With the exception of the "not available" category, the correlations are all about .99, thus suggesting the linear relationship (table 73). However, the regression slopes indicate that as education increases there is an increase in the sensitivity to changes in the dollar value of theft as it relates to perceived seriousness. The beta for respondents with no formal education is .216, compared to .293 for those with more than a high school education. The differences in these slopes and those for some school and high school levels appear to be functions of the magnitude estimates for theft of $10,000 which exhibits a range of almost 80 points from the lowest to highest education levels.

At the national level, differences in the injury-offense geometric mean values by education exist particularly for more serious offenses. For example, a single death by injury produces geometric mean values of 370 for respondents without any formal education, 513 for those with first through 11th grade completed, 758 for subjects with only high school completed, and 1127 for those with more than a high school education. Similar differences in geometric means can be observed for other injury offenses: the bombing of a building, rape, and injury resulting in the victim's hospitalization.

Differences in the range of numbers for injury-related offenses can again be illustrated with the geometric ratios for 20 deaths to a single death. For respondents who have a high school or better education, the ratio values are 2.03 and 1.93, respectively (table 74). But for subjects who never attended kindergarten, the ratio is much greater, 2.58. The "not available" ratio is 5.13, further indicating the disproportionate range of values for this category.

The only anomalies that occur in the national-level distribution are for the

Table 68 (Geometric means, by core-item-offense stimuli)

National: Educational level

Offense		Never attended kindergarten	Grades 1-11	Grade 12	Grades >12	Not available
Theft:	$1*	23.605	23.659	24.119	17.620	10.000
	$10	38.633	40.006	43.904	30.846	32.512
	$50	51.014	61.798	69.117	58.075	20.277
	$100	65.707	73.482	87.400	73.701	43.232
	$1,000	114.034	141.930	162.502	144.703	106.384
	$10,000	159.593	210.517	263.181	239.341	217.324
Injury:	Death	370.38	513.13	757.55	1124.60	239.59
	Hospitalization	159.863	184.920	270.344	337.498	549.014
	Treatment, no hospitalization	142.741	129.354	196.445	232.888	204.803
	Minor	31.299	32.441	34.243	29.852	20.706
Robbery $10 with:						
Physical or verbal threat		118.158	101.174	156.283	176.915	78.469
Weapon		154.499	118.898	101.459	196.648	356.327
Burglary and theft of $10		58.467	45.416	68.136	69.203	—
Rape		247.370	362.189	615.041	741.057	349.318
Bombing of building, 20 deaths		966.49	1097.35	1539.53	2170.45	1272.64

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 69 (Geometric means, by core-item-offense stimuli)

Northeast region: Educational level

Offense		Never attended kindergarten	Grades 1-11	Grade 12	Grades >12	Not available
Theft:	$1*	33.266	22.387	22.080	15.959	6.637
	$10	38.697	36.906	38.157	28.833	10.000
	$50	65.296	54.731	60.114	50.011	58.760
	$100	61.577	68.734	76.119	64.748	58.389
	$1,000	93.795	127.425	143.033	130.536	149.889
	$10,000	101.804	180.358	224.443	212.534	255.561
Injury:	Death	272.808	447.932	713.356	1092.690	850.000
	Hospitalization	163.320	183.814	264.683	316.219	331.291
	Treatment, no hospitalization	133.202	132.370	192.353	217.560	107.935
	Minor	32.647	37.049	34.099	31.094	123.091
Robbery $10 with:						
Physical or verbal threat		127.161	100.556	149.795	166.629	400.000
Weapon		123.084	117.050	138.318	188.544	153.374
Burglary and theft of $10		47.563	59.015	65.192	61.609	21.645
Rape		202.598	357.928	593.850	710.819	935.753
Bombing of building, 20 deaths		839.197	976.892	1435.228	2002.666	1094.163

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 70 (Geometric means, by core-item-offense stimuli)

North Central region: Educational level

Offense	Never attended kindergarten	Grades 1–11	Grade 12	Grades >12	Not available
Theft: $1*	20.184	25.645	27.102	17.378	6.012
$10	42.485	45.435	48.551	30.408	18.263
$50	75.234	67.197	72.776	57.800	35.331
$100	78.238	76.850	90.785	80.560	103.660
$1,000	102.978	155.825	172.921	151.615	418.579
$10,000	374.725	239.373	281.962	253.636	609.464
Injury: Death	468.381	597.644	770.290	1054.339	3124.898
Hospitalization	330.426	206.432	275.967	328.733	129.809
Treatment, no hospitalization	352.342	136.293	194.111	236.897	1184.737
Minor	68.541	36 488	35.658	30.151	87.302
Robbery $10 with: Physical or verbal threat	118.316	112.830	162.219	178.225	151.009
Weapon	204.860	134.729	183.075	201.935	238.784
Burglary and theft of $10	79.933	73.249	77.051	71.126	85.538
Rape	345.099	401.286	592.785	739.189	923.971
Bombing of building, 20 deaths	1750.912	1257.802	1554.398	2088.935	2096.496

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 71 (Geometric means, by core-item-offense stimuli)

South region: Educational level

Offense	Never attended kindergarten	Grades 1–11	Grade 12	Grades >12	Not available
Theft: $1*	24.378	22.909	26.424	20.137	47.206
$10	46.228	36.870	45.543	34.064	96.683
$50	39.390	61.247	70.203	65.311	55.594
$100	55.594	74.604	90.876	77.946	51.249
$1,000	109.825	138.195	160.218	147.087	151.755
$10,000	139.691	199.272	263.325	247.876	143.867
Injury: Death	228.450	442.356	679.849	1040.467	279.480
Hospitalization	112.476	159.797	231.916	337.686	586.252
Treatment, no hospitalization	91.048	112.648	177.307	233.973	100.000
Minor	15.603	27.118	32.905	27.306	26.161
Robbery $10 with: Physical or verbal threat	92.863	86.532	137.891	171.442	133.787
Weapon	130.753	106.790	149.589	182.948	121.105
Burglary and theft of $10	54.374	63.119	74.950	78.618	17.959
Rape	160.042	313.242	602.829	749.746	621.440
Bombing of building, 20 deaths	619.032	989.591	1399.046	2047.915	1093.087

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

"not available" category. For subjects who did not report any educational level, the theft of $10 results in a higher score than the theft of $50. Similarly, a single killing results in a lower score than injury resulting from hospitalization, 240 compared to 549. The difference does not follow the expected linear trend in injury- and theft-related offenses and strongly suggests the inappropriateness of a seriousness scale for the "not available" category. However, it should be stressed that these anomalies appear to be mainly a function of small sample size. The number of subjects responding to some of the offenses is less than 10.

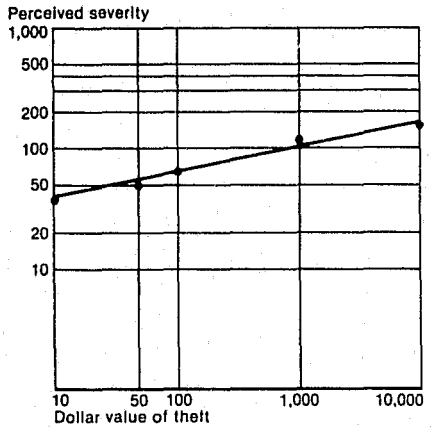
By census region, the observed distribution of scores is less consistent particularly for theft-related offenses. The problem noted with small sizes for the "not available" category is further exacerbated when census region is considered. For example, in the South the correlation coefficient drops to .63 for the "not available" category. There are a number of departures from the expected distribution: the thefts of $50 and $100 are scored lower than the theft of $10. Similarly, some anomalies appear in the South in the "never attended kindergarten" category: the theft of $50 is scored lower than the theft of $10. However, it should be noted that for categories the scaled values conform to the hypothesized power function in that coefficients are in the .99 range.

For injury-related offenses, the observed relationship between magnitude values and education, noted in the national trends, remains constant. The West, which we noted as having generally higher geometric mean values, has a geometric mean of 2628 for those with more than a high school education compared to 1390 for those with less than a high school degree.

Finally, the geometric mean ratios for serious injury (table 74) confirm the reported relationship with educational level for the Nation by census region. In each census region, except the West, the ratios are over the 2-to-1 difference for those without any formal education and close to 2.0 for other educational levels. The ratios for the "not available" category further indicate the instability of its surveyed scores. For instance, in the North Central region, the computed geometric mean for a bombing causing 20 deaths is lower than injury resulting in a single death.

Figure 38
(Dollar value of theft vs. perceived severity)

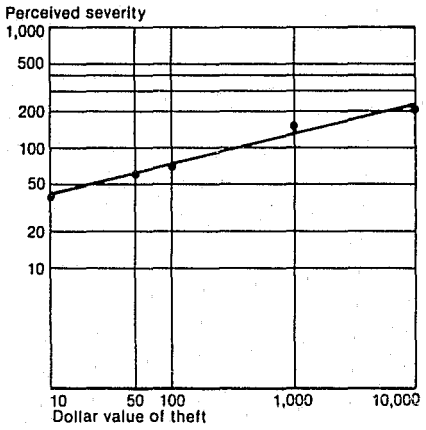
Education level: No kindergarten



Line is plot of expected values
• = observed values

Figure 39
(Dollar value of theft vs. perceived severity)

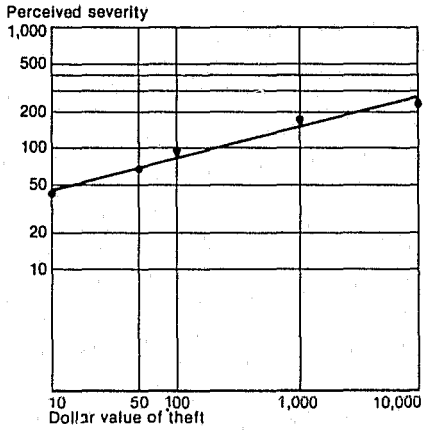
Education level: Grades 1-11



Line is plot of expected values
• = observed values

Figure 40
(Dollar value of theft vs. perceived severity)

Education level: Grade 12



Line is plot of expected values
• = observed values

Table 72 (Geometric means, by core-item-offense stimuli)

West region: Educational level

Offense		Never attended kindergarten	Grades 1-11	Grade 12	Grades >12	Not available
Theft:	$1*	14.962	24.547	24.547	16.780	4.375
	$10	25.844	45.580	42.399	29.610	10.000
	$50	39.098	66.953	75.744	58.419	34.830
	$100	66.123	72.254	93.387	70.524	35.978
	$1,000	105.436	154.549	178.985	148.985	165.065
	$10,000	170.622	250.757	293.203	240.915	253.868
Injury:	Death	720.271	735.407	966.255	1359.782	1000.000
	Hospitalization	152.769	232.202	357.021	370.746	418.843
	Treatment, no hospitalization	199.828	168.893	244.144	243.240	220.396
	Minor	28.766	33.940	34.340	31.597	17.004
Robbery $10 with:						
	Physical or verbal threat	137.008	129.339	192.893	192.930	700.000
	Weapon	256.381	130.015	186.881	216.041	88.946
Burglary	and theft of $10	48.184	73.635	79.668	74.067	51.109
Rape		443.807	460.085	713.923	762.030	655.069
Bombing of building,	20 deaths	1358.555	1390.567	1970.476	2628.543	1357.600

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 73 (Regression constants and slopes)

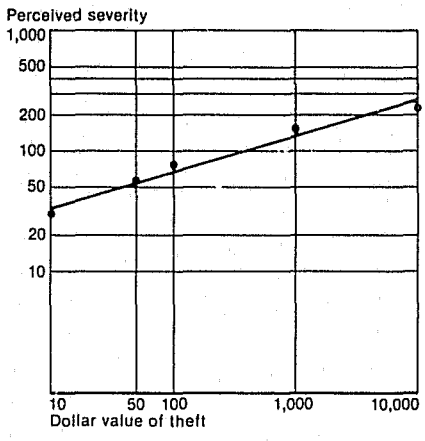
Dollar value of theft vs. perceived severity by Census region and education

($Y = aX^b$)

Sample	Correlation	Constant (a)	10^a	Slope (b)
Total U.S.				
Never attended kindergarten	.990	1.373	23.605	.216
Grades 1-11	.995	1.374	23.659	.245
Grade 12	.997	1.400	25.119	.261
Grades > 12	.993	1.246	17.620	.293
Not available	.925	1.000	10.000	.327
Northeast				
Never attended kindergarten	.937	1.522	33.266	.134
Grades 1-11	.993	1.350	22.387	.235
Grade 12	.996	1.344	22.080	.259
Grades > 12	.995	1.203	15.959	.290
Not available	.937	.822	6.637	.428
North Central				
Never attended kindergarten	.995	1.305	20.184	.321
Grades 1-11	.996	1.409	25.645	.248
Grade 12	.998	1.433	27.102	.259
Grades > 12	.990	1.240	17.378	.302
Not available	.964	.779	6.012	.542
South				
Never attended kindergarten	.938	1.387	24.378	.193
Grades 1-11	.991	1.360	22.909	.245
Grade 12	.997	1.422	26.424	.254
Grades > 12	.993	1.304	20.137	.281
Not available	.636	1.674	47.206	.120
West				
Never attended kindergarten	.982	1.175	14.962	.274
Grades 1-11	.996	1.390	24.547	.255
Grade 12	.995	1.390	24.547	.277
Grades > 12	.991	1.225	16.788	.301
Not available	.975	.641	4.375	.472

Figure 41
(Dollar value of theft vs. perceived severity)

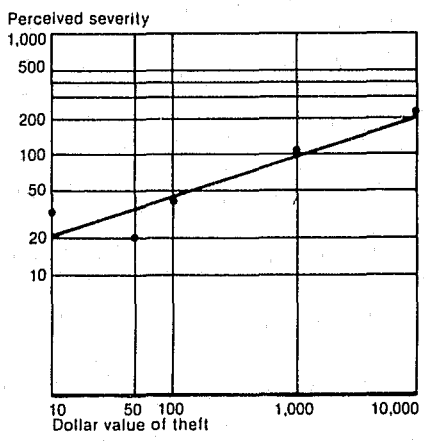
Education level: Grade 12 and over



Line is plot of expected values
• = observed values

Figure 42
(Dollar value of theft vs. perceived severity)

Education level: Not available



Line is plot of expected values
• = observed values

Table 74 (Geometric mean ratios)

Twenty deaths by bombing to a single killing

(Total United States, by Census region and education)

Census region and education	Ratio
Total U.S.	
Never attended kindergarten	2.61
Grades 1-11	2.14
Grade 12	2.03
Grades > 12	1.93
Not available	5.31
Northeast	
Never attended kindergarten	3.08
Grades 1-11	2.18
Grade 12	2.01
Grades > 12	1.83
Not available	1.29
North Central	
Never attended kindergarten	3.74
Grades 1-11	2.10
Grade 12	2.02
Grades > 12	1.98
Not available	.67
South	
Never attended kindergarten	2.71
Grades 1-11	2.24
Grade 12	2.06
Grades > 12	1.97
Not available	3.91
West	
Never attended kindergarten	1.89
Grades 1-11	1.89
Grade 12	2.04
Grades > 12	1.93
Not available	1.36

Victimization

In contrast to the previous sociodemographic factors we have examined for which a hypothesized relationship to perceived seriousness could not necessarily be advanced, the opposite is true for the case of victimization experience. It may be suggested that persons who suffer from the occurrence of crime are likely to offer higher magnitude judgments of its seriousness. However, it is important to stress that the measure of victimization we have available refers not only to the subjects' own experiences but includes the experiences of other household members as well. Further, we cannot classify the victimization experience in terms of specific offenses, but we can employ a scheme that accounts for personal, property, and combined offenses which the subject or household member experienced during the 6-month survey reference period.

The national level geometric means (table 75) exhibit the expected difference between nonvictims and victims. Victims produce higher geometric mean values than do nonvictims. The geometric mean for a single killing, for example, is 1024 for victims and 723 for nonvictims (1.4 times greater). However, despite the difference in absolute geometric mean values and the computed ratios, the scores appear proportional across the different core-item offenses. Looking at the most serious core offense, a bombing that results in 20 killings, the proportional difference is again 1.4 between victims and nonvictims.

Within subcategories of victim status—personal crime only, property crime only, and property and personal crime—we see substantially higher values (for the serious injury offenses) for those who suffered from both a personal and property offense. Although a 1.4 ratio was noted for all victimizations combined, this proportion rises to 1.9 for victims of both offenses compared to nonvictims for the single-killing offense. Thus, we may conclude that those who suffer personally or through the experience of a family member from repeated forms of criminal victimization assign the highest severity score values.

Although the observed differences appear substantial for the injury offenses, the expected relationship is not found for the theft offenses. The geometric means reveal no consistent differences between nonvictims and victims on the one hand or between the types of victimization and nonvictims on the other. The power functions are illustrated in figures 43 to 46 and, together with the slopes reported in table 80, we can see that the perceptions of seriousness all increase at about the same rate with only the combined victimization group exhibiting an appreciably higher slope.

Table 75 (Geometric means, by core-item-offense stimuli)

National: Victimization experience

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	21.777	22.080	22.542	22.131	18.030
	$10	37.442	39.053	39.524	38.989	34.852
	$50	62.155	66.402	67.173	67.222	58.512
	$100	77.079	83.842	83.085	79.744	97.531
	$1,000	146.468	164.841	164.483	160.360	173.884
	$10,000	232.393	266.387	261.681	258.956	327.069
Injury:	Death	722.961	1024.297	1007.169	922.693	1361.488
	Hospitalization	246.127	325.428	333.728	291.055	290.830
	Treatment, no hospitalization	178.974	214.262	215.683	204.971	211.357
	Minor	31.603	34.394	33.212	41.801	38.364
Robbery $10 with:						
Physical or verbal threat		136.771	178.794	180.949	157.399	184.255
Weapon		152.849	190.251	186.543	219.797	194.781
Burglary and theft of $10		66.143	77.056	72.716	63.794	92.504
Rape		523.349	750.626	758.086	659.807	800.982
Bombing of building, 20 deaths		1468.447	2056.561	2040.762	1889.072	2447.579

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 76 (Geometric means, by core-item-offense stimuli)

Northeast region: Victimization experience

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	19.815	20.512	20.701	17.100	26.002
	$10	33.469	38.936	37.963	37.697	59.167
	$50	55.870	52.856	54.747	37.136	56.702
	$100	69.658	71.835	72.360	51.317	128.484
	$1,000	132.247	142.872	143.509	123.413	173.405
	$10,000	202.691	227.617	223.460	182.115	415.252
Injury:	Death	679.059	964.706	951.581	844.271	1509.076
	Hospitalization	244.116	293.752	302.308	216.346	321.481
	Treatment, no hospitalization	179.684	190.143	183.214	189.247	353.931
	Minor	33.531	35.436	34.363	40.533	41.751
Robbery $10 with:						
Physical or verbal threat		133.956	168.200	166.980	161.059	202.477
Weapon		141.288	174.141	181.528	135.447	158.355
Burglary and theft of $10		61.249	65.866	68.852	40.161	78.464
Rape		511.232	734.464	745.090	654.058	725.778
Bombing of building, 20 deaths		1360.319	1873.570	1921.406	1238.516	2688.990

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 77 (Geometric means, by core-item-offense stimuli)

North Central region: Victimization experience

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	22.699	24.155	24.774	23.714	19.409
	$10	40.654	41.471	43.465	38.145	30.001
	$50	63.502	76.330	73.987	85.989	88.661
	$100	83.524	83.994	82.603	95.856	83.862
	$1,000	158.795	171.958	170.119	174.412	185.403
	$10,000	258.125	276.492	270.753	308.697	295.774
Injury:	Death	725.600	1149.909	1108.682	993.990	1849.219
	Hospitalization	253.906	348.550	353.340	281.347	371.308
	Treatment, no hospitalization	186.298	207.345	207.459	221.941	194.527
	Minor	33.468	36.449	35.823	39.071	39.085
Robbery $10 with:						
Physical or verbal threat		142.126	197.212	193.751	176.765	258.564
Weapon		170.634	197.273	202.696	173.880	179.981
Burglary and theft of $10		72.145	81.681	77.161	76.962	133.732
Rape		530.330	799.623	786.564	749.117	1000.693
Bombing of building, 20 deaths		1516.605	2113.979	2090.246	1948.964	2511.692

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 78 (Geometric means, by core-item-offense stimuli)

South region: Victimization experience

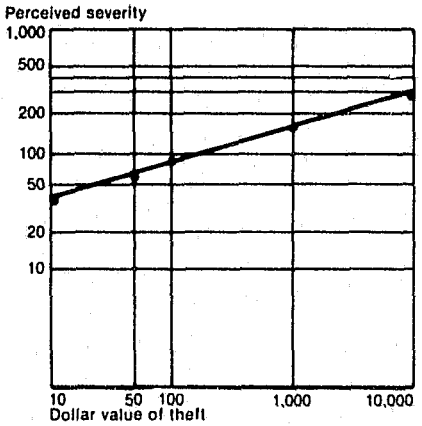
Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	22.962	23.496	24.378	22.182	15.311
	$10	38.109	41.246	42.712	39.361	26.923
	$50	64.758	67.559	70.542	58.887	47.049
	$100	77.374	96.277	96.639	97.843	90.095
	$1,000	142.475	172.903	173.811	174.057	159.974
	$10,000	224.245	283.098	289.864	263.077	238.047
Injury:	Death	636.132	816.715	801.829	908.544	902.444
	Hospitalization	216.037	284.846	295.880	269.397	186.979
	Treatment, no hospitalization	157.702	203.495	219.053	147.415	138.121
	Minor	27.829	34.366	32.845	51.707	34.283
Robbery $10 with:						
Physical or verbal threat		121.000	149.650	152.180	143.333	125.481
Weapon		133.871	188.383	173.641	426.393	169.447
Burglary and theft of $10		70.281	76.952	78.976	70.945	61.774
Rape		479.888	681.184	693.894	664.419	556.247
Bombing of building, 20 deaths		1305.471	1833.828	1839.718	1847.143	1740.287

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

These findings are maintained for the four census regions. For serious injury offenses (bombing, death, rape, hospitalized), victims generate higher magnitude scores than do nonvictims, and the disparity widens when combined victimization is contrasted with nonvictimization, although, for the most part, the ratios of 20 deaths to a single death average around 2.0 (table 81). For the theft offenses, the power functions are similar across victimization categories, although the combined offense-victim type shows by far the steepest slope, thus indicating a wider range of values and more sensitivity to changes in the severity of increasing the dollar value of theft.

Figure 43
(Dollar value of theft vs. perceived severity)

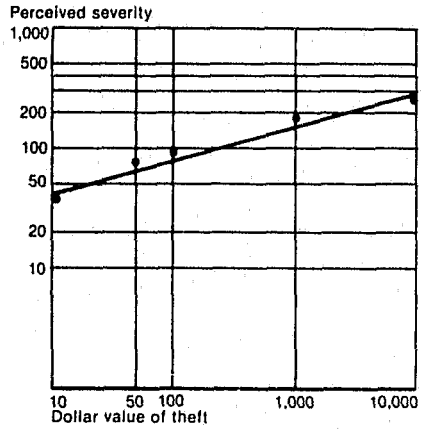
Victimization experience: Not victimized



Line is plot of expected values
• = observed values

Figure 44
(Dollar value of theft vs. perceived severity)

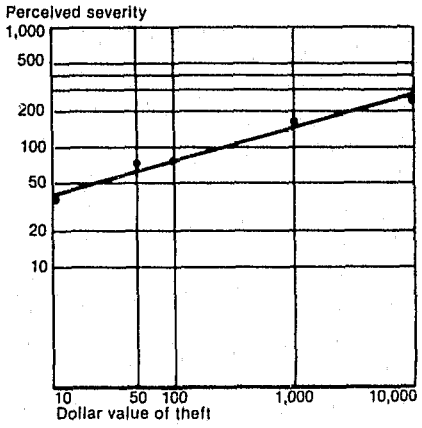
Victimization experience: Victimized for property crime only



Line is plot of expected values
• = observed values

Figure 45
(Dollar value of theft vs. perceived severity)

Victimization experience: Victimized for personal and property crime



Line is plot of expected values
• = observed values

Table 79 (Geometric means, by core-item-offense stimuli)

West region: Victimization experience

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	20.941	19.588	19.454	26.242	15.417
	$10	37.261	33.994	32.699	40.965	37.642
	$50	64.678	67.710	68.044	98.045	44.264
	$100	77.642	80.180	77.671	74.952	110.024
	$1,000	156.976	166.785	165.883	166.210	173.721
	$10,000	256.356	269.266	253.113	270.366	419.731
Injury:	Death	997.622	1272.327	1312.594	941.600	1301.990
	Hospitalization	304.620	387.537	401.179	405.202	289.033
	Treatment, no hospitalization	213.593	262.716	256.600	309.667	269.547
	Minor	33.453	31.470	30.073	35.184	39.733
Robbery $10 with:						
Physical or verbal threat		166.381	212.585	229.901	150.577	169.541
Weapon		182.850	198.543	190.972	208.251	253.428
Burglary and theft of $10		72.746	82.777	81.669	103.128	71.105
Rape		623.312	811.253	834.488	574.196	891.910
Bombing of building, 20 deaths		1942.092	2493.618	2408.008	2744.158	2934.188

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 80 (Regression constants and slopes)

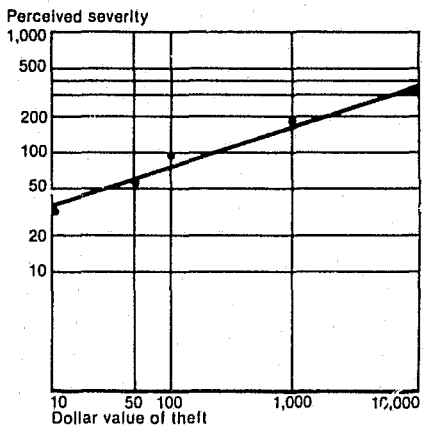
Dollar value of theft vs. perceived severity, by Census region and victimization

($Y = aX^b$)

Sample	Correlation	Constant (a)	10^a	Slope (b)
Total U.S.				
Not victimized	.996	1.338	21.777	.265
Victimized	.995	1.344	22.080	.279
Property crime only	.995	1.353	22.542	.275
Personal crime only	.996	1.345	22.131	.275
Property and personal	.990	1.256	18.030	.323
Northeast				
Not victimized	.994	1.297	19.815	.262
Victimized	.994	1.312	20.512	.267
Property crime only	.995	1.316	20.701	.265
Personal crime only	.967	1.233	17.100	.260
Property and personal	.955	1.415	26.002	.292
North Central				
Not victimized	.996	1.356	22.699	.271
Victimized	.994	1.383	24.155	.272
Property crime only	.995	1.394	24.774	.267
Personal crime only	.985	1.375	23.714	.287
Property and personal	.966	1.288	19.409	.312
South				
Not victimized	.995	1.361	22.962	.255
Victimized	.992	1.371	23.496	.279
Property crime only	.994	1.387	24.378	.276
Personal crime only	.982	1.346	22.182	.281
Property and personal	.968	1.185	15.311	.317
West				
Not victimized	.996	1.321	20.941	.280
Victimized	.991	1.292	19.588	.296
Property crime only	.986	1.289	19.454	.292
Personal crime only	.966	1.419	26.242	.259
Property and personal	.971	1.188	15.417	.358

Figure 46
(Dollar value of theft vs. perceived severity)

Victimization experience: Victimized for personal crime only



Line is plot of expected values
• = observed values

Table 81 (Geometric mean ratios)

Twenty deaths by bombing to a single killing

(Total United States, by Census region and victimization)

Census region and victimization	Ratios
Total U.S.	
Not victimized	2.03
Victimized	2.01
Property crime only	2.03
Personal crime only	2.05
Property and personal	1.80
Northeast	
Not victimized	2.00
Victimized	1.94
Property crime only	2.02
Personal crime only	1.47
Property and personal	1.78
North Central	
Not victimized	2.09
Victimized	1.84
Property crime only	1.88
Personal crime only	1.96
Property and personal	1.36
South	
Not victimized	2.05
Victimized	2.24
Property crime only	2.29
Personal crime only	2.03
Property and personal	1.93
West	
Not victimized	1.95
Victimized	1.96
Property crime only	1.83
Personal crime only	2.91
Property and personal	2.25

Summary of univariate data

Before proceeding with a discussion of the multivariate distributions of severity judgments, it is important to review some of the univariate findings. It was found that differences in the absolute values of perceived severity are mainly confined to serious injury offenses. A regional effect was observed in that respondents in the West tended to judge the injury-offense stimuli as higher in severity than did those in the other regions (especially in the South). When each of the sociodemographic characteristics was introduced, the observed regional effect appeared constant, as would be expected if these attributes were being sampled equally within the survey population.

However, the greatest difference in the observed magnitude of responses was reported with race specific to serious injury offenses. Nonwhites generally exhibited lower scores than whites. Other significant differences existed by education, occupation, and victimization. The difference was in the expected direction in that lower income, occupation, and education groups produced lower scores, again mainly for serious injury offenses. Yet, differences by sex and age categories in the tabulated geometric means were generally insignificant, although there was a slight curvilinear relationship with age by serious injury offenses.

Despite differences in absolute numerical values, regressed dollar values of theft generally indicated that respondents who may differ by race, occupation, income, and education perceived the severity ratios of core-item offenses in about the same fashion. The fact that the power function was not supported in all cases with the observed data has been attributed in part to the unweighted sample size falling below the required number of cases for obtaining statistically reliable results. We also attributed anomalies in the expected distribution to the fact that where there are about 50 respondents there may be heterogeneity in various subgroups of the sample population, for example, teenage nonwhites in the Northeast.

Because nonwhites are more representative of low-income occupational and education groups as well as more often the victims of personal crime, it is expected that differences in the multivariate distribution of offense seriousness may be due to an interaction effect between these variables and their severity scores.

Multivariate data

Race, age, and sex

In tables 82 to 87, the multivariate distribution of national geometric means is presented by race, age, and sex. Although sex and age categories are uniformly distributed in the sample population, this is not the case for race. Black respondents make up about 10 percent of the surveyed population, and "other" respondents comprise about 1 percent of the sample. Consequently, the scores for white respondents should be more consistent by age and sex than the values computed for blacks and "others."

The most striking deviation in geometric mean scores is in the "other" category for males between ages 18 and 19. Only two respondents answered the survey stimuli concerning death resulting from injury. Their geometric mean score (28,769) is disproportionate to other values computed for black and white respondents. It is important to note that the lower score given for a bombing compared to a single death can be attributed to different random subsets of the population being surveyed.

Other deviations in the expected distribution of scores exist for black respondents by age and sex. Black teenage males produce a geometric mean for a bombing which is not substantially greater than that for a single killing, 668 compared to 628. This is in sharp contrast to the approximate 2-to-1 ratio consistently observed in their univariate distributions.

Although the geometric means for blacks and "other" subjects appear inconsistent for numerous age categories, the data for whites are proportional across sex and age categories as illustrated most clearly with the computed regressions (table 88) based on dollar values of theft and perceived severity values. For all age groups, white males and females both have coefficients of correlation in the .99 range. Furthermore, the slopes of the computed regressions are about equal. The largest deviation in slope values is for the elderly respondents as noted in their univariate distribution; elderly respondents tend to work with a slightly broader range of numbers than their younger counterparts.

Table 82 (Geometric means, by core-item-offense stimuli)

National: Age—White males

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	18.880	19.454	19.770	21.577	20.137	16.672
	$10	32.0434	32.6297	33.4540	35.5626	37.5487	31.7755
	$50	53.215	58.611	57.596	61.872	60.781	56.185
	$100	71.658	72.218	72.633	72.921	75.212	72.949
	$1,000	140.717	137.135	135.653	142.247	152.776	158.300
	$10,000	201.537	219.058	214.713	209.244	260.426	265.855
Injury:	Death	548.9	876.1	1063.8	842.1	735.0	673.5
	Hospitalization	174.269	233.006	274.101	275.485	262.333	206.457
	Treatment, no hospitalization	113.271	148.613	187.314	189.247	174.958	153.853
	Minor	17.8322	20.4193	26.5247	28.6239	26.6508	28.6266
Robbery $10 with:	Physical or verbal threat	109.534	126.823	177.486	172.828	157.170	117.966
	Weapon	125.617	142.071	201.977	225.097	206.225	138.845
Burglary and theft of $10		40.42	51.74	70.99	84.53	81.44	75.79
Rape		462.65	621.66	734.43	587.46	587.01	450.68
Bombing of building, 20 deaths		1293.82	1709.68	1941.39	1856.56	1894.63	1781.70

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 83 (Geometric means, by core-item-offense stimuli)

National: Age—White females

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	25.293	24.099	23.605	23.988	23.227	19.011
	$10	41.5524	38.1037	41.4733	43.8248	44.2913	37.0838
	$50	77.591	80.243	67.726	67.480	70.762	59.421
	$100	94.474	89.311	84.181	80.154	88.588	83.047
	$1,000	172.729	164.141	155.530	157.691	184.278	171.309
	$10,000	278.259	269.065	263.224	266.470	316.094	294.434
Injury:	Death	653.8	857.6	872.0	923.7	957.5	675.3
	Hospitalization	254.739	323.080	396.335	325.424	302.191	246.348
	Treatment, no hospitalization	181.229	202.286	254.564	252.123	232.243	186.382
	Minor	33.0027	33.8375	36.2315	37.7553	46.2068	44.4622
Robbery $10 with:	Physical or verbal threat	132.540	149.404	167.336	173.090	169.955	115.699
	Weapon	120.893	154.176	169.665	168.755	166.938	138.266
Burglary and theft of $10		48.29	61.45	66.17	69.74	73.27	64.62
Rape		660.10	711.51	684.78	668.71	642.01	495.56
Bombing of building, 20 deaths		1218.23	1477.57	1607.66	1699.19	1847.92	1673.53

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

But for blacks, the computed regression produces correlation coefficients that range as low as .93. This lower correlation is produced by elderly black males and follows from the effect of the low value of 125 for theft of $10,000 given by these respondents. There are further inconsistencies in how black respondents score dollar values of theft as reflected in their computed regression slopes. Teenage black males have the highest slope, .32, reflecting the greatest rise in numerical

Table 84 (Geometric means, by core-item-offense stimuli)

National: Age—Black males

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	12.218	30.339	31.989	26.792	28.119	25.295
	$10	25.6815	48.2364	41.1352	32.4326	45.1047	31.4278
	$50	38.177	49.942	56.526	65.347	48.385	59.971
	$100	64.570	65.979	88.500	76.861	76.434	71.639
	$1,000	104.928	106.371	116.840	113.307	109.560	123.335
	$10,000	243.359	136.684	130.487	134.960	152.622	124.857
Injury:	Death	627.6	601.8	491.2	355.5	317.5	331.4
	Hospitalization	82.323	135.531	166.510	165.016	122.576	137.419
	Treatment, no hospitalization	92.762	90.370	159.029	134.863	121.463	64.964
	Minor	23.5702	18.4980	24.1571	32.6347	27.7009	24.2412
Robbery $10 with:							
	Physical or verbal threat	74.149	108.857	105.640	92.854	89.349	59.349
	Weapon	71.334	82.975	89.887	123.774	106.147	127.429
Burglary	and theft of $10	33.24	46.00	56.55	81.40	81.46	87.49
Rape		249.91	362.72	436.16	261.66	251.28	244.39
Bombing of building,	20 deaths	668.28	969.46	897.75	913.53	687.91	895.69

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 85 (Geometric means, by core-item-offense stimuli)

National: Age—Black females

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	28.444	34.514	29.512	31.261	23.659	21.928
	$10	38.8767	46.1860	45.6099	43.2615	44.0488	30.9785
	$50	66.478	68.443	59.848	62.610	53.161	65.237
	$100	54.863	79.510	75.546	74.510	82.444	58.149
	$1,000	106.508	141.195	121.875	113.206	124.704	136.542
	$10,000	128.617	144.158	168.082	144.920	233.701	149.775
Injury:	Death	320.4	.	513.1	291.1	483.1	356.4
	Hospitalization	183.338	177.327	204.085	180.574	154.494	136.091
	Treatment, no hospitalization	94.755	131.763	168.960	142.580	146.126	73.695
	Minor	26.8553	36.8831	42.1280	36.0261	34.7126	31.2344
Robbery $10 with:							
	Physical or verbal threat	68.400	112.871	112.049	98.084	95.503	93.020
	Weapon	90.377	163.976	140.113	105.969	89.798	105.138
Burglary	and theft of $10	31.30	52.97	62.30	63.86	47.58	59.50
Rape		288.55	416.81	370.55	245.84	322.18	223.43
Bombing of building,	20 deaths	620.16	951.74	907.16	803.17	841.59	801.78

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

values assigned to theft, compared to .17 for the next oldest age group. In contrast, for whites there are generally higher slopes in older age categories for both sexes.

The only anomalies for black respondents in the national-level results appear in the geometric means for robbery offenses. Robbery resulting in physical or verbal threats is scored higher than robbery with a weapon by black males under age 35 and black females ages 20–24 and 35–49.

Table 86 (Geometric means, by core-item-offense stimuli)

National: Age—Other males

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	42.0776	12.4040	10.3578	22.6549	17.5872	17.5417
	$10	70.8607	16.7816	28.2207	29.7478	36.9190	15.4970
	$50	40.363	64.890	44.450	42.912	24.447	263.918
	$100	111.786	48.292	39.276	35.700	54.055	27.337
	$1,000	111.324	95.432	104.219	79.521	76.859	107.431
	$10,000	149.372	168.794	320.327	69.649	126.015	186.137
Injury:	Death	28769.4	210.1	504.2	485.0	1358.1	128.7
	Hospitalization	325.336	150.871	505.546	153.259	100.736	397.778
	Treatment, no hospitalization	78.535	174.106	190.708	76.248	198.147	43.104
	Minor	36.7352	24.8201	37.9292	32.3013	15.2112	30.0000
Robbery $10 with:	Physical or verbal threat	58.634	78.484	208.135	201.481	131.586	41.931
	Weapon	101.302	176.486	53.383	118.694	33.871	455.073
Burglary and theft of $10		28.46	24.32	51.27	85.67	36.20	1735.04
Rape		1125.06	201.62	351.31	145.61	2287.63	107.16
Bombing of building, 20 deaths		1722.16	592.69	1122.76	551.02	420.34	665.79

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 87 (Geometric means, by core-item-offense stimuli)

National: Age—Other females

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	43.7814	10.7856	14.5362	27.3846	22.4735	13.1092
	$10	37.5775	41.8020	13.0653	37.0220	20.5857	12.1977
	$50	145.572	20.722	56.352	71.489	113.685	42.543
	$100	90.944	62.741	82.238	59.410	44.118	88.181
	$1,000	142.574	102.833	95.496	102.933	117.647	82.617
	$10,000	145.666	363.361	106.119	146.166	109.079	96.774
Injury:	Death	1121.4	2421.4	212.3	377.6	1412.2	224.4
	Hospitalization	228.799	87.224	255.589	626.950	287.945	60.552
	Treatment, no hospitalization	59.892	225.245	137.062	158.563	50.569	87.678
	Minor	70.1252	75.3843	33.6153	38.0714	34.5110	13.0132
Robbery $10 with:	Physical or verbal threat	127.038	93.460	42.775	214.240	57.518	54.922
	Weapon	207.766	86.809	68.221	47.710	108.040	99.188
Burglary and theft of $10		273.98	22.34	71.11	45.83	96.67	50.00
Rape		725.95	359.42	267.52	294.35	105.77	88.30
Bombing of building, 20 deaths		950.11	626.71	601.96	654.22	953.09	449.43

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 88 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by race, age, and sex: Total United States

($Y = aX^b$)

Total U.S.	Correlation	Constant (a)	10^a	Slope (b)
White males				
18–19	.988	1.276	18.880	.270
20–24	.991	1.289	19.454	.270
25–34	.994	1.296	19.770	.268
35–49	.992	1.334	21.577	.257
50–64	.998	1.304	20.137	.283
65+	.995	1.222	16.672	.310
White females				
18–19	.992	1.403	25.293	.269
20–24	.986	1.382	24.099	.271
25–34	.998	1.373	23.605	.267
35–49	.999	1.380	23.988	.265
50–64	.998	1.366	23.227	.289
65+	.996	1.279	19.011	.305
Black males				
18–19	.991	1.087	12.218	.323
20–24	.975	1.482	20.229	.167
25–34	.933	1.505	31.989	.169
35–49	.938	1.428	26.792	.193
50–64	.971	1.449	28.119	.188
65+	.929	1.403	25.293	.197
Black females				
18–19	.957	1.454	28.444	.173
20–24	.955	1.538	34.514	.173
25–34	.994	1.470	29.512	.194
35–49	.988	1.495	31.261	.175
50–64	.988	1.374	23.659	.246
65+	.948	1.341	21.928	.229

By census region, the geometric mean breakdown by race, age, and sex leads to some further inconsistencies for blacks and "other" respondents. For white respondents, the differences follow the expected distribution and are consistent with national- and regional-level scores (tables 89-104). The discussion based on census region will be confined to white and black sex and age categories because the low sample size for "other" respondents generally produces unreliable results.

Regardless of census region, the data reported for the white age-sex categories follow the expected power function with slope differences that reflect the national-level scores. Thus, the regression slopes generally increase for both sexes as age increases. The dollar value-perceived severity correlations are mostly in the .98 and .99 range indicating a good fit for white respondents across sex and age categories. There are, however, departures from this expected fit for black respondents (tables 105 to 108).

For example, the power function relationships are weak for black males ages 20–24 ($r = .823$) and 65+ ($r = .358$) and black females ages 20–24 ($r = .811$) in the Northeast. Figure 47 shows that the black males age 65+ have scores that depart from the regression line appreciably. Similar disparities are found for black respondents in the other three census regions as well where the slopes indicate a fluctuating pattern of magnitude scores for the sex-age categories.

It should be stressed here perhaps that the available cases become quite limited at the regional level for the race-age-sex breakdown, particularly for blacks. Further, because no respondent judged all of the core-item stimuli, a large variance in means may reflect different sample groups. That is, the nine black teenage males surveyed in the Northeast on a single death by injury may be different from the respondents who reported on the bombing offense stimuli. Thus, the differences reported above should be viewed cautiously.

Table 89 (Geometric means, by core-item-offense stimuli)

Northeast region: Age—White males

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	17.539	16.406	17.338	19.454	19.231	15.740
	$10	30.642	20.288	30.424	32.379	37.065	26.245
	$50	44.224	35.963	43.851	56.008	49.384	52.456
	$100	57.028	71.208	61.743	63.176	69.247	65.106
	$1,000	120.320	117.205	114.186	128.014	140.584	132.705
	$10,000	160.693	173.522	171.581	187.801	220.026	198.736
Injury:	Death	634.369	634.550	1270.662	897.891	762.673	628.914
	Hospitalization	177.519	165.391	270.737	278.978	218.288	190.578
	Treatment, no hospitalization	115.171	131.941	171.651	195.816	169.287	137.650
	Minor	13.623	20.844	26.218	36.995	28.813	29.433
Robbery $10 with:							
	Physical or verbal threat	102.224	103.228	172.810	175.886	186.239	105.771
	Weapon	111.065	136.556	165.693	230.072	179.288	106.478
Burglary and theft of $10		41.344	35.716	68.598	81.396	67.754	67.602
Rape		567.344	513.240	695.868	546.842	543.419	386.838
Bombing of building, 20 deaths		1154.904	1334.523	1676.763	1831.479	1737.602	1313.649

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 90 (Geometric means, by core-item-offense stimuli)

Northeast region: Age—White females

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	23.442	20.941	24.322	24.898	23.486	19.634
	$10	41.077	32.633	42.268	42.343	42.234	35.917
	$50	67.224	75.067	66.422	71.840	70.344	58.077
	$100	86.570	78.329	81.968	73.120	80.130	72.516
	$1,000	149.559	139.809	150.239	146.417	178.868	152.722
	$10,000	267.529	247.103	247.295	237.783	267.420	238.728
Injury:	Death	461.132	771.103	933.163	757.649	846.086	513.837
	Hospitalization	235.273	289.168	358.154	357.900	310.565	247.353
	Treatment, no hospitalization	198.235	204.775	237.319	235.313	203.508	171.468
	Minor	27.517	34.600	38.062	39.496	51.106	50.258
Robbery $10 with:							
	Physical or verbal threat	135.603	114.148	187.072	149.092	176.677	105.719
	Weapon	111.319	139.063	146.844	166.989	158.278	128.933
Burglary and theft of $10		53.050	57.490	66.842	71.936	79.018	56.533
Rape		628.991	591.729	768.467	637.506	634.721	468.254
Bombing of building, 20 deaths		1000.190	1374.905	1663.256	1566.154	1583.480	1417.706

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 91 (Geometric means, by core-item-offense stimuli)

Northeast region: Age—Black males

Offense		18-19	20-24	25-34	35-49	50-64	65+
Theft:	$1*	5.047	13.709	17.947	18.030	20.277	29.717
	$10	14.325	26.243	27.115	24.080	39.421	18.183
	$50	9.885	17.993	30.348	51.787	43.039	147.921
	$100	38.812	72.878	54.437	65.911	49.542	33.262
	$1,000	63.902	84.916	73.531	77.711	90.045	76.847
	$10,000	124.759	111.381	93.682	144.608	164.060	58.659
Injury:	Death	766.817	270.352	222.249	382.116	400.856	656.942
	Hospitalization	34.864	67.688	107.453	134.291	179.036	208.418
	Treatment, no hospitalization	129.976	137.654	164.708	200.510	123.555	56.131
	Minor	3.678	21.645	35.625	33.935	15.837	6.489
Robbery $10 with:							
	Physical or verbal threat	75.394	65.454	74.512	78.806	77.541	91.410
	Weapon	31.590	83.427	61.415	111.534	69.493	46.904
Burglary							
	and theft of $10	12.158	25.419	34.065	51.393	62.431	119.083
Rape		169.529	262.850	325.101	270.000	301.449	819.251
Bombing of building,							
	20 deaths	534.219	658.823	641.182	873.605	621.280	701.665

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 92 (Geometric means, by core-item-offense stimuli)

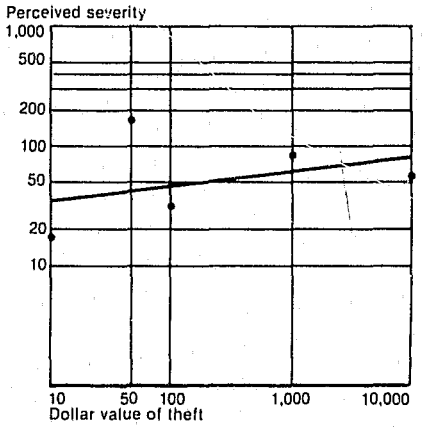
Northeast region: Age—Black females

Offense		18-19	20-24	25-34	35-49	50-64	65+
Theft:	$1*	18.365	18.620	24.210	15.346	9.016	15.524
	$10	40.726	20.804	41.193	19.521	19.325	25.147
	$50	35.522	34.492	36.251	38.346	37.078	51.321
	$100	54.257	80.450	54.606	43.367	69.950	100.908
	$1,000	87.014	83.815	89.721	70.568	112.732	145.266
	$10,000	187.062	83.713	112.266	82.976	292.499	248.783
Injury:	Death	235.420	324.286	738.162	261.078	426.730	118.195
	Hospitalization	77.932	113.372	253.871	143.735	170.243	144.799
	Treatment, no hospitalization	117.716	183.443	176.660	94.046	209.905	272.081
	Minor	23.932	18.582	35.112	29.749	43.706	40.352
Robbery $10 with:							
	Physical or verbal threat	101.518	60.602	127.990	70.099	80.245	34.615
	Weapon	94.876	58.615	111.351	78.485	117.013	183.157
Burglary							
	and theft of $10	17.979	18.185	44.880	32.543	43.604	50.102
Rape		253.972	380.729	588.636	200.634	352.212	329.261
Bombing of building,							
	20 deaths	658.111	1145.652	839.481	649.058	913.554	1054.178

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Figure 47
(Dollar value of theft vs. perceived severity)

Northeast region: Black males, age 65 and over



Line is plot of expected values
• = observed values

Table 93 (Geometric means, by core-item-offense stimuli)

North Central region: Age—White males

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	20.417	18.923	21.827	23.823	21.627	15.922
	$10	31.684	30.763	37.200	40.970	40.243	32.442
	$50	64.540	61.391	63.847	60.586	63.213	49.777
	$100	69.477	80.689	74.440	76.176	84.053	77.528
	$1,000	138.257	149.355	147.807	151.513	162.075	165.915
	$10,000	199.052	230.990	228.841	214.273	277.424	277.547
Injury:	Death	527.258	1006.728	920.827	841.321	873.884	791.506
	Hospitalization	192.538	235.482	306.886	307.635	244.644	159.302
	Treatment, no hospitalization	105.039	155.346	186.866	210.589	166.591	149.198
	Minor	15.755	25.892	29.607	24.636	33.324	29.202
Robbery $10 with:							
	Physical or verbal threat	93.331	139.756	192.739	176.231	161.751	120.181
	Weapon	116.211	169.777	211.277	201.058	256.145	141.047
Burglary and theft of $10		58.452	52.050	71.809	88.331	86.339	65.068
Rape		420.054	632.586	663.379	666.379	628.900	477.690
Bombing of building, 20 deaths		1599.989	1838.775	1851.970	1893.946	1852.232	1960.780

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 94 (Geometric means, by core-item-offense stimuli)

North Central region: Age—White females

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	28.314	27.797	25.763	23.442	22.131	17.061
	$10	42.091	42.853	44.434	42.792	46.757	37.243
	$50	91.214	85.752	73.196	68.383	75.128	51.835
	$100	116.442	87.767	87.736	85.628	90.205	79.209
	$1,000	196.925	170.787	162.511	162.935	188.945	174.868
	$10,000	297.962	253.227	270.040	284.338	401.618	312.073
Injury:	Death	713.028	784.924	867.477	885.857	851.742	681.113
	Hospitalization	260.985	336.619	376.859	297.795	317.169	222.889
	Treatment, no hospitalization	175.278	187.764	251.558	262.113	228.355	160.106
	Minor	39.310	36.973	33.076	40.219	46.208	41.074
Robbery $10 with:							
	Physical or verbal threat	131.431	157.939	176.166	171.252	149.557	116.332
	Weapon	178.274	161.929	164.620	180.558	182.619	132.655
Burglary and theft of $10		61.330	72.689	75.906	74.056	88.440	60.612
Rape		708.704	752.684	621.654	693.187	597.974	419.149
Bombing of building, 20 deaths		1325.715	1445.662	1488.083	1475.549	1843.964	1627.915

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 95 (Geometric means, by core-item-offense stimuli)

North Central region: Age—Black males

Offense		18-19	20-24	25-34	35-49	50-64	65+
Theft:	$1*	7.998	35.156	62.374	26.546	41.591	23.768
	$10	18.612	82.470	60.885	33.159	69.370	44.299
	$50	32.581	53.261	64.226	73.431	60.415	58.180
	$100	85.265	109.086	169.095	103.196	89.392	108.503
	$1,000	126.251	129.726	155.749	151.549	135.474	120.578
	$10,000	349.721	333.617	105.538	184.376	179.687	308.294
Injury:	Death	185.061	738.118	1053.719	410.702	263.233	284.243
	Hospitalization	65.312	141.225	180.250	369.367	103.467	169.158
	Treatment, no hospitalization	151.083	240.305	256.169	128.969	139.769	107.937
	Minor	23.394	20.506	30.359	85.235	37.863	50.354
Robbery $10 with:							
	Physical or verbal threat	45.728	202.167	160.859	90.293	138.016	50.087
	Weapon	86.829	154.137	121.100	163.211	133.579	279.936
Burglary and theft of $10		20.693	47.777	83.961	126.411	52.900	74.054
Rape		310.043	407.791	775.883	297.383	180.692	204.115
Bombing of building, 20 deaths		822.460	1966.573	1221.103	1167.095	693.463	1099.134

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 96 (Geometric means, by core-item-offense stimuli)

North Central region: Age—Black females

Offense		18-19	20-24	25-34	35-49	50-64	65+
Theft:	$1*	22.182	47.315	43.652	59.156	44.157	34.834
	$10	38.077	60.836	79.024	78.275	71.707	43.200
	$50	36.927	109.872	62.736	111.249	78.730	90.169
	$100	63.746	80.119	139.294	89.861	109.732	74.891
	$1,000	114.231	177.390	162.705	154.634	147.861	192.234
	$10,000	128.989	177.507	270.456	186.787	243.480	151.178
Injury:	Death	430.521	451.163	630.760	515.966	791.716	567.634
	Hospitalization	178.995	527.217	128.401	432.834	190.121	216.900
	Treatment, no hospitalization	81.397	140.985	375.397	162.794	168.226	96.926
	Minor	41.727	65.771	80.679	53.671	43.488	43.109
Robbery $10 with:							
	Physical or verbal threat	92.728	170.365	155.737	185.388	141.146	113.093
	Weapon	148.608	161.194	256.285	183.316	89.596	180.601
Burglary and theft of $10		46.930	101.513	78.066	143.837	75.691	109.782
Rape		325.942	354.016	325.796	372.425	481.837	216.318
Bombing of building, 20 deaths		639.435	1163.239	875.926	1030.692	832.655	1309.131

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 97 (Geometric means, by core-item-offense stimuli)

South region: Age—White males

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	16.982	23.442	21.528	24.604	19.275	18.197
	$10	29.582	37.308	35.041	36.378	34.547	34.228
	$50	49.160	64.748	64.002	73.106	70.290	58.448
	$100	95.230	75.185	77.405	83.685	73.316	78.778
	$1,000	160.597	135.206	136.376	145.675	155.211	163.584
	$10,000	243.405	206.103	223.673	214.741	281.245	271.647
Injury:	Death	525.021	770.160	858.699	931.726	634.766	605.182
	Hospitalization	143.639	258.554	251.388	238.558	278.124	196.877
	Treatment, no hospitalization	120.507	149.786	175.229	151.129	176.358	143.480
	Minor	18.562	20.586	22.344	26.678	20.908	20.264
Robbery $10 with:							
	Physical or verbal threat	113.451	111.576	161.047	142.626	121.114	115.287
	Weapon	219.264	119.197	190.664	238.436	173.509	141.625
Burglary and theft of $10		38.469	63.587	77.780	94.588	95.507	79.152
Rape		435.589	551.888	734.451	580.378	581.080	436.605
Bombing of building, 20 deaths		1107.698	1501.294	1822.392	1770.409	1814.262	1674.922

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 98 (Geometric means, by core-item-offense stimuli)

South region: Age—White females

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	25.351	22.387	21.827	24.889	25.645	20.893
	$10	43.790	39.128	39.156	49.619	42.373	38.636
	$50	84.962	68.085	61.546	65.000	76.427	62.957
	$100	91.310	90.059	83.921	81.743	95.226	88.144
	$1,000	194.010	158.280	149.899	160.142	176.125	167.435
	$10,000	312.802	280.505	259.016	292.034	276.216	287.402
Injury:	Death	697.421	788.797	761.812	866.240	934.350	608.403
	Hospitalization	336.918	245.233	285.743	283.351	269.177	213.228
	Treatment, no hospitalization	174.265	204.005	230.711	255.522	215.969	175.501
	Minor	40.652	31.443	34.661	35.364	44.129	38.436
Robbery $10 with:							
	Physical or verbal threat	143.431	153.402	144.337	167.582	154.635	114.258
	Weapon	107.549	132.555	170.511	165.639	144.682	115.141
Burglary and theft of $10		71.618	62.421	62.755	76.661	76.458	64.213
Rape		877.563	724.455	648.117	627.178	616.934	518.899
Bombing of building, 20 deaths		1504.851	1274.478	1416.622	1664.845	1863.901	1396.850

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 99 (Geometric means, by core-item-offense stimuli)

South region: Age—Black males

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	24.774	40.458	26.123	30.334	26.546	19.364
	$10	32.721	55.316	36.071	33.881	39.808	27.270
	$50	82.968	58.261	62.617	64.428	39.282	50.673
	$100	57.894	47.451	76.372	73.686	85.890	78.897
	$1,000	105.362	103.883	110.189	114.145	109.595	141.689
	$10,000	165.946	88.037	160.067	107.571	126.424	152.234
Injury:	Death	525.210	829.714	337.777	290.819	260.363	255.820
	Hospitalization	128.581	137.939	171.145	119.584	105.498	119.821
	Treatment, no hospitalization	71.732	51.211	129.878	90.900	91.301	64.722
	Minor	30.669	15.048	16.864	23.186	27.511	31.259
Robbery $10 with:							
	Physical or verbal threat	75.461	118.118	73.619	83.136	77.824	51.332
	Weapon	55.299	57.383	74.064	97.470	122.657	230.871
Burglary and theft of $10		50.543	66.766	61.737	79.124	65.479	76.574
Rape		292.918	306.018	315.178	195.492	233.018	166.895
Bombing of building, 20 deaths		546.963	783.667	826.702	705.944	633.332	833.405

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 100 (Geometric means, by core-item-offense stimuli)

South region: Age—Black females

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	33.729	35.318	27.227	31.046	26.303	22.699
	$10	33.325	50.551	38.456	48.758	52.943	29.746
	$50	112.992	67.505	73.423	56.155	49.167	66.147
	$100	47.932	81.598	69.081	82.320	84.207	47.990
	$1,000	109.176	142.536	113.583	119.220	123.306	117.836
	$10,000	108.036	158.153	174.954	168.687	237.104	119.697
Injury:	Death	251.474	502.017	326.174	212.162	416.368	429.131
	Hospitalization	326.868	131.487	193.947	132.420	132.778	117.239
	Treatment, no hospitalization	85.002	108.385	135.302	155.267	136.499	50.547
	Minor	27.292	37.443	31.508	29.162	31.538	25.897
Robbery $10 with:							
	Physical or verbal threat	45.409	97.777	82.007	90.923	91.893	73.218
	Weapon	79.197	97.295	109.388	77.370	86.917	72.140
Burglary and theft of $10		51.628	51.334	65.188	61.796	46.400	66.095
Rape		246.128	423.537	300.362	187.999	297.634	176.201
Bombing of building, 20 deaths		548.142	735.603	748.755	643.334	847.476	595.546

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 101 (Geometric means, by core-item-offense stimuli)

West region: Age—White males

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	23.014	19.011	17.498	17.539	20.464	17.100
	$10	42.044	31.858	29.577	31.836	38.682	36.199
	$50	55.645	71.092	58.820	56.174	60.835	69.337
	$100	66.290	72.252	76.113	62.564	75.121	68.216
	$1,000	145.106	147.429	143.385	142.156	153.119	178.440
	$10,000	202.148	257.608	235.899	220.728	263.614	351.939
Injury:	Death	964.150	1022.243	1516.670	889.734	913.716	697.861
	Hospitalization	203.322	298.459	288.771	288.628	345.788	310.757
	Treatment, no hospitalization	114.729	157.053	233.488	226.156	196.197	210.799
	Minor	31.438	15.386	28.390	29.858	26.087	42.619
Robbery $10 with:							
	Physical or verbal threat	172.540	165.265	189.089	225.632	172.989	139.994
	Weapon	165.915	149.608	249.755	242.113	251.275	184.814
Burglary and theft of $10		63.251	60.015	67.290	81.911	89.899	98.625
Rape		463.095	957.358	916.212	555.300	596.400	531.471
Bombing of building, 20 deaths		1251.595	2439.354	2665.206	1977.770	2390.721	2566.395

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 102 (Geometric means, by core-item-offense stimuli)

West region: Age—White females

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	23.988	24.831	22.803	22.233	21.028	18.836
	$10	37.866	36.659	40.000	38.460	47.166	35.865
	$50	68.294	96.446	72.299	65.396	57.246	69.340
	$100	81.680	105.816	82.281	79.536	88.668	97.611
	$1,000	143.899	194.852	160.676	161.411	199.241	198.414
	$10,000	217.940	310.206	278.523	244.606	342.979	258.598
Injury:	Death	843.108	1224.131	966.591	1397.261	1442.257	1122.426
	Hospitalization	182.986	484.323	401.310	418.109	327.968	361.331
	Treatment, no hospitalization	178.147	218.585	322.482	256.820	315.116	283.318
	Minor	22.360	32.176	41.323	36.416	42.501	53.661
Robbery $10 with:							
	Physical or verbal threat	113.933	178.173	167.164	223.781	227.328	130.947
	Weapon	39.407	207.611	204.991	159.529	197.088	211.293
Burglary and theft of $10		39.874	75.934	80.798	76.092	70.963	78.910
Rape		369.296	793.083	748.283	752.747	766.442	639.125
Bombing of building, 20 deaths		1007.954	2019.793	2073.611	2009.259	2284.815	2336.603

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 103 (Geometric means, by core-item-offense stimuli)

West region: Age—Black males

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	12.794	25.293	43.152	40.644	40.832	——
	$10	35.303	33.584	64.951	58.216	49.634	69.964
	$50	30.287	72.689	59.328	91.711	149.056	——
	$100	196.097	102.887	107.365	71.629	78.991	138.034
	$1,000	221.941	115.791	168.244	145.721	102.869	120.111
	$10,000	549.471	213.518	162.384	180.878	249.831	58.083
Injury:	Death	5572.008	355.409	1608.213	753.981	842.727	966.730
	Hospitalization	125.555	202.611	247.520	224.493	168.406	——
	Treatment, no hospitalization	20.000	102.702	185.487	256.297	362.910	40.918
	Minor	84.170	35.533	21.714	27.925	33.989	14.009
Robbery $10 with:							
	Physical or verbal threat	108.981	64.486	340.488	309.416	113.391	132.519
	Weapon	352.407	121.327	115.560	254.186	57.684	157.015
Burglary and theft of $10		44.254	87.362	57.699	307.060	141.249	——
Rape		263.158	1613.298	980.442	731.740	1226.040	1628.510
Bombing of building, 20 deaths		2797.367	1292.477	1145.308	2025.104	1735.570	2461.237

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 104 (Geometric means, by core-item-offense stimuli)

West region: Age—Black females

Offense		18–19	20–24	25–34	35–49	50–64	65+
Theft:	$1*	58.614	36.475	37.154	34.754	25.351	10.233
	$10	127.871	53.906	45.769	27.269	30.147	36.880
	$50	52.455	123.719	78.341	120.234	68.579	70.516
	$100	87.565	65.444	81.922	130.727	45.220	24.071
	$1,000	104.593	260.013	183.929	136.154	109.019	210.727
	$10,000	207.309	225.808	136.246	152.182	98.669	486.501
Injury:	Death	602.760	799.481	1141.338	404.052	548.636	1553.279
	Hospitalization	46.198	307.248	533.905	315.218	192.510	315.075
	Treatment, no hospitalization	210.477	138.038	140.841	179.714	65.544	250.000
	Minor	8.228	53.904	70.580	65.825	25.656	26.733
Robbery $10 with:							
	Physical or verbal threat	133.476	159.601	226.183	118.912	76.920	170.966
	Weapon	39.296	257.606	244.172	293.139	57.867	88.203
Burglary and theft of $10		33.475	82.864	61.667	163.088	100.541	100.000
Rape		678.111	842.416	489.920	447.525	232.107	780.527
Bombing of building, 20 deaths		1101.998	1809.900	2662.529	2354.800	643.704	1758.689

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts

Table 105 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by race, age, and sex: Northeast Census region

($Y = aX^b$)

Northeast	Correlation	Constant (a)	10^a	Slope (b)
White males				
18-19	.987	1.244	17.539	.253
20-24	.966	1.215	16.406	.267
25-34	.992	1.239	17.338	.258
35-49	.992	1.289	19.454	.256
50-64	.992	1.284	19.231	.271
65+	.986	1.197	15.740	.290
White females				
18-19	.998	1.370	23.442	.267
20-24	.982	1.321	20.941	.275
25-34	.998	1.386	24.322	.256
35-49	.995	1.396	24.889	.249
50-64	.993	1.371	23.496	.274
65+	.996	1.293	19.634	.280
Black males				
18-19	.912	.703	5.047	.353
20-24	.823	1.137	13.709	.242
25-34	.946	1.254	17.947	.190
35-49	.953	1.256	18.030	.219
50-64	.981	1.307	20.277	.219
65+	.358	1.473	29.717	.106
Black females				
18-19	.955	1.264	18.365	.238
20-24	.611	1.270	18.620	.193
25-34	.942	1.384	24.210	.170
35-49	.951	1.186	15.346	.201
50-64	.986	.955	9.016	.380
65+	.959	1.191	15.524	.318

Table 106 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by race, age, and sex: North Central Census region

($Y = aX^b$)

North Central	Correlation	Constant (a)	10^a	Slope (b)
White males				
18-19	.982	1.310	20.417	.260
20-24	.984	1.277	18.923	.285
25-34	.995	1.339	21.827	.264
35-49	.992	1.377	23.823	.248
50-64	.998	1.335	21.627	.283
65+	.992	1.202	15.922	.321
White females				
18-19	.974	1.452	28.314	.270
20-24	.984	1.444	27.797	.250
25-34	.998	1.411	25.763	.260
35-49	.999	1.370	23.442	.275
50-64	1.000	1.345	22.131	.312
65+	.993	1.232	17.061	.322
Black males				
18-19	.973	.903	7.998	.415
20-24	.877	1.546	35.156	.221
25-34	.513	1.795	62.374	.091
35-49	.929	1.424	26.546	.233
50-64	.944	1.619	41.591	.160
65+	.963	1.376	23.768	.268
Black females				
18-19	.938	1.346	22.182	.204
20-24	.899	1.675	47.315	.158
25-34	.903	1.640	43.652	.195
35-49	.948	1.772	59.156	.128
50-64	.948	1.645	44.157	.181
65+	.869	1.542	34.834	.190

Table 107 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by race, age, and sex: South Census region

($Y = aX^b$)

South	Correlation	Constant (*a*)	10^a	Slope (*b*)
White males				
18–19	.968	1.230	16.982	.307
20–24	.993	1.370	23.442	.244
25–34	.993	1.333	21.528	.262
35–49	.981	1.391	24.604	.247
50–64	.994	1.285	19.275	.296
65+	.995	1.260	18.197	.303
White females				
18–19	.992	1.404	25.351	.281
20–24	.995	1.350	22.387	.280
25–34	.997	1.339	21.827	.274
35–49	.996	1.396	24.889	.266
50–64	.992	1.409	25.645	.268
65+	.996	1.320	20.893	.292
Black males				
18–19	.929	1.394	24.774	.211
20–24	.773	1.607	40.458	.095
25–34	.980	1.417	26.123	.205
35–49	.891	1.482	30.334	.161
50–64	.892	1.424	26.546	.184
65+	.939	1.287	19.364	.251
Black females				
18–19	.684	1.528	33.729	.144
20–24	.973	1.548	35.318	.176
25–34	.979	1.435	27.227	.206
35–49	.983	1.492	31.046	.188
50–64	.963	1.420	26.303	.231
65+	.908	1.356	22.699	.200

Table 108 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by race, age, and sex: West Census region

($Y = aX^b$)

West	Correlation	Constant (*a*)	10^a	Slope (*b*)
White males				
18–19	.988	1.362	23.014	.243
20–24	.987	1.279	19.011	.291
25–34	.989	1.243	17.498	.294
35–49	.993	1.244	17.539	.284
50–64	.999	1.311	20.464	.282
65+	.995	1.233	17.100	.331
White females				
18–19	.998	1.380	23.988	.248
20–24	.982	1.395	24.831	.289
25–34	.998	1.358	22.803	.277
35–49	.995	1.347	22.233	.270
50–64	.993	1.323	21.038	.308
65+	.995	1.275	18.836	.330
Black males				
18–19	.895	1.107	12.794	.416
20–24	.945	1.403	25.293	.237
25–34	.882	1.635	43.152	.160
35–49	.952	1.609	40.644	.168
50–64	.797	1.611	40.832	.181
65+	−.217	−.030	.932	2.033
Black females				
18–19	.578	1.768	58.614	.108
20–24	.848	1.562	36.475	.222
25–34	.865	1.570	37.154	.172
35–49	.721	1.541	34.754	.192
50–64	.850	1.404	25.351	.170
65+	.886	1.010	10.233	.407

Occupation by income

The national-level scores by occupation and income (tables 109 to 114) indicate that the observed effects of both variables are additive. For each category of occupation the reported direct relationship with income appears to hold. For white-collar respondents in the highest income group, the geometric mean for a single death by injury is greater than that computed for a service worker earning less than $3,000 (1316 compared to 554, tables 109 and 112). Similarly, for blue-collar respondents earning more than $25,000 the geometric mean, 931 (table 110), is larger than the computed geometric mean for a service worker in the lowest income category.

For dollar values of theft, perceptions of severity again appear to conform to the hypothesized power function (table 115). All correlation coefficients are in the .99 range with little difference in their slopes for income categories of white-collar subjects. For other occupational categories the correlation coefficients are lower, particularly for subjects in farm and armed forces occupations, but the differences are not great.

However, the .76 correlation coefficient for subjects in the armed forces earning between $7,500 and $9,999 can be attributed in part to the small sample size which, as noted earlier, can lead to anomalies in the expected distribution.

In tables 116 to 135, the multivariate distributions of geometric mean scores by census region, occupation, and income are presented. In general, the geometric mean scores are less consistent than the national-level results. The reported relationship between income, occupation, and severity scores does not appear to hold when tabulated by census region. For instance, subjects in the West in the white-collar and service categories who earn less than $3,000 generate higher geometric means for serious injury than corresponding occupations with incomes greater than $25,000. The differences can be attributed in part, as noted earlier, to the small sample size. Particularly in the farm category where there are numerous departures from the expected distribution, the number of cases in most sample cells falls below 25.

Table 109 (Geometric means, by core-item-offense stimuli)

National: Income—White collar

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	18.535	21.184	22.182	21.928	19.999	17.989	23.550
	$10	32.5167	38.3949	41.0735	39.7915	34.0557	31.0915	39.8501
	$50	58.837	63.419	63.572	66.330	65.381	59.808	66.620
	$100	76.722	80.007	85.511	83.934	78.161	70.186	79.839
	$1,000	140.605	158.373	163.440	162.058	152.629	137.255	156.511
	$10,000	245.920	261.868	277.723	278.110	250.573	233.009	235.995
Injury:	Death	809.42	963.83	817.08	938.34	1063.51	1315.93	945.91
	Hospitalization	248.54	294.27	286.52	328.36	371.25	369.46	329.43
	Treatment, no hospitalization	184.766	191.502	231.502	247.525	244.298	200.517	226.344
	Minor	30.1766	33.3508	40.2254	33.2805	33.7071	26.2343	30.1125
Robbery $10 with:	Physical or verbal threat	133.449	150.388	156.319	172.346	189.956	205.918	186.079
	Weapon	138.118	150.500	177.383	191.015	185.892	212.263	186.868
Burglary	and theft of $10	45.499	69.204	72.500	76.313	76.375	87.204	80.435
Rape		434.52	607.57	582.38	712.30	751.46	882.11	753.24
Bombing of building,	20 deaths	1458.07	1709.22	1655.44	1940.50	1981.94	2368.10	1904.97

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 110 (Geometric means, by core-item-offense stimuli)

National: Income—Blue collar

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	18.4842	22.5372	25.2348	23.9332	24.6547	25.4214	20.573
	$10	32.5167	37.5923	46.2982	39.1316	39.3312	44.8388	34.365
	$50	55.606	60.220	59.678	69.192	70.324	54.418	54.249
	$100	63.937	74.925	81.028	83.368	80.505	91.174	73.946
	$1,000	122.426	135.083	148.256	152.659	155.773	148.678	132.07
	$10,000	173.717	210.351	238.028	238.398	223.849	221.902	198.256
Injury:	Death	481.63	602.28	583.30	614.73	750.54	930.85	660.51
	Hospitalization	177.55	185.61	186.61	242.45	269.35	199.12	189.53
	Treatment, no hospitalization	96.875	124.953	160.786	150.965	163.632	170.156	138.150
	Minor	18 9871	24.7490	27.1255	30.4015	30.7836	24.8147	28.637
Robbery $10 with:	Physical or verbal threat	66.272	107.420	125.146	133.946	142.339	173.553	131.194
	Weapon	97.531	121.593	148.745	156.510	197.413	197.177	159.587
Burglary	and theft of $10	55.308	69.713	62.763	73.613	83.919	59.843	64.964
Rape		410.20	452.97	421.68	491.48	543.92	651.13	460.54
Bombing of building,	20 deaths	1035.40	1223.93	1392.06	1471.21	1529.23	1002.70	1523.46

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

To illustrate, figures 48 and 49 present the plotted relationship of scores for two examples from the national and census region results by occupation and income. In figure 48 the national-level results produce a correlation coefficient of .76 for subjects in the armed forces earning between $7,500 and $9,999. The plotted geometric mean distribution shows the apparent anomalies or ordering effects;

Table 111 (Geometric means, by core-item-offense stimuli)

National: Income—Farm

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	15.5346	19.1867	29.3859	17.9432	15.1880	18.9977	22.7196
	$10	32.3455	31.6706	41.8945	26.5897	26.7910	39.0679	50.9182
	$50	32.320	50.650	62.069	65.028	80.362	47.060	89.334
	$100	76.722	67.587	75.658	68.264	84.819	62.820	71.309
	$1,000	125.958	122.137	150.703	131.597	169.757	190.217	190.092
	$10,000	195.340	179.576	149.720	197.498	376.823	200.573	435.26
Injury:	Death	381.77	369.61	443.73	456.95	654.10	1510.30	1974.86
	Hospitalization	107.45	132.73	355.95	120.49	198.46	293.27	248.66
	Treatment, no hospitalization	127.460	102.150	60.384	128.439	219.468	100.199	257.65
	Minor	29.2493	15.7412	18.0080	1.7886	21.8236	32.2378	31.148
Robbery $10 with:	Physical or verbal threat	89.242	94.627	87.172	116.338	88.370	220.006	135.685
	Weapon	106.358	112.005	187.042	132.326	195.394	153.058	149.641
Burglary and theft of $10		32.047	48.262	55.202	56.612	68.420	39.457	116.016
Rape		271.99	316.85	912.57	569.30	390.22	599.28	1109.82
Bombing of building, 20 deaths		732.73	876.10	1255.82	1044.91	1093.92	1812.34	1718.95

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 112 (Geometric means, by core-item-offense stimuli)

National: Income—Service

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	26.2482	24.9115	27.5740	27.0583	27.4410	20.7157	26.2482
	$10	38.8382	42.2843	43.1477	45.7084	45.8636	31.4699	44.2204
	$50	53.636	69.567	69.738	64.744	66.504	62.501	60.157
	$100	70.452	67.826	69.830	93.398	97.953	76.520	81.048
	$1,000	133.445	145.211	138.150	157.408	155.106	138.082	139.439
	$10,000	208.547	218.133	189.510	239.324	248.453	198.493	208.867
Injury:	Death	554.07	417.85	726.87	826.18	662.31	1026.94	558.69
	Hospitalization	151.55	231.70	200.45	234.15	250.90	252.81	173.21
	Treatment, no hospitalization	141.727	133.077	144.284	201.087	196.241	197.241	143.120
	Minor	23.5751	34.5257	30.3912	35.0194	39.3326	40.3741	33.9795
Robbery $10 with:	Physical or verbal threat	92.322	126.502	136.399	140.547	165.782	176.544	128.249
	Weapon	106.358	113.252	118.906	170.005	159.215	160.826	134.664
Burglary and theft of $10		52.428	64.883	62.782	66.487	68.742	64.734	73.190
Rape		480.89	404.23	564.07	580.72	472.05	461.76	336.45
Bombing of building, 20 deaths		1051.36	1063.66	1179.69	1374.93	1245.15	1618.61	1245.98

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

for the theft of $50 the geometric mean, 173, is substantially higher than the geometric mean for the theft of $100, 69.

Similarly, by census region, the plotted relationship indicates substantial variation from the expected least square line. In figure 49, for instance, the geometric means for subjects reporting their primary occupation as farming and their income as greater than $25,000, the correlation is .62 and the slope .21. But departures in the ordering of the geometric means are substantial; theft of $50 receives a higher score (60) than the theft of $100 (32) and almost the same score as that of $10,000 (63). Thus the plotted relationship of these variables as illustrated in their graphs would produce inconclusive results.

With these exceptions noted, it may be suggested that the data for occupation-income generally conform to the expected result. Tables 136 to 139 show that the correlations are very high nationally and within census regions. The regression slopes, although not indicating a clear pattern by income for the various occupational categories, are not very dissimilar and exhibit ranges observed for the other demographic factors.

Table 113 (Geometric means, by core-item-offense stimuli)

National: Income—Armed Forces

Offense		Under $3,000	$3,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-24,999	$25,000+	Not available
Theft:	$1*	12.8174	14.0961	37.2306	60.6317	17.6644	6.002	14.1580
	$10	20.000	26.8180	39.5703	80.7850	28.9392	7.7169	20.4111
	$50	26.822	50.919	73.450	110.581	40.462	120.085	——
	$100	71.006	81.562	68.654	112.124	78.633	76.520	89.355
	$1,000	113.389	149.237	164.651	163.974	121.105	189.956	208.956
	$10,000	114.530	284.137	206.544	213.855	165.934	560.203	185.692
Injury:	Death	1000.00	902.00	954.59	980.42	884.37	2036.37	343.22
	Hospitalization	209.58	156.46	319.53	1532.09	326.58	1002.69	——
	Treatment, no hospitalization	134.808	161.359	177.625	240.034	191.070	415.701	378.877
	Minor	20.000	28.3522	20.2057	11.7269	25.5801	14.3712	25.1743
Robbery $10 with:	Physical or verbal threat	25.000	74.413	263.476	428.051	271.183	225.627	121.965
	Weapon	35.000	180.686	361.418	192.552	214.318	202.394	872.011
Burglary	and theft of $10	30.892	29.908	127.765	109.385	93.792	446.258	——
Rape		1000.00	789.73	800.53	2157.90	376.63	1631.11	470.47
Bombing of building,	20 deaths	1683.45	1367.25	2545.29	2766.48	1746.85	3045.81	1545.88

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 114 (Geometric means, by core-item-offense stimuli)

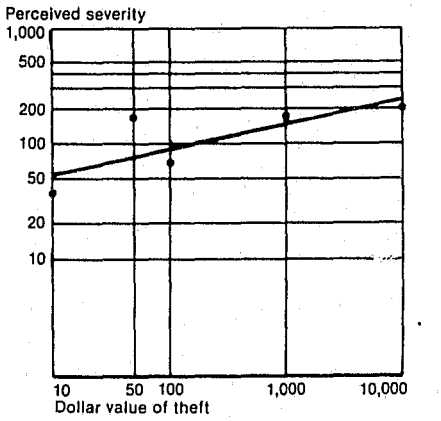
National: Income—Occupation not available

Offense		Under $3,000	$3,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-24,999	$25,000+	Not available
Theft:	$1*	14.159	22.702	21.1141	24.2454	18.7712	17.744	20.937
	$10	28.6684	39.5321	41.2777	42.5840	39.8116	32.2151	37.3039
	$50	42.502	62.919	61.208	71.002	57.051	57.599	58.350
	$100	59.041	71.929	90.607	83.644	78.806	81.336	84.923
	$1,000	124.530	144.455	163.925	170.935	166.735	150.219	157.141
	$10,000	154.376	224.408	309.389	266.565	313.852	266.407	248.35
Injury:	Death	348.87	559.44	783.57	906.67	927.84	919.92	688.77
	Hospitalization	132.74	198.46	229.32	250.43	277.16	250.90	238.51
	Treatment, no hospitalization	88.456	144.218	187.058	217.472	232.690	310.635	174.140
	Minor	29.0366	36.4476	39.5327	47.0405	40.1195	43.0979	39.3957
Robbery $10 with:	Physical or verbal threat	73.288	101.849	140.688	149.406	154.029	159.394	121.968
	Weapon	85.745	111.803	136.337	173.212	157.304	193.071	159.428
Burglary	and theft of $10	49.495	64.929	60.052	71.226	68.833	72.306	61.30
Rape		248.46	371.31	512.26	635.32	651.92	862.27	438.43
Bombing of building,	20 deaths	851.69	1226.91	1419.76	1543.49	1718.94	2188.92	1734.01

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Figure 48
(Dollar value of theft vs. perceived severity)

National level: Armed forces, income level $7,500-$9,999



Line is plot of expected values
• = observed values

Table 115 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by occupation and family income: Total United States

($Y = aX^b$)

Total U.S.	Correlation	Constant (a)	10^a	Slope (b)
White collar				
Under $3,000	.995	1.268	18.535	.288
3,000–7,499	.997	1.326	21.184	.280
7,500–9,999	.997	1.346	22.182	.280
10,000–14,999	.998	1.341	21.928	.282
15,000–24,999	.992	1.301	19.999	.284
25,000+	.994	1.255	17.989	.286
Not available	.994	1.372	23.550	.259
Blue collar				
Under $3,000	.983	1.267	18.493	.256
3,000–7,499	.996	1.353	22.542	.250
7,500–9,999	.995	1.402	25.235	.247
10,000–14,999	.993	1.379	23.933	.258
15,000–24,999	.989	1.392	24.660	.250
25,000+	.979	1.405	25.410	.243
Not available	.991	1.313	20.559	.256
Farm				
Under $3,000	.954	1.191	15.524	.284
3,000–7,499	.991	1.283	19.187	.253
7,500–9,999	.951	1.467	29.309	.198
10,000–14,999	.971	1.254	17.947	.275
15,000–24,999	.980	1.182	15.206	.356
25,000+	.979	1.356	22.699	.277
Not available	.979	1.356	22.699	.312
Service				
Under $3,000	.994	1.419	26.242	.231
3,000–7,499	.991	1.396	24.889	.241
7,500–9,999	.989	1.440	27.542	.217
10,000–14,999	.991	1.432	27.040	.244
15,000–24,999	.991	1.438	27.416	.245
25,000+	.980	1.316	20.701	.259
Not available	.994	1.419	26.242	.231
Armed forces				
Under $3,000	.893	1.108	12.823	.270
3,000–7,499	.989	1.149	14.093	.336
7,500–9,999	.762	1.571	37.239	.201
10,000–14,999	.994	1.783	60.674	.140
15,000–24,999	.958	1.247	17.660	.259
25,000+	.891	.778	5.998	.521
Not available	.902	1.151	14.158	.325
Not available				
Under $3,000	.978	1.226	16.827	.257
3,000–7,499	.997	1.356	22.699	.255
7,500–9,999	.996	1.325	21.135	.294
10,000–14,999	.996	1.385	24.266	.268
15,000–24,999	.997	1.274	18.793	.308
25,000+	.994	1.249	17.742	.302
Not available	.992	1.321	20.941	.278

Table 116 (Geometric means, by core-item-offense stimuli)

Northeast region: Income—White collar

Offense	Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft: $1*	15.959	20.091	16.032	22.182	20.184	17.458	23.121
$10	33.362	36.322	32.724	36.738	35.056	30.108	40.010
$50	58.064	52.052	45.614	67.956	63.812	54.280	56.308
$100	66.639	71.250	68.997	88.589	70.146	62.882	64.964
$1,000	133.990	138.026	144.654	154.075	145.052	127.512	140.580
$10,000	310.322	210.230	240.813	256.262	234.363	202.053	185.993
Injury: Death	463.299	1381.341	885.703	830.249	1169.836	1007.410	895.752
Hospitalization	200.084	244.905	213.321	336.595	346.560	341.115	280.812
Treatment, no hospitalization	335.365	167.488	198.024	266.767	213.988	246.533	193.723
Minor	23.089	39.244	40.090	36.296	33.055	30.338	27.829
Robbery $10 with: Physical or verbal threat	117.237	234.579	150.310	161.766	189.658	174.336	195.745
Weapon	166.234	148.345	156.172	201.334	166.211	205.630	121.211
Burglary and theft of $10	25.775	54.049	50.668	75.447	65.917	77.626	50.263
Rape	412.693	641.948	451.492	750.797	707.809	792.470	566.060
Bombing of building, 20 deaths	1499.668	1473.861	1537.437	1830.595	1887.123	2154.485	1488.373

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 117 (Geometric means, by core-item-offense stimuli)

Northeast region: Income—Blue collar

Offense	Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft: $1*	17.161	16.145	24.099	20.512	22.439	20.845	15.740
$10	31.206	29.458	41.286	36.695	36.767	37.921	26.811
$50	37.913	43.935	59.920	54.986	59.438	42.804	53.125
$100	59.239	61.912	64.924	79.218	68.012	68.579	67.347
$1,000	136.542	115.551	125.223	132.069	133.765	131.102	117.216
$10,000	151.558	188.644	194.110	234.484	189.868	171.143	216.150
Injury: Death	412.358	369.931	658.290	643.015	759.685	1395.093	493.428
Hospitalization	195.127	188.993	178.678	232.436	249.716	156.368	232.131
Treatment, no hospitalization	87.393	135.049	162.388	171.076	169.247	165.731	172.009
Minor	17.779	35.994	25.375	35.714	29.202	19.927	24.412
Robbery $10 with: Physical or verbal threat	62.613	79.262	140.233	139.539	142.171	180.021	137.372
Weapon	68.853	165.967	114.754	139.074	153.819	167.672	158.619
Burglary and theft of $10	49.126	53.994	49.420	64.650	68.347	46.613	75.710
Rape	535.026	352.121	391.534	472.159	545.095	553.317	569.965
Bombing of building, 20 deaths	854.689	1418.541	1286.986	1327.013	1316.669	1759.952	1419.148

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 118 (Geometric means, by core-item-offense stimuli)

Northeast region: Income—Farm

Offense		Under $3,000	$3,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-24,999	$25,000+	Not available
Theft:	$1*	664.273	9.247	25.293	24.889	12.331	50.816	76.208
	$10	1000.00	24.496	——	25.334	19.455	61.815	42.803
	$50	30.033	21.806	150.000	58.623	51.402	——	139.342
	$100	——	128.415	14.549	85.320	64.288	33.692	24.914
	$1,000	126.382	182.697	152.941	100.093	145.990	109.528	97.210
	$10,000	——	340.922	134.516	105.957	195.553	49.869	24.914
Injury:	Death	100000.000	579.993	——	1023.136	486.036	558.950	127.128
	Hospitalization	122.608	364.125	200.000	70.705	69.854	——	461.437
	Treatment, no hospitalization	——	290.360	93.239	50.000	78.152	45.327	208.718
	Minor	——	41.697	36.346	51.000	91.641	20.204	——
Robbery $10 with:								
	Physical or verbal threat	2000.000	69.076	——	158.979	86.276	142.392	110.962
	Weapon	——	436.615	33.424	197.163	340.416	96.222	——
Burglary and theft of $10		22.254	46.779	100.000	68.399	56.084	——	267.008
Rape		616.725	332.918	505.204	621.736	166.280	595.123	672.066
Bombing of building, 20 deaths		919.137	1217.336	1159.985	778.777	723.372	1806.431	1183.414

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 119 (Geometric means, by core-item-offense stimuli)

Northeast region: Income—Service

Offense		Under $3,000	$3,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-24,999	$25,000+	Not available
Theft:	$1*	16.596	21.979	19.999	27.990	22.387	16.982	19.275
	$10	26.415	37.056	32.883	48.715	46.158	20.484	33.158
	$50	57.147	53.305	49.664	54.273	45.553	85.924	34.113
	$100	65.452	47.940	82.718	75.863	91.155	63.381	82.756
	$1,000	113.296	121.887	128.545	146.520	127.116	133.684	94.595
	$10,000	201.526	144.713	195.902	183.834	258.696	181.811	157.845
Injury:	Death	356.848	488.633	579.486	948.917	760.817	663.627	367.868
	Hospitalization	157.173	317.738	153.441	202.937	196.633	265.675	118.775
	Treatment, no hospitalization	114.649	116.155	146.611	164.622	213.801	238.343	107.489
	Minor	20.399	27.245	25.243	47.436	48.325	35.886	23.307
Robbery $10 with:								
	Physical or verbal threat	60.540	119.441	112.858	190.782	174.159	123.432	117.756
	Weapon	162.308	82.746	117.600	160.919	144.796	194.956	100.823
Burglary and theft of $10		52.438	69.987	52.504	69.416	48.284	85.679	47.772
Rape		358.847	537.449	605.116	830.659	553.202	441.691	212.061
Bombing of building, 20 deaths		772.081	1123.120	1369.313	1383.515	1149.509	1339.531	816.284

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 120 (Geometric means, by core-item-offense stimuli)

Northeast region: Income—Occupation not available

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	17.022	20.230	18.579	21.577	18.707	13.082	18.579
	$10	29.071	33.568	31.614	35.299	31.041	28.146	28.482
	$50	47.884	54.900	42.614	64.578	54.100	47.216	57.424
	$100	55.133	58.415	79.755	78.042	79.869	71.249	72.741
	$1,000	110.215	124.410	131.000	149.637	155.284	139.310	124.360
	$10,000	167.803	171.595	180.100	225.323	209.551	305.135	191.833
Injury:	Death	244.195	516.627	326.376	699.180	834.639	853.691	437.445
	Hospitalization	159.313	223.656	245.665	249.279	315.345	350.234	208.840
	Treatment, no hospitalization	121.347	120.010	154.559	188.360	211.168	367.010	143.230
	Minor	29.524	32.819	43.734	45.987	48.659	42.709	50.687
Robbery $10 with:	Physical or verbal threat	57.866	95.737	94.654	121.986	157.311	149.068	82.565
	Weapon	92.085	91.212	117.907	139.190	147.522	237.273	141.438
Burglary and theft of $10		56.197	60.538	41.394	53.855	82.585	69.521	63.766
Rape		199.949	359.188	378.003	741.527	690.268	862.077	346.303
Bombing of building, 20 deaths		781.978	1075.587	900.534	1295.431	1604.625	2198.660	1257.839

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 121 (Geometric means, by core-item-offense stimuli)

North Central region: Income—White collar

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	20.464	22.803	18.750	20.845	20.749	16.444	30.061
	$10	35.160	42.142	38.479	39.825	36.785	31.411	47.495
	$50	53.654	66.990	53.416	66.764	61.926	57.636	69.433
	$100	70.461	87.595	81.177	85.351	78.263	77.504	98.230
	$1,000	141.527	175.905	162.185	168.079	153.790	152.164	159.010
	$10,000	196.143	287.710	281.698	311.358	248.283	287.394	227.212
Injury:	Death	1240.930	998.382	556.306	769.033	901.909	1643.435	675.693
	Hospitalization	301.202	272.328	287.273	352.564	378.797	332.609	323.144
	Treatment, no hospitalization	161.090	194.379	180.378	269.442	237.455	287.786	218.425
	Minor	28.387	49.684	32.034	32.263	34.020	27.481	36.029
Robbery $10 with:	Physical or verbal threat	148.761	176.007	130.305	159.589	188.777	217.059	154.346
	Weapon	117.706	180.786	201.862	193.622	186.315	226.830	179.760
Burglary and theft of $10		46.335	63.039	62.479	84.616	69.053	81.959	99.940
Rape		524.473	664.004	459.356	643.589	737.653	873.637	648.666
Bombing of building, 20 deaths		1723.051	1817.673	1292.274	1960.016	1811.666	2389.533	1570.737

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 122 (Geometric means, by core-item-offense stimuli)

North Central region: Income—Blue collar

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	12.882	35.563	29.376	28.054	24.831	32.137	23.496
	$10	26.830	58.177	51.254	42.357	39.781	41.382	36.098
	$50	47.308	78.976	70.784	79.287	72.417	96.908	78.644
	$100	80.867	81.293	86.941	81.352	89.759	91.592	60.163
	$1,000	141.352	158.896	153.721	159.306	168.091	160.174	154.067
	$10,000	317.452	220.138	252.179	217.667	245.319	209.772	212.781
Injury:	Death	504.368	937.936	588.248	618.295	737.087	662.416	1105.40
	Hospitalization	186.984	224.091	244.209	266.050	271.308	304.258	145.626
	Treatment, no hospitalization	135.155	123.916	170.147	141.262	161.771	140.025	149.310
	Minor	28.818	24.061	28.959	30.972	36.280	38.407	39.182
Robbery $10 with:	Physical or verbal threat	76.997	141.197	146.009	149.475	157.051	145.734	161.112
	Weapon	163.262	156.627	129.590	181.360	251.070	168.824	177.365
Burglary and theft of $10		52.606	89.941	75.059	87.954	90.043	78.479	72.162
Rape		419.377	589.634	534.241	456.693	593.299	748.590	471.909
Bombing of building, 20 deaths		1675.480	1449.260	1269.272	1421.569	1719.318	1625.591	1678.097

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 123 (Geometric means, by core-item-offense stimuli)

North Central region: Income—Farm

Offense		Under $3,000	$3,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-24,999	$25,000+	Not available
Theft:	$1*	27.733	22.594	28.973	16.444	18.197	15.922	23.335
	$10	56.499	54.790	26.358	28.809	30.643	36.437	48.199
	$50	52.244	49.412	84.242	54.150	70.099	38.673	67.814
	$100	71.968	70.032	182.395	66.579	94.824	119.804	44.865
	$1,000	172.719	179.420	149.660	133.699	177.898	214.756	215.805
	$10,000	212.724	281.600	183.590	218.813	305.912	336.938	397.445
Injury:	Death	572.491	825.191	454.688	437.127	604.520	1707.891	1579.32
	Hospitalization	167.193	110.785	534.171	164.810	253.330	440.441	218.863
	Treatment, no hospitalization	168.188	160.173	89.185	168.096	250.100	129.870	302.482
	Minor	18.969	16.503	8.260	23.437	26.996	106.766	45.356
Robbery $10 with:								
	Physical or verbal threat	98.740	172.600	66.250	89.839	91.212	161.910	171.943
	Weapon	125.015	166.008	146.991	115.543	128.509	448.949	320.920
Burglary and theft of $10		50.659	27.999	94.546	45.781	49.608	38.878	82.340
Rape		486.739	418.698	1721.038	699.800	384.000	656.192	1079.957
Bombing of building, 20 deaths		1269.204	1643.988	1571.740	1286.107	1375.523	1965.282	1351.533

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 124 (Geometric means, by core-item-offense stimuli)

North Central region: Income—Service

Offense		Under $3,000	$3,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-24,999	$25,000+	Not available
Theft:	$1*	29.309	27.040	27.040	23.388	28.907	22.131	32.285
	$10	51.432	44.772	49.725	43.425	33.201	42.117	56.427
	$50	65.207	83.333	69.783	57.604	81.414	57.037	81.885
	$100	62.649	87.679	59.099	110.958	87.429	40.567	119.506
	$1,000	151.597	170.178	136.923	157.411	153.748	151.986	223.283
	$10,000	188.839	277.547	219.143	297.856	189.608	275.109	324.064
Injury:	Death	420.197	536.477	813.499	796.363	541.875	1217.514	599.689
	Hospitalization	195.380	288.519	163.058	195.975	264.760	220.710	242.567
	Treatment, no hospitalization	128.777	163.696	143.076	220.163	161.365	170.786	275.204
	Minor	30.557	42.799	47.934	35.051	44.859	17.613	53.431
Robbery $10 with:								
	Physical or verbal threat	121.047	164.962	182.321	136.763	140.300	192.838	132.024
	Weapon	185.221	131.989	122.865	178.799	145.234	113.761	235.346
Burglary and theft of $10		75.709	69.230	63.943	73.842	74.442	66.913	87.954
Rape		375.425	523.155	513.690	456.723	409.097	543.703	456.658
Bombing of building, 20 deaths		1333.455	1279.827	1211.296	1252.021	1126.751	1595.572	2455.034

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 125 (Geometric means, by core-item-offense stimuli)

North Central region: Income—Occupation not available

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	16.520	23.878	21.478	24.604	22.699	17.783	16.482
	$10	27.880	42.457	48.293	49.568	53.719	34.496	36.200
	$50	42.749	64.294	56.160	73.713	60.858	56.650	52.171
	$100	69.004	78.896	95.498	103.685	87.305	87.714	72.663
	$1,000	147.670	156.385	180.004	184.560	177.048	171.063	153.555
	$10,000	167.005	242.756	357.176	383.987	382.692	249.192	339.540
Injury:	Death	515.486	526.044	1018.232	1104.319	1039.419	1077.019	730.581
	Hospitalization	198.070	188.098	249.310	243.103	245.228	332.620	204.202
	Treatment, no hospitalization	92.725	143.132	197.653	297.315	244.315	277.639	156.923
	Minor	28.035	42.283	39.031	36.428	38.212	43.586	32.978
Robbery $10 with:								
	Physical or verbal threat	90.262	96.653	158.347	157.845	170.063	188.316	105.300
	Weapon	96.077	118.291	153.720	207.460	171.932	178.514	166.346
Burglary and theft of $10		67.410	69.777	67.532	72.298	68.091	71.365	57.028
Rape		306.670	352.067	607.417	582.933	704.763	866.314	373.495
Bombing of building, 20 deaths		1027.203	1366.027	1637.806	1738.801	1648.211	1925.734	1573.845

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 126 (Geometric means, by core-item-offense stimuli)

South region: Income—White collar

Offense	Under $3,000	$3,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-24,999	$25,000+	Not available
Theft: $1*	23.227	21.330	27.416	22.646	20.989	21.928	23.014
$10	36.913	35.067	48.301	40.047	36.111	36.327	37.490
$50	62.269	72.903	78.320	67.429	65.447	67.871	75.665
$100	91.805	79.197	98.385	78.468	90.921	70.397	94.714
$1,000	147.714	153.632	171.819	157.174	152.199	136.881	171.795
$10,000	225.180	256.374	309.798	256.582	274.988	225.305	281.286
Injury: Death	666.242	783.006	643.714	888.092	941.899	1577.265	1204.430
Hospitalization	282.190	333.523	256.330	315.470	310.422	367.351	383.219
Treatment, no hospitalization	120.753	176.288	260.495	197.543	259.656	253.174	271.120
Minor	32.905	25.604	47.420	29.828	32.963	22.122	29.486
Robbery $10 with: Physical or verbal threat	144.701	104.732	143.123	163.460	171.562	225.442	193.073
Weapon	126.827	109.846	176.866	168.426	183.703	209.745	237.391
Burglary and theft of $10	72.364	81.318	85.312	73.368	77.670	103.672	92.800
Rape	378.848	568.420	650.651	633.621	728.290	1148.600	1083.619
Bombing of building, 20 deaths	1165.098	1459.527	1623.735	1695.367	1874.468	2335.708	2258.244

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 127 (Geometric means, by core-item-offense stimuli)

South region: Income—Blue collar

Offense	Under $3,000	$3,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-24,999	$25,000+	Not available
Theft: $1*	19.861	21.184	24.660	24.831	26.303	22.909	20.893
$10	26.376	32.339	44.674	39.018	41.438	52.965	33.606
$50	56.960	62.052	56.995	70.480	65.165	33.199	42.773
$100	55.268	79.945	86.227	87.842	80.200	79.294	90.142
$1,000	104.140	130.906	149.167	153.645	150.809	140.104	118.203
$10,000	126.494	263.806	235.825	232.882	199.095	203.076	168.413
Injury: Death	443.414	494.207	488.505	498.852	761.464	1050.305	350.737
Hospitalization	125.842	158.175	159.228	202.574	222.090	126.105	165.508
Treatment, no hospitalization	77.053	112.426	133.772	127.359	148.660	144.294	106.522
Minor	16.555	21.854	28.254	26.022	23.113	16.421	26.839
Robbery $10 with: Physical or verbal threat	64.507	94.358	94.906	96.863	114.416	172.159	78.920
Weapon	104.924	99.635	176.215	137.307	159.333	220.602	149.189
Burglary and theft of $10	56.214	64.330	69.542	65.978	73.332	50.722	61.785
Rape	294.076	384.794	320.027	427.521	516.482	645.820	283.506
Bombing of building, 20 deaths	704.363	988.222	1289.806	1442.757	1378.495	1077.619	1366.779

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 128 (Geometric means, by core-item-offense stimuli)

South region: Income—Farm

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	9.977	18.535	27.416	17.458	8.610	16.672	14.257
	$10	26.151	26.067	52.682	25.610	20.034	35.839	48.943
	$50	18.076	53.103	49.139	81.922	81.143	65.546	163.361
	$100	65.407	63.188	45.335	75.925	62.205	37.144	41.234
	$1,000	99.449	98.081	140.004	150.911	154.033	191.705	201.235
	$10,000	189.239	148.076	139.065	257.318	619.715	225.791	1158.158
Injury:	Death	255.925	206.074	325.126	422.760	780.913	1808.300	2479.252
	Hospitalization	56.380	122.412	97.462	92.640	73.976	101.957	176.566
	Treatment, no hospitalization	85.852	83.319	39.410	191.909	127.750	83.930	232.989
	Minor	36.292	13.247	96.263	77.084	13.017	25.231	35.461
Robbery $10 with:								
	Physical or verbal threat	84.991	63.458	115.566	145.226	64.612	404.650	62.697
	Weapon	107.179	81.604	500.000	134.754	432.470	117.290	113.613
Burglary								
	and theft of $10	22.252	62.262	35.029	59.287	73.454	37.353	146.408
Rape		207.490	248.393	171.325	529.523	469.105	303.234	1666.905
Bombing of building,								
	20 deaths	415.608	551.198	585.519	1336.009	420.928	1066.657	2922.523

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 129 (Geometric means, by core-item-offense stimuli)

South region: Income—Service

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	19.861	26.669	33.113	27.861	38.548	17.865	41.783
	$10	38.921	45.008	44.328	45.805	66.690	28.002	58.103
	$50	48.570	64.260	85.853	75.256	103.724	58.072	115.273
	$100	82.991	65.735	75.795	86.421	123.140	43.127	79.745
	$1,000	130.407	134.941	137.825	165.019	179.177	111.692	166.294
	$10,000	250.944	192.381	176.145	245.323	387.928	145.501	222.654
Injury:	Death	474.479	291.566	682.255	687.756	526.304	958.575	494.457
	Hospitalization	124.242	178.043	284.597	304.021	294.947	300.560	239.457
	Treatment, no hospitalization	160.355	103.204	122.395	184.383	266.991	111.194	159.150
	Minor	22.022	32.148	26.801	31.259	30.514	26.105	44.100
Robbery $10 with:								
	Physical or verbal threat	40.470	102.372	102.108	108.238	176.357	205.183	137.426
	Weapon	64.666	99.205	103.329	134.693	150.657	118.504	134.215
Burglary								
	and theft of $10	45.471	62.578	92.182	72.805	109.867	58.977	110.354
Rape		476.342	300.241	711.171	523.781	436.919	486.348	497.820

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 130 (Geometric means, by core-item-offense stimuli)

South region: Income—Occupation not available

Offense	Under $3,000	$3,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-24,999	$25,000+	Not available
Theft: $1*	18.197	23.768	21.878	26.977	20.845	17.906	29.785
$10	29.392	40.893	41.238	49.151	44.658	25.561	52.756
$50	41.829	67.053	80.772	68.394	58.563	73.458	64.946
$100	58.946	76.134	93.517	78.203	70.735	81.801	102.853
$1,000	122.781	143.361	172.399	185.269	155.587	133.084	189.589
$10,000	135.185	238.242	378.695	244.047	291.842	236.762	255.430
Injury: Death	223.235	502.174	809.554	865.691	680.844	723.831	674.610
Hospitalization	100.346	168.920	168.195	225.047	229.151	393.655	262.595
Treatment, no hospitalization	73.091	128.438	177.541	191.522	173.868	273.876	229.124
Minor	32.976	33.191	39.967	48.084	38.181	45.719	29.581
Robbery $10 with:							
Physical or verbal threat	72.946	97.055	125.340	181.910	121.885	125.711	181.350
Weapon	76.114	108.990	146.484	171.583	125.825	179.293	139.680
Burglary and theft of $10	40.019	66.841	62.516	74.607	62.775	88.095	59.155
Rape	236.977	320.119	451.270	652.883	571.437	705.975	553.729
Bombing of building, 20 deaths	725.384	1005.310	1376.252	1424.406	1590.540	2299.139	2116.219

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 131 (Geometric means, by core-item-offense stimuli)

West region: Income—White collar

Offense	Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft: $1*	12.303	20.370	28.708	22.080	17.701	15.849	18.493
$10	22.010	41.376	44.963	43.081	27.765	25.203	34.660
$50	61.213	57.167	83.192	62.584	71.890	60.447	65.174
$100	69.663	79.940	89.981	86.284	72.131	70.065	65.581
$1,000	132.714	164.306	175.168	171.052	160.695	131.541	154.272
$10,000	299.065	286.925	251.730	296.069	238.993	221.700	265.196
Injury: Death	1167.064	959.864	1836.443	1549.175	1308.167	1024.284	1056.739
Hospitalization	184.192	309.569	513.038	304.836	501.732	460.980	331.303
Treatment, no hospitalization	208.389	237.762	300.397	289.671	270.707	255.618	227.811
Minor	38.264	35.156	41.364	37.241	34.965	26.910	28.154
Robbery $10 with: Physical or verbal threat	111.310	149.985	241.822	223.364	218.481	205.620	208.345
Weapon	187.843	147.347	170.252	215.267	212.421	205.108	242.350
Burglary and theft of $10	34.694	74.047	105.128	70.530	99.553	88.548	81.308
Rape	495.540	577.623	911.646	919.694	859.063	719.402	770.327
Bombing of building, 20 deaths	1827.888	2307.574	2560.407	2507.937	2528.372	2655.104	2670.938

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 132 (Geometric means, by core-item-offense stimuli)

West region: Income—Blue collar

Offense	Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft: $1*	27.040	19.143	21.777	20.701	24.378	23.281	23.988
$10	35.047	37.665	50.787	37.423	38.978	51.859	46.988
$50	97.287	52.870	49.551	72.236	91.216	46.904	51.486
$100	65.853	70.949	87.034	84.764	81.789	174.486	77.675
$1,000	133.005	138.402	178.614	172.775	172.758	162.825	152.245
$10,000	189.603	247.805	313.664	307.189	286.694	439.862	227.117
Injury: Death	680.650	798.477	777.121	401.183	748.821	960.574	1626.631
Hospitalization	339.975	204.464	205.548	310.815	373.146	206.623	276.142
Treatment, no hospitalization	105.858	156.991	240.806	206.837	183.472	317.716	163.848
Minor	15.253	23.158	25.586	30.078	36.371	23.780	26.966
Robbery $10 with: Physical or verbal threat	60.470	129.561	172.135	204.741	160.826	214.799	257.653
Weapon	46.308	101.984	188.973	176.154	237.193	335.346	158.012
Burglary and theft of $10	64.521	64.945	46.129	79.847	114.510	60.862	46.776
Rape	614.488	595.771	676.932	843.759	531.291	615.880	995.366
Bombing of building, 20 deaths	1690.613	1418.273	2372.642	1913.024	1728.662	2090.156	1869.880

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 133 (Geometric means, by core-item-offense stimuli)

West region: Income—Farm

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	13.283	12.794	58.210	26.669	21.086	17.906	75.162
	$10	12.048	15.681	149.391	24.173	40.112	19.462	83.281
	$50	67.408	65.427	63.490	78.541	118.158	59.679	100.000
	$100	142.183	52.933	140.445	54.538	96.620	32.341	44.284
	$1,000	154.613	100.906	196.508	114.361	179.587	213.665	153.718
	$10,000	174.603	152.067	93.852	81.646	505.240	63.212	71.569
Injury:	Death	469.510	514.518	862.295	330.656	684.702	4567.700	10659.116
	Hospitalization	245.803	155.077	728.101	111.801	378.661	356.144	500.000
	Treatment, no hospitalization	302.814	62.258	93.265	39.080	333.755	—	70.000
	Minor	35.573	19.918	69.449	18.775	10.386	11.987	7.226
Robbery $10 with:								
	Physical or verbal threat	36.739	125.044	116.935	107.514	158.507	981.199	700.318
	Weapon	136.815	84.414	964.739	139.062	216.532	59.146	34.559
Burglary								
	and theft of $10	45.085	67.775	4.708	83.655	119.454	46.574	300.000
Rape		161.858	417.156	6781.860	279.498	438.165	3211.164	682.419
Bombing of building,								
	20 deaths	2171.277	155.185	2554.096	418.294	2685.711	2754.876	2946.090

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 134 (Geometric means, by core-item-offense stimuli)

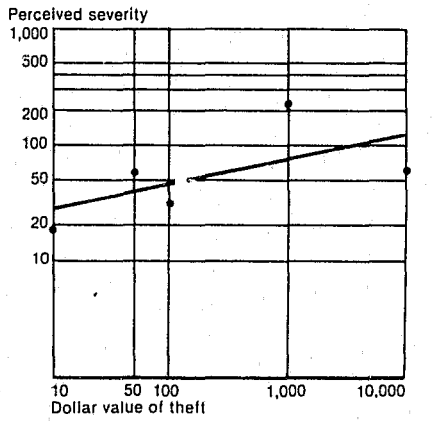
West region: Income—Service

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	24.099	21.777	26.546	30.690	23.068	24.660	11.143
	$10	43.866	39.266	43.873	46.147	39.432	36.002	23.022
	$50	50.814	84.794	69.489	73.927	48.080	48.178	37.168
	$100	60.938	71.039	59.889	104.974	92.737	106.524	43.592
	$1,000	143.052	166.432	150.766	160.487	173.536	153.998	112.946
	$10,000	170.793	308.415	185.630	231.575	194.676	166.751	182.476
Injury:	Death	2427.523	614.189	848.321	998.793	818.967	1435.427	2173.379
	Hospitalization	180.776	243.725	180.535	230.260	286.122	214.704	113.940
	Treatment, no hospitalization	162.999	188.299	192.529	251.711	149.997	310.866	81.445
	Minor	24.576	37.619	30.445	26.871	31.471	134.909	25.221
Robbery $10 with:								
	Physical or verbal threat	116.770	163.144	174.611	156.482	180.340	187.850	122.358
	Weapon	101.666	169.692	170.275	238.890	220.473	229.116	111.132
Burglary								
	and theft of $10	48.778	60.396	56.686	45.028	58.559	43.734	65.262
Rape		914.483	380.877	423.213	654.882	500.970	331.249	220.030
Bombing of building,								
	20 deaths	2367.270	1236.840	1390.467	1404.865	1576.449	2216.709	1119.575

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Figure 49
(Dollar value of theft vs. perceived severity)

Western region: Farm, income level $25,000 and over



Line is plot of expected values
• = observed values

Table 135 (Geometric means, by core-item-offense stimuli)

West region: Income—Occupation not available

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	12.445	22.909	22.962	24.547	13.304	24.260	19.999
	$10	27.002	43.506	46.325	37.361	31.585	45.660	37.303
	$50	36.368	65.558	71.061	85.271	53.768	52.944	57.563
	$100	50.490	76.148	94.006	78.076	77.419	84.340	98.337
	$1,000	117.243	163.256	177.340	166.430	182.200	161.009	189.688
	$10,000	200.540	270.733	363.206	242.288	402.223	228.547	287.853
Injury:	Death	375.816	859.701	1623.338	1082.912	1254.714	1113.202	1832.374
	Hospitalization	169.595	248.407	292.641	323.172	357.963	508.053	376.543
	Treatment, no hospitalization	105.598	237.748	229.851	225.868	330.440	349.638	171.956
	Minor	18.851	40.309	33.676	66.776	36.080	38.318	51.870
Robbery $10 with:	Physical or verbal threat	71.387	133.445	241.953	142.602	167.783	188.499	174.992
	Weapon	99.109	143.451	123.634	186.244	213.197	195.190	265.540
Burglary and theft of $10		59.559	57.518	75.664	110.475	62.550	58.004	69.384
Rape		278.747	565.485	592.325	580.632	641.335	1119.929	587.391
Bombing of building, 20 deaths		1321.498	1832.311	2175.667	1885.875	2180.417	2428.489	2892.643

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 136 (Regression constants and slopes)

Dollar value of theft vs. perceived severity by occupation and income: Northeast Census region

($Y = aX^b$)

Northeast	Correlation	Constant (*a*)	10^a	Slope (*b*)
White collar				
Under $3,000	.990	1.203	15.959	.318
3,000-7,499	.990	1.303	20.091	.263
7,500-9,999	.990	1.205	16.032	.302
10,000-14,999	.990	1.346	22.182	.274
15,000-24,999	.990	1.305	20.184	.274
25,000+	.990	1.242	17.458	.275
Not available	.987	1.364	23.121	.236
Blue collar				
Under $3,000	.958	1.232	17.161	.256
3,000-7,499	.990	1.208	16.145	.274
7,500-9,999	.990	1.382	24.099	.229
10,000-14,999	.990	1.312	20.512	.268
15,000-24,999	.990	1.351	22.439	.241
25,000+	.971	1.319	20.845	.240
Not available	.990	1.197	15.740	.290
Farm				
Under $3,000	.990	2.823	665.273	—
3,000-7,499	.900	.966	9.247	.410
7,500-9,999	.398	1.403	25.293	.191
10,000-14,999	.842	1.396	24.889	.184
15,000-24,999	.964	1.091	12.331	.326
25,000+	.140	1.706	50.816	.023
Not available	.990	1.882	76.208	—
Service				
Under $3,000	.990	1.220	16.596	.278
3,000-7,499	.962	1.342	21.979	.215
7,500-9,999	.978	1.301	19.999	.259
10,000-14,999	.974	1.447	27.990	.214
15,000-24,999	.962	1.350	22.387	.260
25,000+	.900	1.230	16.982	.280
Not available	.925	1.285	19.275	.233
Not available				
Under $3,000	.995	1.231	17.022	.256
3,000-7,499	.989	1.306	20.230	.242
7,500-9,999	.965	1.269	18.579	.262
10,000-14,999	.990	1.334	21.577	.266
15,000-24,999	.978	1.272	18.707	.280
25,000+	.998	1.116	13.062	.344
Not available	.981	1.269	18.579	.266

Table 137 (Regression constants and slopes)

Dollar value of theft vs. perceived severity by occupation and income: North Central Census region

($Y = aX^b$)

North Central	Correlation	Constant (*a*)	10^a	Slope (*b*)
White collar				
Under $3,000	.989	1.311	21.464	.257
3,000-7,499	.990	1.358	22.803	.282
7,500-9,999	.990	1.273	18.750	.301
10,000-14,999	.990	1.319	20.845	.297
15,000-24,999	.990	1.317	20.749	.278
25,000+	.990	1.216	16.444	.317
Not available	.987	1.478	30.061	.229
Blue collar				
Under $3,000	.990	1.110	12.882	.351
3,000-7,499	.990	1.551	35.563	.202
7,500-9,999	.990	1.468	29.376	.235
10,000-14,999	.982	1.448	28.054	.234
15,000-24,999	.987	1.395	24.831	.261
25,000+	.949	1.507	32.137	.213
Not available	.961	1.371	23.496	.250
Farm				
Under $3,000	.946	1.443	27.733	.229
3,000-7,499	.958	1.354	22.594	.274
7,500-9,999	.769	1.462	28.973	.234
10,000-14,999	.990	1.216	16.444	.291
15,000-24,999	.983	1.260	18.197	.320
25,000+	.941	1.202	15.922	.348
Not available	.990	1.368	23.335	.313
Service				
Under $3,000	.966	1.467	29.309	.209
3,000-7,499	.990	1.432	27.040	.259
7,500-9,999	.973	1.432	27.040	.225
10,000-14,999	.976	1.369	23.388	.279
15,000-24,999	.956	1.461	28.907	.222
25,000+	.990	1.345	22.131	.276
Not available	.988	1.509	32.285	.261
Not available				
Under $3,000	.960	1.218	16.520	.275
3,000-7,499	.990	1.378	23.878	.258
7,500-9,999	.987	1.332	21.478	.304
10,000-14,999	.990	1.391	24.604	.297
15,000-24,999	.987	1.356	22.699	.300
25,000+	.990	1.250	17.783	.316
Not available	.990	1.217	16.482	.319

Table 138 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by occupation and income: South Census region

($Y = aX^b$)

South	Correlation	Constant (*a*)	10^a	Slope (*b*)
White collar				
Under $3,000	.983	1.366	23.227	.258
3,000-7,499	.989	1.329	21.330	.278
7,500-9,999	.990	1.438	27.416	.266
10,000-14,999	.990	1.355	22.646	.270
15,000-24,999	.990	1.322	20.989	.286
25,000+	.990	1.341	21.928	.258
Not available	.987	1.362	23.014	.282
Blue collar				
Under $3,000	.954	1.298	19.861	.218
3,000-7,499	.983	1.326	21.184	.256
7,500-9,999	.990	1.392	24.660	.250
10,000-14,999	.989	1.395	24.831	.253
15,000-24,999	.987	1.420	26.303	.232
25,000+	.888	1.360	22.909	.239
Not available	.944	1.320	20.893	.240
Farm				
Under $3,000	.907	.999	9.977	.322
3,000-7,499	.974	1.268	18.535	.236
7,500-9,999	.870	1.438	27.416	.185
10,000-14,999	.958	1.242	17.458	.306
15,000-24,999	.973	.935	8.610	.454
25,000+	.909	1.222	16.672	.296
Not available	.869	1.169	14.757	.431
Service				
Under $3,000	.966	1.298	19.861	.275
3,000-7,499	.990	1.426	26.669	.219
7,500-9,999	.962	1.520	33.113	.192
10,000-14,999	.990	1.445	27.861	.244
15,000-24,999	.990	1.586	38.548	.243
25,000+	.955	1.252	17.865	.239
Not available	.935	1.621	41.783	.187
Not available				
Under $3,000	.964	1.260	18.197	.237
3,000-7,499	.990	1.376	23.768	.254
7,500-9,999	.990	1.340	21.878	.308
10,000-14,999	.984	1.431	26.977	.250
15,000-24,999	.990	1.319	20.845	.284
25,000+	.960	1.253	17.906	.292
Not available	.978	1.474	29.785	.244

Table 139 (Regression constants and slopes)

Dollar value of theft vs. perceived severity by occupation and income: West Census region

($Y = aX^b$)

West	Correlation	Constant (a)	10^a	Slope (b)
White collar				
Under $3,000	.984	1.090	12.303	.352
3,000–7,499	.990	1.309	20.370	.291
7,500–9,999	.988	1.458	28.708	.246
10,000–14,999	.990	1.344	22.080	.286
15,000–24,999	.972	1.248	17.701	.299
25,000+	.980	1.200	15.849	.299
Not available	.990	1.267	18.493	.295
Blue collar				
Under $3,000	.919	1.432	27.040	.222
3,000–7,499	.990	1.282	19.143	.280
7,500–9,999	.972	1.338	21.777	.290
10,000–14,999	.990	1.316	20.701	.300
15,000–24,999	.979	1.387	24.378	.276
25,000+	.901	1.367	23.281	.312
Not available	.980	1.380	23.988	.249
Farm				
Under $3,000	.803	1.122	13.243	.333
3,000–7,499	.909	1.107	12.794	.289
7,500–9,999	.192	1.765	58.210	.076
10,000–14,999	.723	1.426	26.669	.159
15,000–24,999	.968	1.324	21.086	.346
25,000+	.627	1.253	17.906	.208
Not available	.117	1.876	75.162	.020
Service				
Under $3,000	.967	1.382	24.099	.223
3,000–7,499	.984	1.338	21.777	.290
7,500–9,999	.966	1.424	26.546	.221
10,000–14,999	.982	1.487	30.690	.230
15,000–24,999	.944	1.363	23.068	.253
25,000+	.907	1.392	24.660	.232
Not available	.990	1.047	11.143	.312
Not Available				
Under $3,000	.990	1.095	12.445	.307
3,000–7,499	.990	1.360	22.909	.272
7,500–9,999	.990	1.361	22.962	.299
10,000–14,999	.973	1.390	24.547	.261
15,000–24,999	.990	1.124	13.304	.373
25,000+	.979	1.385	24.266	.252
Not available	.982	1.301	19.999	.304

Race and family income

When geometric means are examined across income categories for the race groups (tables 140 to 142) the judgment of injury-offense seriousness is linear for whites but not for nonwhites. Among whites, as income increases there is a consequent increase in the perceived severity of injury offenses. For example, the mean for a single death by injury for whites with incomes over $25,000 is 2.4 times higher than the score for those with incomes less than $3,000 (1214 vs. 498). Similar ratios are obtained for other serious injury offenses. Among nonwhites, the pattern is less consistent and depends on particular offenses. For instance, in the example used above, the nonwhite ratio between highest to lowest income category is only 1.4, but for rape the ratio is 3.1 compared to 2.1 among whites.

The race-income data also indicate that the race effect observed with the univariate data—nonwhites exhibit lower magnitude values—holds regardless of income group. Thus, whites display higher geometric means than nonwhites for all serious injury offenses (hospitalization, rape, single killing, and bombing) at every level of income except at the highest for the rape offense where blacks have a higher value (877 vs. 805).

Despite these differences in the absolute magnitudes assigned for injury offenses, the computed regression coefficients for theft offenses support the hypothesized power function for whites and blacks (table 143). The betas (slopes) for white income groups approximate one another (all in the .27 and .28 range). In contrast, more variation can be observed between black income groups with their slopes averaging about .19. The white correlation coefficients indicate a near-perfect relationship across income categories; all values are near unity. Yet, for blacks the correlation coefficient drops to .97 in five of the seven income groups, indicating a slightly weaker fit.

Although there is support on the national level for the perceived severity of crime conforming to the hypothesized power function for whites and blacks, it does not appear to hold for "other" respondents (table 143). First, there is a significant degree of variation in the computed slopes by income categories (the values range from .7 to .35). Second, a few income categories depart from the expected distribution of scores based on their metric order. This is reflected in the correlation coefficient of .81 and the geometric mean ratios of less than 1 for 20 deaths by bombing to a single death by injury.

Table 140 (Geometric means, by core-item-offense stimuli)

National: Income—White

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	16.444	22.209	23.014	22.962	21.184	18.323	22.029
	$10	29.482	39.343	43.198	40.034	37.187	32.241	38.694
	$50	49.012	64.436	64.365	69.060	65.123	58.138	62.897
	$100	66.984	75.497	84.387	85.136	80.484	74.282	79.857
	$1,000	133.428	154.935	163.080	161.845	157.726	142.952	156.809
	$10,000	208.172	247.382	279.514	268.905	257.699	239.045	244.656
Injury:	Death	498.183	686.297	768.906	826.336	958.474	1214.485	872.934
	Hospitalization	185.620	235.492	248.901	282.219	321.439	334.872	273.466
	Treatment, no hospitalization	133.770	156.055	190.382	208.634	216.064	247.586	188.215
	Minor	26.239	32.200	34.082	33.661	33.905	27.485	33.451
Robbery $10 with:	Physical or verbal threat	85.600	124.933	152.677	155.611	172.419	194.939	159.537
	Weapon	106.893	131.084	155.418	182.368	190.696	209.694	181.763
Burglary and theft of $10		4.919	65.052	61.856	72.950	73.535	73.687	69.015
Rape		379.575	509.069	550.623	642.476	677.487	804.951	618.992
Bombing of building, 20 deaths		1200.774	1466.434	1577.974	1715.450	1817.378	2256.595	1899.881

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

In each of the four census regions, the observed differences between white and black subjects remain constant (tables 144 to 151). Again, the difference is most pronounced for offenses at the upper end of the injury scale. In the Northeast, for instance, the mean value listed for 20 deaths resulting from a bombing is two times greater for whites earning less than $3,000 than for blacks in the same income group. The computed severity ratios further reflect this difference by race in the perceived severity of a bombing; the ratio is 64 for whites compared to 23 for blacks.

The other three census regions provide similar results in that racial differences in the perception of an injury offense remain constant across income categories. But, due to small sample size, some anomalies do appear in the computed ratios for blacks in the following income groups and regions: under $3,000, $7,500–$9,999, and $15,000–$24,999 in the West and $7,500–$9,999 in the North Central region.

For dollar values of theft, differences in perceived severity are indicated by their corresponding regression and correlation coefficients (table 152). The coefficients across income categories for whites show a near-perfect relationship in that all values are in the .99 range. But this is not the case for blacks, with their coefficients dropping in some regions to the point of providing an unacceptable fit. The lack of agreement may be attributed to some of the anomalies that we discussed earlier. The greatest variability appears for blacks in the West whose computed slopes range from a low of .02 to a high of .27. Similarly, the corresponding correlation coefficients, .68 and .12, lead us to reject the hypothesized power function for blacks within certain income categories and census regions.

The breakdown in the scale for blacks by income within census region is further illustrated with the geometric mean ratios for a single to 20 deaths. Blacks in the West earning less than $3,000 and between $7,500 and $9,999 assign higher numbers to a single death by injury than

Table 141 (Geometric means, by core-item-offense stimuli)

National: Income—Black

Offense		Under $3,000	$3,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-24,999	$25,000+	Not available
Theft:	$1*	26.303	24.660	31.550	31.117	26.915	39.084	26.303
	$10	40.521	37.283	42.546	47.364	36.698	56.634	35.783
	$50	49.764	54.741	59.333	60.157	68.499	79.833	56.305
	$100	61.561	67.579	70.588	84.713	84.714	97.874	80.028
	$1,000	118.479	106.934	110.595	142.300	130.916	131.984	111.336
	$10,000	129.675	153.862	127.176	169.995	175.690	206.569	145.492
Injury:	Death	422.726	355.820	489.043	543.826	381.265	584.724	333.834
	Hospitalization	108.809	137.401	128.601	208.447	211.383	336.244	155.333
	Treatment, no hospitalization	73.741	104.560	124.103	144.406	201.721	259.305	135.627
	Minor	25.494	30.112	31.581	35.216	30.432	54.408	27.085
Robbery $10 with:	Physical or verbal threat	87.408	80.696	88.351	125.140	104.007	136.411	89.736
	Weapon	86.249	93.094	128.692	113.480	122.358	171.531	97.669
Burglary	and theft of $10	49.498	57.188	44.387	64.607	79.265	74.651	62.902
Rape		281.802	237.904	406.645	369.937	311.462	877.084	297.373
Bombing of building,	20 deaths	622.380	710.386	872.706	1168.417	1003.074	1164.869	859.797

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 142 (Geometric means, by core-item-offense stimuli)

National: Income—Other

Offense		Under $3,000	$3,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-24,999	$25,000+	Not available
Theft:	$1*	13.900	20.512	10.092	23.335	12.823	17.378	15.524
	$10	12.829	26.856	14.333	39.501	15.044	24.558	32.098
	$50	55.527	90.515	48.329	39.851	15.047	24.558	32.098
	$100	71.916	35.952	71.848	47.440	62.491	53.968	55.799
	$1,000	68.794	89.502	137.283	90.049	108.886	100.315	83.523
	$10,000	106.755	143.816	187.968	112.173	153.675	130.401	160.463
Injury:	Death	401.501	264.128	290.972	398.091	1018.454	1016.880	125.978
	Hospitalization	93.897	204.496	10.482	154.248	370.025	368.450	108.459
	Treatment, no hospitalization	85.436	64.298	75.607	93.824	167.537	130.027	164.998
	Minor	15.712	28.456	32.641	42.889	42.410	58.653	5.777
Robbery $10 with:	Physical or verbal threat	28.907	82.469	46.096	86.382	193.135	203.327	68.890
	Weapon	82.880	75.271	117.774	81.635	73.421	59.749	40.279
Burglary	and theft of $10	51.629	88.855	83.697	24.923	67.623	67.814	79.496
Rape		89.801	180.361	33.090	239.667	555.680	1176.869	125.761
Bombing of building,	20 deaths	399.424	465.106	809.143	390.804	1130.296	1077.880	542.641

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 143 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by race and family income: Total United States

($Y = aX^b$)

Total U.S.	Correlation	Constant (a)	$10a$	Slope (b)
White				
Under $3,000	.992	1.216	16.444	.286
3,000-7,499	.997	1.343	22.029	.269
7,500-9,999	.998	1.362	23.014	.275
10,000-14,999	.996	1.361	22.962	.274
15,000-24,999	.995	1.326	21.184	.279
25,000+	.994	1.263	18.323	.287
Not available	.995	1.343	22.029	.270
Black				
Under $3,000	.967	1.420	26.303	.186
3,000-7,499	.995	1.392	24.660	.205
7,500-9,999	.977	1.499	31.550	.162
10,000-14,999	.974	1.493	31.117	.197
15,000-24,999	.970	1.430	26.915	.217
25,000+	.995	1.592	39.084	.181
Not available	.967	1.420	26.303	.198
Other				
Under $3,000	.809	1.143	13.900	.244
3,000-7,499	.819	1.312	20.512	.213
7,500-9,999	.937	1.004	10.092	.350
10,000-14,999	.963	1.368	23.335	.174
15,000-24,999	.902	1.108	12.823	.296
25,000+	.970	1.240	17.378	.234
Not available	.964	1.191	15.524	.248

to an incident resulting in 20 deaths from a bombing.

We conclude with the following summary statements:

(1) White and high-income subjects assign larger numerical values to serious injury offenses.

(2) For the total national sample, there is proportionality across income categories for both white and black subjects. Only for "other" subjects is there a lack of stability in perceived severity scores.

(3) For black respondents by income category, the data do not support the hypothesized power function for some of the census regions. For whites, however, the data support the use of severity ratios by race and income within each census region.

Table 144 (Geometric means, by core-item-offense stimuli)

Northeast region: Income—White

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	16.144	20.559	19.815	22.490	20.941	17.100	20.606
	$10	29.436	37.018	36.413	38.082	36.455	30.019	35.009
	$50	54.178	53.757	52.911	64.169	69.994	51.581	57.629
	$100	61.672	64.380	75.535	82.324	73.087	63.697	68.297
	$1,000	127.486	138.900	146.569	146.934	144.820	128.962	135.634
	$10,000	224.889	198.953	227.296	241.046	224.489	201.696	202.560
Injury:	Death	334.362	670.431	672.183	758.281	994.357	1013.471	704.522
	Hospitalization	192.547	255.649	234.444	273.729	295.918	301.051	252.698
	Treatment, no hospitalization	156.057	136.388	183.041	202.672	199.729	234.987	168.456
	Minor	24.317	36.656	34.988	38.982	35.667	28.818	31.972
Robbery $10 with:	Physical or verbal threat	70.291	122.175	143.975	151.516	175.471	171.915	155.521
	Weapon	129.980	122.031	128.693	173.652	162.516	201.316	143.828
Burglary and theft of $10		51.998	63.627	53.068	67.612	67.643	72.267	68.790
Rape		388.339	479.672	452.982	646.965	672.012	701.999	509.108
Bombing of building, 20 deaths		1025.625	1372.286	1374.138	1527.098	1631.500	2069.776	1521.269

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 145 (Geometric means, by core-item-offense stimuli)

Northeast region: Income—Black

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	20.045	14.158	15.240	19.634	18.072	28.445	14.723
	$10	38.120	20.606	23.862	30.402	29.974	48.663	18.425
	$50	28.170	37.933	30.416	39.433	42.035	86.532	34.556
	$100	53.813	42.875	45.422	76.512	58.888	74.208	77.695
	$1,000	92.137	72.716	71.611	124.121	93.432	142.859	67.240
	$10,000	112.880	103.584	94.889	138.564	148.506	271.838	112.623
Injury:	Death	269.123	264.822	399.464	742.509	558.800	850.467	135.238
	Hospitalization	98.672	136.063	72.132	207.370	201.031	338.236	108.291
	Treatment, no hospitalization	127.749	116.636	99.581	225.431	202.167	349.402	116.897
	Minor	17.020	24.500	26.382	29.260	27.785	77.911	27.470
Robbery $10 with:	Physical or verbal threat	75.311	69.242	63.511	127.710	104.172	105.401	37.633
	Weapon	37.611	85.858	107.585	79.498	114.149	197.367	73.157
Burglary and theft of $10		15.437	38.169	26.806	60.025	50.083	52.547	37.292
Rape		186.625	242.716	298.900	823.578	296.110	2300.324	234.986
Bombing of building, 20 deaths		466.635	689.414	739.608	1302.538	1078.884	1288.461	461.547

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 146 (Geometric means, by core-item-offense stimuli)

North Central region: Income—White

Offense		Under $3,000	$3,000–7,499	$7,500–9,99	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	17.100	23.227	22.542	23.014	22.646	18.030	23.121
	$10	32.210	42.892	42.880	40.448	39.621	33.522	42.547
	$50	46.296	67.910	63.345	71.497	66.542	59.847	65.691
	$100	68.939	77.811	84.428	88.075	83.394	83.081	83.060
	$1,000	145.693	167.856	160.837	165.901	162.621	160.190	166.588
	$10,000	210.081	268.995	284.008	286.372	258.712	285.244	271.235
Injury:	Death	627.887	740.124	685.549	758.147	870.406	1345.532	827.575
	Hospitalization	212.274	219.289	267.772	298.520	319.151	321.095	235.436
	Treatment, no hospitalization	133.077	153.873	172.023	217.550	203.414	238.371	195.328
	Minor	23.727	36.129	32.024	31.593	35.008	30.394	38.879
Robbery $10 with:								
	Physical or verbal threat	106.221	133.474	139.991	151.855	171.805	202.191	140.074
	Weapon	113.082	140.489	153.810	191.991	199.407	210.637	191.970
Burglary								
	and theft of $10	54.155	67.071	67.549	81.285	75.129	77.225	94.899
Rape		417.259	520.205	562.588	573.909	682.595	831.315	557.716
Bombing of building,	20 deaths	1436.721	1584.005	1402.946	1706.826	1728.244	2200.812	1702.114

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 147 (Geometric means, by core-item-offense stimuli)

North Central region: Income—Black

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	33.113	52.723	38.371	38.282	24.946	43.853	36.392
	$10	45.281	69.127	74.818	73.810	41.901	52.477	45.670
	$50	73.857	84.448	51.881	53.661	62.529	106.567	82.791
	$100	81.382	121.054	90.558	97.010	106.579	111.403	80.207
	$1,000	157.827	145.021	149.508	154.384	146.226	146.513	154.682
	$10,000	162.997	185.296	203.736	215.771	264.016	205.733	150.841
Injury:	Death	396.773	564.490	686.528	622.914	299.958	520.847	564.208
	Hospitalization	190.213	226.574	137.631	199.056	181.134	535.097	184.204
	Treatment, no hospitalization	82.476	145.853	195.903	159.172	265.896	304.666	166.129
	Minor	63.050	45.671	37.336	45.048	42.699	56.190	25.334
Robbery $10 with:								
	Physical or verbal threat	86.269	129.993	191.924	38.650	127.678	112.777	156.288
	Weapon	220.111	161.343	148.409	129.634	165.032	156.883	110.552
Burglary								
	and theft of $10	92.525	87.727	45.184	75.077	67.238	105.926	111.714
Rape		288.120	337.448	545.730	335.657	242.922	860.423	323.507
Bombing of building,	20 deaths	942.530	984.993	983.525	1008.080	775.582	1214.748	1263.983

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 148 (Geometric means, by core-item-offense stimuli)

South region: Income—White

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	16.482	22.284	25.351	23.714	22.182	19.770	24.378
	$10	27.583	36.680	48.763	41.192	39.589	33.242	40.524
	$50	47.268	70.980	69.259	70.298	65.027	63.570	69.243
	$100	72.223	80.987	89.453	83.156	87.627	69.857	94.131
	$1,000	129.956	151.959	171.964	164.270	156.708	135.208	167.179
	$10,000	191.201	249.484	306.067	262.964	274.360	227.064	259.382
Injury:	Death	420.279	571.682	734.735	726.396	947.277	1345.984	853.487
	Hospitalization	149.213	227.736	208.034	261.010	280.161	323.381	306.349
	Treatment, no hospitalization	119.806	147.172	181.952	176.973	222.775	233.550	206.335
	Minor	30.268	25.929	36.822	31.803	30.503	23.461	30.218
Robbery $10 with:								
	Physical or verbal threat	82.995	109.819	149.084	136.893	157.379	197.767	155.286
	Weapon	93.832	115.763	169.609	166.779	178.926	202.219	189.824
Burglary								
	and theft of $10	46.405	75.184	74.179	72.719	74.714	90.665	77.982
Rape		309.218	504.246	540.878	593.792	668.063	946.337	746.639
Bombing of building,								
	20 deaths	934.262	1255.442	1572.138	1627.143	1813.476	2123.390	2163.466

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 149 (Geometric means, by core-item-offense stimuli)

South region: Income—Black

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	24.831	23.014	32.734	33.651	32.810	76.121	28.576
	$10	39.248	36.646	36.123	44.333	41.462	102.281	44.103
	$50	46.107	52.016	82.474	69.071	81.941	87.177	56.694
	$100	57.653	63.274	78.567	78.079	85.035	110.091	82.125
	$1,000	111.721	107.332	107.963	136.958	131.639	166.115	127.461
	$10,000	124.340	156.687	135.871	142.302	169.465	176.561	169.760
Injury:	Death	383.522	304.402	334.158	443.472	301.542	878.395	300.640
	Hospitalization	94.892	113.262	163.081	202.418	180.192	206.011	167.245
	Treatment, no hospitalization	57.491	85.621	114.835	110.828	185.028	244.795	144.715
	Minor	23.377	27.995	29.611	25.465	26.715	36.229	27.237
Robbery $10 with:								
	Physical or verbal threat	86.026	68.535	52.931	116.291	83.415	284.089	90.898
	Weapon	76.075	75.266	119.623	98.535	94.300	181.951	110.387
Burglary								
	and theft of $10	47.665	52.443	77.198	60.529	101.957	95.549	69.931
Rape		280.488	178.404	344.135	301.953	278.608	884.529	283.580
Bombing of building,								
	20 deaths	548.216	603.862	737.171	1038.172	765.969	1437.024	927.603

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 150 (Geometric means, by core-item-offense stimuli)

West region: Income—White

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	15.776	21.677	24.044	22.387	18.408	18.365	18.836
	$10	29.764	42.354	43.571	40.194	32.233	31.702	36.479
	$50	51.551	61.897	73.165	70.121	69.640	57.681	57.743
	$100	59.711	76.780	86.810	87.657	76.751	82.965	73.610
	$1,000	129.745	161.713	172.486	172.648	168.523	148.190	165.294
	$10,000	222.529	275.742	295.226	290.528	279.638	247.061	263.443
Injury:	Death	808.210	872.429	1134.081	1304.322	1068.443	1117.028	1491.980
	Hospitalization	242.588	250.830	330.251	305.160	426.912	422.415	327.644
	Treatment, no hospitalization	142.030	202.089	250.488	268.642	250.297	297.576	183.114
	Minor	24.083	34.683	31.637	33.448	34.715	28.339	34.409
Robbery $10 with:								
	Physical or verbal threat	82.630	146.113	191.569	205.584	189.578	210.211	218.775
	Weapon	100.645	157.808	173.195	204.675	235.028	232.547	234.797
Burglary and theft of $10		45.753	62.073	76.246	77.317	92.975	74.267	69.448
Rape		528.038	535.874	689.323	879.070	689.379	735.811	730.246
Bombing of building, 20 deaths		1938.003	1830.493	2233.550	2196.312	2231.419	2824.290	2507.385

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 151 (Geometric means, by core-item-offense stimuli)

West region: Income—Black

Offense		Under $3,000	$3,000–7,499	$7,500–9,999	$10,000–14,999	$15,000–24,999	$25,000+	Not available
Theft:	$1*	55.590	19.409	90.157	42.954	30.974	19.953	40.272
	$10	54.678	33.440	135.131	66.274	26.990	27.494	51.504
	$50	160.280	62.860	64.122	103.147	109.073	48.009	91.125
	$100	79.340	69.918	69.256	109.327	100.413	88.415	76.450
	$1,000	202.342	120.870	205.422	182.428	187.393	60.886	128.976
	$10,000	151.298	238.654	88.895	283.593	136.636	170.513	161.428
Injury:	Death	9541.813	679.955	2925.198	588.383	681.200	256.915	1738.034
	Hospitalization	175.699	187.313	132.961	273.283	633.983	229.558	200.088
	Treatment, no hospitalization	170.046	245.096	166.490	143.049	170.823	108.011	107.762
	Minor	12.371	26.226	40.149	86.136	31.753	47.073	28.345
Robbery $10 with:								
	Physical or verbal threat	182.137	110.487	675.378	140.042	154.245	76.923	108.144
	Weapon	139.377	90.334	174.237	255.484	204.492	153.406	116.875
Burglary and theft of $10		145.134	58.067	53.417	84.862	152.029	111.175	76.028
Rape		745.080	816.852	1334.625	268.706	728.075	388.485	534.941
Bombing of building, 20 deaths		1749.404	111.618	2551.438	2103.213	2557.769	620.514	1794.796

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 152 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by race and family income: United States, by Census regions

($Y = aX^b$)

Region	Correlation	Constant (a)	10^a	Slope (b)
Northeast				
White				
Under $3,000	.999	1.208	16.144	.292
3,000-7,499	.992	1.313	20.559	.255
7,500-9,999	.992	1.297	19.815	.274
10,000-14,999	.995	1.352	22.490	.265
15,000-24,999	.995	1.321	20.941	.266
25,000+	.994	1.233	17.100	.278
Not available	.994	1.314	20.606	.257
Black				
Under $3,000	.899	1.302	20.045	.194
3,000-7,499	.984	1.151	14.158	.226
7,500-9,999	.979	1.183	15.240	.208
10,000-14,999	.935	1.293	19.634	.234
15,000-24,999	.994	1.257	18.072	.233
25,000+	.984	1.454	28.445	.241
Not available	.879	1.168	14.723	.234
North Central				
White				
Under $3,000	.987	1.233	17.100	.285
3,000-7,499	.996	1.366	23.227	.272
7,500-9,999	.998	1.353	22.542	.278
10,000-14,999	.997	1.362	23.014	.280
15,000-24,999	.995	1.355	22.646	.273
25,000+	.995	1.256	18.030	.308
Not available	.997	1.364	23.121	.273
Black				
Under $3,000	.954	1.520	33.113	.192
3,000-7,499	.964	1.722	52.723	.142
7,500-9,999	.893	1.584	38.371	.180
10,000-14,999	.907	1.583	38.282	.187
15,000-24,999	.980	1.397	24.946	.260
25,000+	.944	1.642	43.853	.176
Not available	.928	1.561	36.392	.175
South				
White				
Under $3,000	.982	1.217	16.482	.281
3,000-7,499	.992	1.348	22.284	.270
7,500-9,999	.999	1.404	25.351	.272
10,000-14,999	.996	1.375	23.714	.269
15,000-24,999	.996	1.346	22.182	.278
25,000+	.994	1.296	19.770	.272
Not available	.990	1.387	24.378	.267
Black				
Under $3,000	.967	1.395	24.831	.187
3,000-7,499	.997	1.362	23.014	.214
7,500-9,999	.905	1.515	32.734	.168
10,000-14,999	.955	1.527	33.651	.174
15,000-24,999	.958	1.516	32.810	.191
25,000+	.894	1.852	71.121	.103
Not available	.982	1.456	28.576	.202
West				
White				
Under $3,000	.997	1.198	15.776	.293
3,000-7,499	.998	1.336	21.677	.280
7,500-9,999	.998	1.381	24.044	.277
10,000-14,999	.996	1.350	22.387	.286
15,000-24,999	.990	1.265	18.408	.306
25,000+	.989	1.264	18.365	.293
Not available	.995	1.275	18.836	.295
Black				
Under $3,000	.677	1.745	55.590	.137
3,000-7,499	.995	1.288	19.409	.272
7,500-9,999	.125	1.955	90.157	.022
10,000-14,999	.997	1.633	42.954	.207
15,000-24,999	.755	1.491	30.974	.207
25,000+	.874	1.300	19.953	.221
Not available	.955	1.605	40.272	.158

Victimization and race

In the univariate analysis, we noted that whites produced higher perceived severity scores than nonwhites and that victims had higher scores than nonvictims for serious offenses against the person. In the discussion that follows, we report the multivariate analysis of race and victimization to learn if the main effects are additive or interactive.

The geometric means for the core-item-offense stimuli are in tables 153 to 163 for the Nation and the four census regions. At the national level, the data for the serious injury offenses reveal substantial differences in geometric means. For death from a stabbing, the geometric mean for white victims is about twice (2.2) as large as for black nonvictims. Similarly, the difference in geometric means is 2.2 for a bombing resulting in 20 deaths and 2.1 times for a rape in the direction just noted.

Differences in geometric mean scores appear greatest between white subjects who were victims of both personal and property offenses and black subjects who were not victims of either offense. The scores of victims of property offenses more closely correspond to the nonvictim category. Thus, it is not the victimization experience in its aggregate form that may lead to the observed differences in scores, but the seriousness of the victimization experienced.

The observed variation by victimization and race is what would be expected from an additive model of these variables. The difference in geometric means between personal and property victimized whites and nonvictimized blacks is 2.3 for theft of $10,000, 4.0 for a single killing, 2.3 for hospitalization, 1.9 for treatment, 1.3 for minor injury, 2.1 for robbery with a weapon, 1.4 for burglary and theft, 3.3 for rape, and 3.5 for a bombing.

According to the computed regressions based on dollar values of theft, table 164 proportionality between core-item offenses appears specific to white respondents by victimization characteristics; coefficients are all in the .99 range. However, there are substantial differences in the computed slopes: .34 for victims of personal and property offenses compared to .27 for nonvictims.

For blacks and "other" respondents there are, as might be expected from the small sample sizes, some anomalies in the multivariate distribution. To illustrate, figure 50 presents the plotted logged values of dollar values of theft and perceived severity scores for black victims of personal crime only. Although the correlation is .82, the fit is a poor one: the theft of $1,000 is scored higher than the theft of $10,000. A similar departure from the expected distribution appears for the property and personal victimization category.

Anomalies in the expected distribution appear to be confined in the national results by race and victimization mainly for the "other" respondents category. This, as previously noted, can be attributed to the small sample size within each offense category. For black respondents, the severity scores are less consistent than for whites but, with a few exceptions, conform to the expected ratio values.

By census region, it would be expected that, if the effect of victim experience and race is additive, differences in geometric means would remain within each region. Table 165 summarizes the results of regression by region, race, and victimization. For whites, all coefficients of correlation are above .92 in the Northeast and .97 in all other census regions. For blacks, the correlation coefficient varies from .50 (see figure 51) to a near-perfect linear relationship. As previously noted, the lack of fit can be attributed to the fact that some sample cells contain fewer than 25 subjects.

Within victim categories by race and region, the observed differences in magnitude estimates are supported by the computed slopes. It was noted that those victimized both by personal and property offenses during the surveyed reference period tend to assign higher numerical values than other categories of victimization. For whites, the slope for this combined category is .29 compared to .26 for nonvictims in the Northeast, .36 compared to .28 in the North Central region, .33 compared to .27 in the South, and .35 compared to .29 in the West. For blacks, about the same differences in slope values exist except for categories where the correlation coefficient is less than .90. Differences in the computed slopes further exist within regions for injury-related offenses. The difference in ratio values, as expected, is greatest for the most serious offense, a bombing resulting in 20 deaths. The ratio for whites in the combined victimization category is 2.4 times greater than for nonvictims in the Northeast, 1.6 in the North Central region, 1.1 in the South, and 1.5 in the West.

For blacks, the combined-victimization geometric mean is 2.6 times greater than that for nonvictimized respondents in the North Central region, 3.4 times greater in the South, 3.6 times greater in the West, and only .8 times as great in the Northeast, an anomalous finding.

Thus we conclude from this analysis that victims perceive the severity of crime as being greater than do nonvictims. The direction of this difference is attributed mainly to the effect of the respondent or household member being a victim of both personal and property offenses.

Table 153 (Geometric means, by core-item-offense stimuli)

National: Victimization experience—White

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	21.380	21.281	21.627	20.606	16.069
	$10	37.599	38.022	38.427	39.643	32.845
	$50	63.399	66.042	67.053	65.840	51.510
	$100	78.357	82.711	83.129	77.975	95.095
	$1,000	152.654	165.072	165.547	165.346	174.292
	$10,000	248.049	270.792	271.607	294.223	326.642
Injury:	Death	788.499	1095.056	1086.454	492.079	1471.758
	Hospitalization	265.024	340.240	342.260	298.464	319.845
	Treatment, no hospitalization	189.136	233.223	227.428	206.380	222.156
	Minor	32.079	32.291	31.810	44.661	36.347
Robbery $10 with:						
Physical or verbal threat		145.720	195.408	190.332	149.366	185.003
Weapon		162.830	202.486	195.999	242.694	198.631
Burglary and theft of $10		67.864	73.052	73.037	63.135	75.198
Rape		571.123	798.674	813.714	660.409	888.626
Bombing of building, 20 deaths		1609.984	2100.245	2175.620	2132.575	2610.731

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 154 (Geometric means, by core-item-offense stimuli)

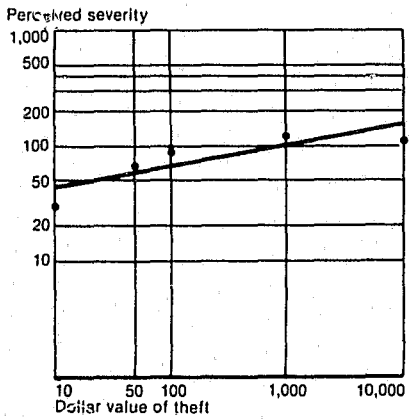
National: Victimization experience—Black

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	26.182	30.339	32.659	30.479	33.651
	$10	37.729	50.976	52.520	31.027	45.430
	$50	54.608	66.500	68.996	65.629	133.190
	$100	69.454	92.350	90.580	96.808	115.713
	$1,000	108.566	168.261	165.318	126.852	172.524
	$10,000	141.035	226.770	209.810	112.671	344.942
Injury:	Death	363.915	568.252	601.426	557.152	1685.336
	Hospitalization	141.058	236.207	252.607	224.800	145.513
	Treatment, no hospitalization	116.982	150.581	148.686	200.100	184.010
	Minor	27.895	48.474	46.520	24.636	45.643
Robbery $10 with:						
Physical or verbal threat		83.263	117.403	126.854	258.454	179.579
Weapon		95.905	165.662	150.005	99.955	202.080
Burglary and theft of $10		54.146	72.667	74.240	56.149	312.510
Rape		270.097	419.215	471.777	728.146	427.728
Bombing of building, 20 deaths		741.744	1337.782	1337.937	798.238	2106.771

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Figure 50
(Dollar value of theft vs. perceived severity)

National level: Black, personal victimization experience only



Line is plot of expected values
• = observed values

Table 155 (Geometric means, by core-item-offense stimuli)

National: Victimization experience—Other

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	14.521	20.091	16.368	101.158	46.132
	$10	21.520	26.340	22.268	78.346	60.043
	$50	44.859	66.878	60.714	401.790	117.139
	$100	56.897	43.271	42.256	30.000	82.677
	$1,000	91.287	107.329	105.136	169.074	167.061
	$10,000	143.873	120.994	126.395	100.000	216.309
Injury:	Death	373.601	746.628	697.390	221.467	378.373
	Hospitalization	157.140	721.001	620.693	620.783	285.678
	Treatment, no hospitalization	125.191	108.573	101.690	100.000	78.016
	Minor	31.641	45.850	34.807	— —	89.459
Robbery $10 with:						
Physical or verbal threat		77.565	196.948	158.503	130.698	184.269
	Weapon	82.145	54.573	48.103	— —	93.108
Burglary						
	and theft of $10	60.410	44.579	46.171	264.349	127.526
Rape		245.138	393.887	393.931	111.210	310.381
Bombing of building,						
	20 deaths	614.220	1094.730	1016.915	691.062	572.948

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 156 (Geometric means, by core-item-offense stimuli)

Northeast region: Victimization experience—White

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	20.324	20.559	20.417	17.140	30.200
	$10	34.706	39.979	37.569	46.714	74.130
	$50	58.447	54.513	56.535	36.311	57.803
	$100	71.482	71.655	72.495	45.213	157.071
	$1,000	139.413	146.639	146.199	126.621	196.174
	$10,000	214.044	241.520	232.654	224.451	497.364
Injury:	Death	738.903	1020.665	995.841	998.075	1513.404
	Hospitalization	262.225	302.421	306.110	234.974	361.367
	Treatment, no hospitalization	183.916	193.376	188.708	149.867	483.144
	Minor	34.725	33.753	31.841	41.124	51.975
Robbery $10 with:						
Physical or verbal threat		143.623	179.123	178.687	152.888	245.738
	Weapon	150.577	178.268	184.118	139.488	180.642
Burglary						
	and theft of $10	64.883	68.702	70.307	48.215	81.524
Rape		552.589	722.319	736.127	537.146	899.331
Bombing of building,						
	20 deaths	1458.889	1991.694	1997.566	1395.988	3439.053

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 157 (Geometric means, by core-item-offense stimuli)

Northeast region: Victimization experience—Black

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	15.740	20.797	23.933	20.797	8.872
	$10	24.008	30.159	39.593	14.736	12.768
	$50	37.169	41.083	40.955	40.274	46.431
	$100	54.041	74.191	72.002	104.500	52.079
	$1,000	79.465	115.892	122.489	108.803	77.062
	$10,000	120.108	125.508	139.465	52.852	172.542
Injury:	Death	311.370	559.039	554.429	405.656	1479.970
	Hospitalization	123.026	228.225	263.714	159.747	95.389
	Treatment, no hospitalization	143.366	166.246	136.839	562.544	106.165
	Minor	23.871	52.568	67.139	35.946	8.054
Robbery $10 with:						
Physical or verbal threat		69.294	106.565	96.006	202.305	53.951
	Weapon	79.372	138.754	158.044	106.142	57.257
Burglary						
	and theft of $10	36.020	48.683	59.862	20.527	52.257
Rape		250.371	979.826	998.300	1892.213	103.507
Bombing of building,						
	20 deaths	709.684	1105.451	1322.426	693.671	533.576

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 158 (Geometric means, by core-item-offense stimuli)

North Central region: Victimization experience—White

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	21.979	21.727	23.068	20.370	13.062
	$10	40.085	37.858	40.333	35.627	21.880
	$50	63.513	74.029	74.055	83.432	66.779
	$100	83.332	80.397	79.264	90.920	80.302
	$1,000	161.876	168.345	166.616	174.387	178.574
	$10,000	267.124	280.840	272.554	352.309	299.733
Injury:	Death	764.627	1153.073	1090.660	1087.776	2124. .87
	Hospitalization	259.735	364.316	366.162	286.183	426.470
	Treatment, no hospitalization	188.631	211.203	213.385	242.232	172.294
	Minor	32.962	34.180	33.162	43.569	34.455
Robbery $10 with:						
Physical or verbal threat		145.956	191.836	189.396	175.094	241.592
	Weapon	174.544	194.660	195.304	199.696	182.964
Burglary						
	and theft of $10	72.708	76.847	76.405	67.362	90.248
Rape		555.625	860.456	839.763	835.887	1133.758
Bombing of building,						
	20 deaths	1589.106	2193.330	2126.429	2468.415	2583.872

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 159 (Geometric means, by core-item-offense stimuli)

North Central region: Victimization experience—Black

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	33.651	62.097	52.481	54.828	111.173
	$10	50.643	93.522	93.722	63.233	114.780
	$50	62.871	99.081	73.302	102.801	301.080
	$100	92.548	137.870	145.127	125.786	120.423
	$1,000	131.654	217.844	223.942	176.577	234.295
	$10,000	180.879	252.967	276.084	179.406	278.039
Injury:	Death	391.759	1151.793	1353.967	409.992	989.536
	Hospitalization	195.326	239.274	247.079	254.361	204.292
	Treatment, no hospitalization	161.201	188.020	164.949	131.749	419.899
	Minor	38.752	65.594	85.176	24.262	77.209
Robbery $10 with:						
Physical or verbal threat		105.651	255.001	251.645	164.613	343.992
	Weapon	132.585	233.203	307.612	95.872	211.116
Burglary						
	and theft of $10	66.891	137.356	85.202	169.262	729.419
Rape		311.728	462.654	476.774	345.585	491.159
Bombing of building,						
	20 deaths	890.921	1556.733	1794.530	516.664	2315.680

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 160 (Geometric means, by core-item-offense stimuli)

South region: Victimization experience—White

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	22.233	22.490	23.550	19.861	29.309
	$10	37.846	41.163	42.959	37.330	26.073
	$50	66.919	65.499	68.745	57.552	43.628
	$100	79.554	99.233	99.931	102.526	86.164
	$1,000	150.694	176.389	177.335	184.345	152.706
	$10,000	247.045	305.225	311.137	301.879	246.251
Injury:	Death	734.470	940.691	935.821	893.674	1119.283
	Hospitalization	244.765	291.123	301.681	267.866	212.618
	Treatment, no hospitalization	176.351	222.887	241.377	153.001	154.877
	Minor	28.217	34.963	32.989	55.591	34.557
Robbery $10 with:						
Physical or verbal threat		133.342	165.063	174.065	124.493	123.884
Weapon		146.062	214.198	198.114	478.807	159.146
Burglary and theft of $10		73.777	74.348	75.669	71.803	62.835
Rape		559.481	791.012	817.925	680.118	692.465
Bombing of building, 20 deaths		1527.545	2019.578	2055.868	1934.771	1717.649

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 161 (Geometric means, by core-item-offense stimuli)

South region: Victimization experience—Black

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	27.290	30.200	28.174	50.004	28.119
	$10	39.186	43.893	43.768	65.316	34.246
	$50	56.396	76.378	77.287	67.916	74.778
	$100	67.212	83.988	83.098	67.031	111.863
	$1,000	109.058	157.906	158.338	112.364	213.130
	$10,000	138.699	196.784	210.150	107.345	176.504
Injury:	Death	320.987	459.321	434.635	1063.772	527.122
	Hospitalization	121.149	247.364	259.717	279.118	84.962
	Treatment, no hospitalization	93.232	136.363	142.386	116.396	97.425
	Minor	25.532	31.571	31.766	18.133	37.793
Robbery $10 with:						
Physical or verbal threat		76.031	101.554	90.962	539.981	135.227
Weapon		86.132	104.094	97.377	79.698	249.282
Burglary and theft of $10		57.221	84.919	83.970	65.829	55.648
Rape		235.436	345.769	343.866	547.307	210.105
Bombing of building, 20 deaths		626.570	1194.489	1137.720	1282.686	2137.161

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 162 (Geometric means, by core-item-offense stimuli)

West region: Victimization experience—White

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	20.464	19.055	18.836	25.177	15.488
	$10	37.576	33.478	32.001	41.978	37.145
	$50	64.693	66.647	67.725	91.011	42.129
	$100	78.649	81.357	79.916	75.983	101.274
	$1,000	161.519	169.999	169.103	169.769	176.683
	$10,000	273.568	275.901	264.138	286.814	366.718
Injury:	Death	1021.776	1353.625	1417.345	1012.087	1271.898
	Hospitalization	318.797	392.103	405.904	400.760	298.075
	Treatment, no hospitalization	223.393	279.940	274.615	312.377	290.777
	Minor	34.011	30.096	28.964	36.619	33.922
Robbery $10 with:						
Physical or verbal threat		171.957	210.273	227.196	152.653	167.495
Weapon		195.319	210.675	204.724	210.591	256.513
Burglary and theft of $10		72.201	84.717	85.372	92.280	72.935
Rape		647.531	828.239	860.498	593.551	853.780
Bombing of building, 20 deaths		2067.186	2664.358	2583.490	2891.777	3080.075

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Table 163 (Geometric means, by core-item-offense stimuli)

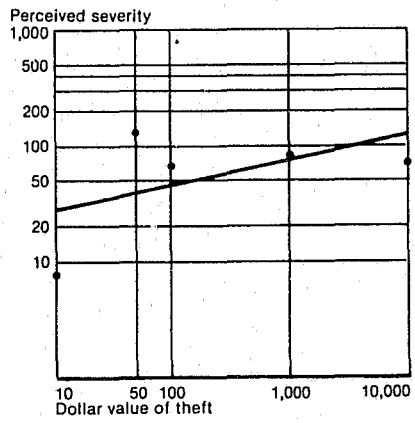
West region: Victimization experience—Black

Offense		Not victimized	Victimized	Property crime only	Personal crime only	Property and personal
Theft:	$1*	37.670	30.903	41.305	17.906	6.252
	$10	42.891	54.294	65.632	8.000	25.890
	$50	84.230	87.378	96.039	143.625	31.218
	$100	80.544	100.735	87.572	68.677	279.173
	$1,000	146.859	164.921	184.835	80.983	107.221
	$10,000	131.869	330.165	242.007	72.291	2079.585
Injury:	Death	1000.567	933.658	727.202	1000.000	4623.138
	Hospitalization	270.709	206.021	208.009	295.447	154.094
	Treatment, no hospitalization	150.484	186.400	173.576	700.000	209.595
	Minor	31.741	49.714	50.435	20.556	105.750
Robbery $10 with:						
Physical or verbal threat		131.275	241.884	249.782	300.000	186.014
Weapon		131.529	234.100	236.822	145.307	340.129
Burglary and theft of $10		97.102	79.350	75.893	1336.741	19.870
Rape		565.980	891.907	702.129	1023.718	6320.483
Bombing of building, 20 deaths		1596.080	2014.877	1706.346	1838.386	5714.165

*Value for theft of $1 is derived from regression of perceived severity magnitude estimates of dollar-value thefts.

Figure 51
(Dollar value of theft vs. perceived severity)

Western region: Black, personal victimization experience only



Line is plot of expected values
• = observed values

Table 164 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by race and victimization: Total United States

($Y = aX^b$)

Total U.S.	Correlation	Constant (a)	10^a	Slope (b)
White				
Not victimized	.996	1.330	21.380	.274
Victimized	.996	1.328	21.281	.284
Property crime only	.996	1.335	21.627	.283
Personal crime only	.999	1.314	20.606	.293
Property and personal	.987	1.206	16.069	.336
Black				
Not victimized	.986	1.418	26.182	.192
Victimized	.986	1.482	30.339	.228
Property crime only	.984	1.514	32.659	.212
Personal crime only	.824	1.484	30.479	.174
Property and personal	.941	1.527	33.651	.255
Other				
Not victimized	.977	1.162	14.521	.260
Victimized	.903	1.303	20.091	.212
Property crime only	.923	1.214	16.368	.240
Personal crime only	.042	2.005	101.158	.015
Property and personal	.947	1.664	46.132	.176

Table 165 (Regression constants and slopes)

Dollar value of theft vs. perceived severity, by race and victimization: United States, by Census region

($Y = aX^b$)

Region	Correlation	Constant (a)	10^a	Slope (b)
Northeast				
White				
Not victimized	.994	1.308	20.324	.265
Victimized	.996	1.313	20.559	.272
Property crime only	.996	1.310	20.417	.271
Personal crime only	.929	1.234	17.140	.271
Property and personal	.925	1.480	30.200	.292
Black				
Not victimized	.984	1.197	15.740	.229
Victimized	.932	1.318	20.797	.217
Property crime only	.942	1.379	23.933	.206
Personal crime only	.554	1.318	20.797	.168
Property and personal	.947	.948	8.872	.331
North Central				
White				
Not victimized	.997	1.342	21.979	.278
Victimized	.993	1.337	21.727	.286
Property crime only	.994	1.363	23.068	.275
Personal crime only	.989	1.309	20.370	.314
Property and personal	.972	1.116	13.062	.360
Black				
Not victimized	.981	1.527	33.651	.189
Victimized	.964	1.793	62.087	.161
Property crime only	.902	1.720	52.481	.187
Personal crime only	.918	1.739	54.828	.147
Property and personal	.599	2.046	111.173	.103
South				
White				
Not victimized	.996	1.347	22.233	.268
Victimized	.992	1.352	22.490	.291
Property crime only	.994	1.372	23.550	.286
Personal crime only	.982	1.298	19.861	.308
Property and personal	.974	1.467	29.309	.328
Black				
Not victimized	.988	1.436	27.290	.186
Victimized	.978	1.480	30.200	.218
Property crime only	.984	1.465	28.174	.226
Personal crime only	.894	1.699	50.004	.090
Property and personal	.881	1.449	28.119	.238
West				
White				
Not victimized	.997	1.311	20.464	.288
Victimized	.991	1.280	19.055	.302
Property crime only	.987	1.275	18.836	.300
Personal crime only	.980	1.401	25.177	.269
Property and personal	.971	1.190	15.488	.347
Black				
Not victimized	.887	1.576	37.670	.160
Victimized	.997	1.490	30.903	.253
Property crime only	.978	1.616	41.305	.198
Personal crime only	.500	1.253	17.906	.205
Property and personal	.864	.796	6.252	.574

Regression analysis of individual-level data

The focus of the analysis up to now has been the description of geometric means and the parameter estimates of regressed log values of dollar theft and perceived seriousness. The discussion has centered on aggregate data which may be adequate for creating ratio scales but appear inadequate for determining individual-level differences. Furthermore, the multivariate analysis of geometric means and slopes has been limited to one three-way relationship (race, age, and sex) and three two-way combinations (occupation and income, race and income, and race and victimization). Although these combinations are valuable for specifying the distribution of perceived seriousness of personal characteristics, such analyses fail to take complete advantage of the available data. Thus it is necessary to examine demographic and victimization characteristics in a model that tries to account for possible differences in perceived seriousness. The following discussion reports the results of this effort.

Extended power function

In previous analyses, we have repeatedly referred to the power function of money, which was based solely on aggregate-level data. We have now extended the function to include the individual-level sociodemographic data. The dependent variable (perceived severity) will be allowed to vary for each score of dollar amount stolen ($10, $50, $100, $1,000, and $10,000). In addition to the personal demographic and victimization attributes, the log of the dollar value of theft has been included in the multiple regression model.

The results of the extended power function are given in table 166. Controlling for all other factors, the results indicate that the slope for dollar value of theft differs little from the aggregate-level results, .273 in contrast to .268. The close correspondence of the slopes is particularly important here in light of the fact that the aggregate-level results do not control for the effects of demographic and victimization characteristics.

The largest effect next to log dollar value on the perceived severity of theft is race. The coefficient indicates that blacks have about 70 percent of the scores of whites

Table 166 (Regression results)

Power function plus demographic main effects

Variable	Parameter estimate	Standard error	*T* ratio	Significance level
Intercept	1.148815	0.028926	39.7159	0.0001
Race	−0.100505	0.007378813	−13.6208	0.0001
Age	0.0008313685	0.000143152	5.8076	0.0001
Sex	0.075849	0.004700754	16.1354	0.0001
Occupation: White collar	0.028295	0.006416904	4.4095	0.0001
Blue collar	0.048278	0.007107641	6.7924	0.0001
Service	0.029848	0.008165915	3.6552	0.0001
Income	0.031295	0.006646245	4.7086	0.0001
Victimization	0.045279	0.005285731	8.5664	0.0001
Years of education	−0.00323265	0.0008286761	−3.9010	0.0001
Log of dollar amount	0.273331	0.002401011	113.8401	0.0001

or, put another way, that black seriousness scores are 21 percent lower than white scores. The .08 coefficient for sex indicates that males have about 84 percent of the scores of females. All other coefficients, although significant, add little to the expected values of theft.

The model based on demographic and victimization characteristics with log dollar values explains about 12 percent of the variance. However, when log dollar values are deleted from the model, the sociodemographic factors explain only about .5 percent of the variance.

Regression of all core-item offenses

In table 167 we present the regression results for the various core-item stimuli by the various sociodemographic factors. When the theft-related items are examined separately in the regressed power function, it can be seen that the biggest difference in logged mean scores (especially for race) occurs for thefts of $1,000 and $10,000. For instance, at the highest value of theft, blacks have about 75 percent of the scores of whites when all other factors are controlled.

For burglary, the race effect is not significant while the highest coefficient (.106) is associated with income. Robbery, divided into verbal/physical threat and threat by weapon, shows that the offenses produced nearly equal significance coefficients, although the intercept is slightly higher for robbery with a weapon.

For minor offenses, personal demographic and victimization characteristics are generally insignificant in their effects on the computed mean value. Only the effect of sex appears highly significant, in the direction that females display higher values than males. When the coefficient is converted to percentages, we see that males have 65 percent of the score of females. Because all other effects are relatively small, the difference corresponds to the actual univariate geometric means in that males produced 66 percent of the score of females; the geometric means for minor harm are 27 for males and 41 for females.

For more serious forms of injury, the effect of race increases with the seriousness of the offense. The coefficient is −.15 for treated and discharged and −.24 for a bombing. Translated into percentages, blacks have 56 percent of the score of whites for treated and 71 percent for a bombing. Other consistently significant predictors are income and victimization, although the direction of the coefficient is not as great as it is for race. Thus there seem to be important relationships for race, victimization, and income-significant main effects which need to be examined further in order to test for possible interactions.

Interaction of race, income, and victimization

In this section, we shall test for interactions by examining those core-item offenses that proved thus far to be significant. As previously noted, differences in perceived severity appear to be confined

Table 167 (Unstandardized parameter estimates)

Regression of core-item offenses on personal demographic and victimization characteristics

(Standard errors in parentheses)

	Theft					Burglary	Robbery		Injury					
							Threat	Weapon						Bomb
	$10	$50	$100	$1,000	$10,000	$10	$10	$10	Minor	Treatment	Hospital	Rape	Death	20 deaths
Intercept	1.5662	1.7113	1.6990	1.9661	2.0616 ***	1.2194	1.1630	1.2493	1.007	1.2946	1.5547	1.8342	1.8317	2.3130
Race	−0.0091 (0.0219)	−0.0497 (0.0219) **	−0.0516 (0.0166) ***	−0.1212 (0.0108) ***	−0.2127 (0.0211) ***	−0.0421 (0.0232)	−0.1550 (0.0239) ***	−0.1521 (0.0247) ***	0.0119 (0.0157)	−0.1502 (0.0243) ***	−0.1648 (0.0265) ***	−0.2443 (0.0256) ***	−0.2289 (0.0314) ***	−0.2433 (0.0182) ***
Age	−0.0006 (0.0004)	−0.0008 (0.0004)	−0.0001 (0.0003)	0.0016 (0.0002) ***	0.0021 (0.0004) **	0.0028 (0.0004) ***	0.0009 (0.0005) *	0.0023 (0.0005) ***	0.0027 (0.0005) ***	0.0012 (0.0005) *	0.0009 (0.0005)	−0.0003 (0.0005)	0.0012 (0.0006) *	0.0034 (0.0004) ***
Sex	0.0802 (0.0139) ***	0.0695 (0.0140) ***	0.0723 (0.0106) ***	0.0675 (0.0069) ***	0.1015 (0.0133) *	0.0036 (0.0147)	0.0252 (0.0152)	−0.0338 (0.0159) *	0.1849 (0.0166) ***	0.1181 (0.0155) ***	0.1131 (0.1628) ***	0.0502 (0.0167) **	0.0159 (0.0200)	−0.0303 (0.0116) **
Blue collar	0.0159 (0.0191)	0.0348 (0.0189)	0.0230 (0.0145)	0.0243 (0.0094) **	0.0502 (0.0183)	0.0795 (0.0199) ***	0.0581 (0.0209) **	0.0603 (0.0214) **	0.0089 (0.0224)	0.0731 (0.0213) ***	0.0953 (0.0220) ***	0.0388 (0.0228)	0.0375 (0.0275)	0.0575 (0.0158) **
White collar	0.0514 (0.0209) *	0.0520 (0.0210) *	0.0508 (0.0161) **	0.0439 (0.0104) ***	0.0495 (0.0204)	0.0827 (0.0221) ***	0.0102 (0.0229)	0.0516 (0.0239) *	0.0159 (0.0250)	−0.0137 (0.0236)	0.0422 (0.0244)	−0.0017 (0.0253)	−0.0322 (0.301)	0.0178 (0.0176)
Service	0.0602 (0.0240) *	0.0356 (0.0242)	0.0298 (0.0185)	0.0256 (0.0120) *	0.0132 (0.0233)	0.0400 (0.0255)	0.0559 (0.0262) *	0.0317 (0.0280)	0.0228 (0.0292)	0.0027 (0.0268)	0.0092 (0.0281)	0.0059 (0.0291)	0.0207 (0.0345)	−0.0128 (0.0202)
Income (logged)	0.0418 (0.0197) *	0.0411 (0.0198) *	0.0480 (0.0150) **	0.0198 (0.0098) *	0.0296 (0.0189)	0.1056 (0.0209) ***	0.1603 (0.0215) ***	0.1480 (0.0221) ***	0.0708 (0.0231) **	0.1417 (0.0219) ***	0.1027 (0.0231) ***	0.1336 (0.0235) ***	0.1342 (0.0283) ***	0.0740 (0.0164) ***
Victim	0.0164 (0.0157)	0.0185 (0.0156)	0.0311 (0.0120) **	0.0562 (0.0078) ***	0.0720 (0.0150) ***	0.0445 (0.0164) **	0.0986 (0.0172) ***	0.0963 (0.0179) ***	0.0418 (0.0187) *	0.0759 (0.0174) ***	0.1078 (0.0182) ***	0.1241 (0.0188) ***	0.1255 (0.0226) ***	0.1413 (0.0131) ***
Education	−0.0170 (0.0024) ***	−0.0093 (0.0025) **	−0.0047 (0.0019) *	0.007 (0.0012)	0.0024 (0.0024)	0.0017 (0.0030)	0.0220 (0.0027) ***	0.0194 (0.0028) ***	−0.0013 (0.0029)	0.0220 (0.0027) ***	0.0249 (0.0029) ***	0.0292 (0.0029) ***	0.0378 (0.0035) ***	0.0352 (0.0020) ***
R^2	0.0092	0.0047	0.0043	0.0070	0.0148	0.0085	0.0313	0.0255	0.013	0.0380	0.0330	0.0294	0.0334	0.0216

*≤.05 **≤.01 ***≤.001

mainly to serious injury offenses. But this difference does not necessarily affect the proportionality between ratio values as computed in the various demographic and victimization scales. At this point, we are concerned with determining the source of differences in the absolute values assigned by the respondents. The offenses in which the main effects were found to be particularly significant are those which involve serious injury offenses: treated (emergency room), hospitalization, rape, death, and bombing resulting in 20 deaths.

In table 168, the parameter estimates and their corresponding standard errors are presented. Treated and discharged results in significant main effects but insignificant interactions. As expected, race produces the greatest effect in the direction of whites having higher scores than blacks. Hospitalization similarly results in significant main effects. Yet the interaction between income and victimization is also significant.

Table 168 (Regression results)

Serious injury offenses, by race, income, and victimization

Coefficients unstandardized; standard errors in parentheses.

	Treated	Hospital	Rape	Death	Bomb 20 deaths
Race	−0.6203 (0.2894)*	−0.5822 (0.2981)*	−0.1964 (0.3104)	0.1526 (0.3848)	−0.2769 (0.2155)
Income	0.2170 (0.0251)***	0.2201 (0.0263)***	0.2678 (0.0263)***	0.3060 (0.0314)***	0.2241 (0.0186)***
Victimization	0.4292 (0.2113)*	0.8265 (0.2241)***	1.0050 (0.2276)***	0.9081 (0.2988)***	1.0088 (0.1590)***
Race-by-income	0.1155 (0.0726)	0.0961 (0.0763)	−0.0185 (0.0795)	−0.1055 (0.0988)	−0.0034 (0.0551)
Race-by-victim	−0.0719 (0.5685)	−0.3666 (0.6017)	−1.2034 (0.6417)	−0.0346 (0.7602)	−0.7494 (0.4311)
Income-by-victim	−0.0860 (0.0512)	−0.1762 (0.0544)***	−0.2123 (0.0552)***	−0.1897 (0.0674)**	−0.2144 (0.0386)***
Race-income-victim	0.0220 (0.1436)	0.1160 (0.1516)	0.3170 (0.1622)*	0.0143 (0.1916)	0.2042 (0.1087)
R^2	0.018	0.019	0.02	0.02	0.01

*≤.05
**≤.01
***≤.001

Although the effect of race was found to be significant for injury offenses involving the victims' treatment and hospitalization, for more serious offenses the race

effect becomes a spurious one if the interaction between income and victimization is controlled. Each set of regressions produces results that are remarkably similar: neither the main effect of race nor its interaction with income and victimization is significant. But the main and interaction effects of income and victimization are significant for the three most serious core-item offenses.

Conclusion

In terms of the magnitudes that respondents in the severity survey assign to core-item offenses, the results suggest that there are demographic and victmization differences. Yet these differences are only for relatively serious offenses. For theft-related offenses, the best predictor is dollar value of theft. Although the effect of race for other types of offenses is confirmed in the regression results, it is specific to very serious offenses and the interaction between income and victimization.

The regression analyses raise several important questions. Why does the effect of sex for injury offenses decrease with the seriousness of the offense? In particular, why is the sex effect not greater for rape? What aspect of victimization, that is, personal or property, makes it such an excellent predictor of the severity of injury offenses? Although income and race were defined according to personal attributes, this was not the case for victimization. The categorization of victimization is based on whether the respondent or household member was the victim of a crime. It would, of course, be interesting to see what the relationship would look like based solely on the actual victimization of the respondent.

Developing and applying the scale of offense severity

Chapter 9

In previous chapters, we provided the background of the current survey of crime severity by detailing the efforts of Sellin and Wolfgang to develop an offense seriousness scale, the replications which followed, and the methodological issues which have arisen in the ensuing years. We described the effort of the present study in detail with materials concerning the design, instruments, and procedures which were followed. We presented the general findings of the survey and data analyses relative to the sociodemographic correlates of the perceived severity of crime. The final matter that remains to be addresssed is the use of the *scale* of crime severity which has resulted from the study. In this section, therefore, we discuss the elements of the scale and demonstrate how and in what contexts the seriousness scoring system may be fruitfully applied.

The classification of crime

The most common and widely used system for classifying criminal behavior is the Standard Classification of Offenses (SCO) employed by the FBI in the *Uniform Crime Reports*. This system classifies criminal events in terms of two categories—Part I and Part II. Part I offenses comprise the well-known "crime index" and consist of nonnegligent criminal homicide, rape, robbery, aggravated assault, burglary, larceny, and auto theft. All other offenses, from simple assault to parking violations, are contained in the Part II category. With few modifications, this system has been the basis of the UCR reporting system since its inception in 1930.

The basic rationale for adoption of the Part I offenses as a crime index was the belief that these "serious" offenses would be reported to the police most often and thus constitute the closest measure to the total amount of crime which is committed. Thus, the sum of the seven index offenses is treated as the volume of serious crime that is known to the police.

Although this system seems reasonably capable of producing an index of crime, an index which details both the volume and seriousness of criminal behavior, the method used to classify and count offenses renders the system misleading if not erroneous in several respects.

First, the index classification system does not provide multiple offenses (that is, a criminal event which comprises several distinct crimes). That is, according to the SCO, only the crime that has the highest rank order in the list of ordered categories shall be counted. For example, an incident composed of a rape, an aggravated assault, and a robbery would be recorded for UCR index purposes as only one crime—the rape—because rape has the highest rank order of the three crimes committed.

Second, the classification of offenses according to the broad legal label attached to them ignores the fact that each category consists of a variety of offenses that should not be equated. A robbery, for instance, may be the armed holdup of one or more persons, the infliction of serious harm, and the theft of large sums of money. On the other hand, a robbery may also be the taking of a child's lunch money by a schoolmate. Many criminal acts between these two extremes would all be classified as robberies, regardless of the degree of injury or the amount of property loss. The other index of offenses is similarly affected by the broad continuum of behavior that is subsumed under each legal category.

Third, the SCO does not differentiate between criminal events that are successful and those that are merely attempted. Equating these two categories clearly masks the amount of actual harm or loss incurred by the community.

Last, there is no weighting system in the compilation of the index crime rate. Thus, two auto thefts are allowed to contribute as much to the crime rate as do two homicides.

The method of classifying and counting criminal offenses for the index purposes just described has two overriding deficiencies. By counting only one offense, when at least two are conjoined, and by using an arbitrary set of ordered categories, the UCR reporting system provides only a partial enumeration of the specific offenses actually known to the police and thus provides misleading data about the volume of criminal behavior. By equating all offenses which carry the same generic legal label and by confounding completed and attempted acts, considerable differences in the degree of seriousness of various offenses are concealed. In other words, the UCR method provides no solution for the problem of how to deal statistically with a complex of offenses or with simple offenses that vary appreciably in seriousness but which carry the same legal title.

Skepticism regarding the basis of the UCR classification system and the usefulness of the crime index produced from it appears warranted. Because the literature contains extensive critiques of the UCR (see, for example, Wolfgang 1963), the preceding discussion was brief and designed to review the more important shortcomings of the UCR system. Yet, it should be clear that because this measurement approach misrepresents and even masks the actual volume and seriousness of crime, additional measurement schemes designed to reflect both the quantitative and qualitative dimensions of criminal behavior offer substantive utility.

Scaling the gravity of crime

Although we have questioned the value of the particular crime index developed by the FBI, we are in full agreement that an index must be based on certain kinds of offensive conduct. However, instead of selecting these kinds of conduct on the basis of the title given them by the criminal code, we believe that, in addition, the nature of the harm inflicted should govern the selection of an index.

Thus, we conclude that a scale of offense gravity should be constructed utilizing events which involve violations of the criminal law that inflict bodily harm on one or more victims and/or cause property loss by theft, damage, or destruction. We further maintain that these effects are more crucial to the establishment of an index of crime than the specific legal labels attached to the events.

The above criterion of selecting events for a crime index differs in two major respects from the one used in the UCR system. First, it does not allow the inclusion of offenses that produce none of the effects described. Thus, the offenses utilized in our scale all share one very important feature—some degree of measurable social harm to the community. Second, the system includes many offenses that are not counted among the index crimes category in the UCR. Put simply, we have chosen the criterion of discernible consequences over that of an

ordered set of legal categories which may or may not appropriately reflect the seriousness of criminal behavior.

We have also determined that the class of violations to be used in the scoring system should be subdivided into three categories in order to indicate the major effect associated with the offense. The first category includes events which produce bodily harm to a victim or to victims even though property theft or damage may also be involved. The second class of events consists of offenses which do not involve injury but have a property theft component even when accompanied by damage. The last category consists of offenses that involve only damage to property.

In addition, because we believe that an event should not be evaluated solely in terms of the injuries and losses which occur, the system takes account of certain other factors of the event that aggravate the crime. For example, a crime is aggravated if the offender engages in intimidating behavior (especially the use of a weapon). Further, a property crime may be aggravated if the offender damages the premises by forcible entry. Thus, the crime severity scale takes account of all the components (injury, theft, and damage) and the aggravating factors (intimidation and premises forcibly entered).

The seriousness scoring system

To score criminal events, the following items, insofar as they apply to a given event, must be collected and recorded.

(1) The number of victims who, during the event, received minor bodily injuries or were treated and discharged, hospitalized, or killed.

(2) The number of victims of forcible sexual intercourse.

(3) The presence of physical or verbal intimidation or intimidation by a dangerous weapon.

(4) The number of premises forcibly entered.

(5) The number of motor vehicles stolen and whether the vehicle was or was not recovered.

(6) The total dollar amount of property loss during an event through theft and damage.

Determining the effects of the event

(1) *Number of persons injured.* Each victim receiving some bodily injury during an event must be accounted for. Physical injuries usually occur as a direct result of assaultive events, but they may be a byproduct of other events as well. The four levels of bodily injury are—

(a) Minor harm—An injury that requires or receives no professional medical attention. The victim may, for instance, be pushed, shoved, kicked, knocked down, and receive a minor wound—cut, bruise, etc.

(b) Treated and discharged—The victim receives professional medical treatment but is not detained for further medical care.

(c) Hospitalized—The victim requires inpatient care in a medical facility, regardless of its duration, or outpatient care for three or more clinical visits.

(d) Killed—The victim dies as a result of the injuries, regardless of the circumstances in which they were inflicted.

(2) *Sexual intercourse by force.* This event occurs when a person is intimidated and forced against his/her will to engage in a sexual act—rape, incest, sodomy, for instance. Such an event may have more than one victim, and the score depends on the number of such victims. A continuous relationship such as may occur in forcible incest is to be counted as one event.

A forcible sex act is always accomplished by intimidation. Thus, the event must also be scored for the type of intimidation involved (see below). Intimidation is scored for all victims in a forcible sex act (such is not the case for other events, see below).

The victim of one or more forcible sex acts during the event is always assumed to have suffered at least minor harm. Even when medical examination may not reveal any injuries, the event must be scored for minor harm. This level of injury should also be scored (rather than treated and discharged) when the victim is examined by a physician *only* in order to ascertain if venereal infection has occurred or to collect evidence that the sex act was completed.

(3) *Intimidation.* This is an element in all events in which one or more victims are threatened with bodily harm (or some other serious consequences) for the purpose of forcing the victim(s) to obey the request of the offender(s) to give up something of value or to assist in a criminal event that leads to someone's bodily injury and/or to property theft or damage. In addition to rape, robbery is a classic example. Ordinary assault and battery, aggravated assault and battery, or homicide are *not* to be scored for intimidation merely because someone was assaulted or injured. The event must also have included the threat of force for intimidation to have been present. With the exception of forcible sex acts, criminal events involving intimidation are scored only once regardless of the number of victims who are intimidated. The types of intimidation are—

(a) Physical or verbal—Physical intimidation means the use of strong-arm tactics such as threats with fists, menacing gestures, etc. Verbal intimidation means spoken threats only, not supported by the overt display of a weapon.

(b) Intimidation by weapon—Display of a weapon, such as a firearm, cutting or stabbing instrument, or blunt instrument capable of inflicting serious bodily injury.

(4) *Number of premises forcibly entered.* As used here, forcible entry means unlawful entry, even when not by "breaking," into a premise of a private character to which the public does not have free access or the breaking and entering into a premises to which the public ordinarily has free access. Such an entry is, in itself, an event to be scored if it causes some degree of damage to property—a broken lock, window, or door, for instance—even though it is not followed necessarily by an injury to a person or by a theft of and damage to property inside the premises.

Usually, only one distinct premise will be entered, such as a family dwelling, an apartment, or a suite of offices, but some events may embrace several such entries. The scoring depends on the number of premises forcibly entered during the event and occupied by or belonging to different owners, tenants, or lessees. Contrary to the "hotel rule" used in the *Uniform Crime Reports,* each hotel, motel, or lodginghouse room broken into and occupied by different tenants should be scored. If a building was forcibly entered and further entries made inside, the total

number of entries scored should include the forcible entry of the building even when the building belongs to someone who is victimized by a further entry inside.

(5) *Number of motor vehicles stolen.* As used here, motor vehicle means any self-propelled vehicle—automobile, truck, motorcycle, tractor, airplane. Disregard self-propelled lawnmotors and similar domestic instruments in this section; the value of such items is accounted for in the theft/damage section (see below). Because motor vehicles may be either stolen and recovered or stolen and never returned to the legal owner, the number of vehicles in each category must be accounted for separately and will receive a different score value.

(6) *Value of property stolen or damaged.* Regardless of the kind of event scored and the number of victims, the total value of all property stolen or damaged must be determined whether it is wholly or partially recovered and whether or not the loss is covered by insurance.

Motor vehicle thefts require special handling. The score of the event does not depend on the value of the vehicle stolen. Thus, the dollar value of the vehicle is ignored in this element. However, if the vehicle is recovered damaged and/or property has been taken from it, the loss is the sum of the cost of the damage and the value of the stolen articles.

Figure 52

Score sheet

Identification number(s): _____

Effects of event: I T D (circle all that apply)

Component scored	Number of victims	×	Scale weight	=	Total
I Injury					
(a) Minor harm	_____		1.47		_____
(b) Treated and discharged	_____		8.53		_____
(c) Hospitalized	_____		11.98		_____
(d) Killed	_____		35.67		_____
II Forcible sex acts	_____		25.92		_____
III Intimidation					
(a) Verbal or physical	_____		4.90		_____
(b) Weapon	_____		5.60		_____
IV Premises forcibly entered	_____		1.50		_____
V Motor vehicle stolen					
(a) Recovered	_____		4.46		_____
(b) Not recovered	_____		8.07		_____
VI Property theft/damage	_____		*		_____

* $\log_{10}Y = .26776656 \log_{10}X$
where Y = crime severity weight
X = total dollar value of theft or damage.

Total score _____

The seriousness scoring system

The offense components discussed above constitute the scale items in our index of the gravity of crime. The scoring system used to evaluate the seriousness of crime can best be presented by first describing the elements of the system and then illustrating the scoring procedure with hypothetical offenses.

Figure 52 depicts the elements of the system which may be defined as follows. The first item which must be collected is the *identification number.* This is the number given to a particular criminal event. It may be a central complaint number, a district number, or some similar designation. If the same event is represented by more than one such number, all numbers should be recorded so that the event can be scored as a whole. In most cases, an event will be described in complaint or investigation reports carrying but one identifying number. In some cases, however, one event may become the subject of reports with different numbers (two or more such reports describing the same event). For instance, in a rape event with two victims, each victim may file his or her own complaint and thus it would be necessary to coordinate the separate reports before the event could be scored.

To classify the event, the presence of I (injury), T (theft), and D (damage) components must be determined. Because the construction of subindices is often necessary, as many of the components as apply should be circled. From this procedure it is possible to arrive at seven classifications of an event—I, T, D, IT, ID, TD, and ITD. It is possible, therefore, to use this classification scheme as a solution to the problem of dealing with the complex criminal event.

Following the determination of the class to which the event belongs, the event is scored for seriousness. Column 1 lists the various offense components and the particular levels of each. Column 2 refers to the number of victims who experience each level of the offense components. The exceptions to the rule of accounting for the number of times each component occurs involve nonrape event intimidations where this component is scored but once regardless of the number of victims and the value of property loss which is summed across all victims. Column 3 gives the scale weight assigned to each element of the offense. Column 4 is reserved for the total score for a given

component; this is obtained by multiplying the figure in column 2 (where applicable) by the weight listed in column 3. By adding all the figures in column 4, the total score for the event is found.

Illustrations of how the proposed scoring system works are given below. For the purpose of showing how it differs from that of the UCR system, the problems have been copied from the *Uniform Crime Reporting Handbook* issued by the Federal Bureau of Investigation. The problems as originally listed there generally do contain all the necessary information. Therefore, hypothetical data have been supplied in the parentheses.

Problem 1. "A holdup man forces a husband and his wife to get out of their automobile. He shoots the husband, gun whips and rapes the wife (hospitalized) and leaves in the automobile (recovered later) after taking money ($100) from the husband. The husband dies as a result of the shooting."

Solution: UCR—1 nonnegligent homicide.

Proposed Scoring

Effects of event: [I] [T] D

Element	Number	Weight	Total score
I(c)	1	11.98	11.98
I(d)	1	35.67	35.67
II	1	25.92	25.92
III(b)	1	5.60	5.60
V(a)	1	4.46	4.46
VI($100)	NA	3.43	3.43

Total score 87.06

In this event, the husband was killed (35.67); the wife was raped (25.92), threatened with a gun (5.60) and did sustain injuries requiring hospitalization (11.98). The car was stolen and recovered (4.46). The total value of the property loss was $100 (3.43). In comparison to the UCR solution of one nonnegligent criminal homicide, we find an injury-theft event with a total score of 87.06

Problem 2. "Two thieves break into a warehouse (damage $20) and have loaded considerable merchandise (worth $3,500) on a truck. The night watchman is knocked unconscious with some blunt instrument (treated and discharged). The thieves drive away in the stolen truck (not recovered)."

Solution: UCR—1 robbery.

Proposed Scoring

Effects of event: [I] [T] [D]

Element	Number	Weight	Total score
I(b)	1	8.53	8.53
IV	1	1.50	1.50
V(b)	1	4.46	4.46
VI($3520)	NA	8.91	8.91

Total score 23.40

This offense involves the forcible entry of a building (1.50), injury to the night watchman requiring treatment (8.53), theft of an unrecovered motor vehicle (4.46), and property loss of $3,520 (8.91). The UCR would classify this event as one robbery whereas our system reveals that it is a complex event which involves the combination of the three primary effects of crime (injury, theft, and damage) and has a total seriousness score of 23.40.

Problem 3. "Three men break into a public garage (damage $20) after closing hours. They steal cash from the garage office ($50) and two automobiles from the lot. One vehicle was recovered undamaged; the other was not found."

Solution: UCR—1 burglary.

Proposed Scoring

Effects of event: I [T] [D]

Element	Number	Weight	Total score
IV	1	1.50	1.50
V(a)	1	4.46	4.46
V(b)	1	8.07	8.07
VI($70)	NA	3.12	3.12

Total score 17.15

The UCR solution to this problem would be the reporting of a burglary. We classify the event as a theft-damage crime which involves forcible entry (1.50); two motor vehicles stolen with one recovered (4.46), the other not found (8.07); and property loss totalling $70 (3.12). The total score for the event is 17.15.

Problem 4. "An automobile containing clothing and luggage valued at $375 is stolen. The car is recovered (undamaged) but the clothing and luggage are missing."

Solution: UCR—1 auto theft.

Proposed Scoring

Effects of event: I [T] D

Element	Number	Weight	Total score
V(a)	1	4.46	4.46
VI($375)	NA	4.89	4.89

Total score 9.35

In this example, the two scoring systems are close because the UCR would record one auto theft while our classification would record theft. However, our scale further signifies that the vehicle was recovered (4.46) and there was a loss of property in the amount of $375 (4.89) which produces a final score of 9.35.

Problem 5. "Answering an armed robbery in progress broadcast, police become engaged in a gun battle with three armed robbers; one of the bandits is killed and the other two captured. (Presumably no one was injured except the offenders.)"

Solution. If no one was injured except the offenders, this would be a theft event if theft had actually occurred before the police arrived. If so, the event would be scored for intimidation by weapon (5.60) plus the score for the value of property taken, for instance, $100 (3.43), which totals 9.03 for the event. If the robbers had failed to carry out the offense because the police came before any property had been taken, the event would be considered an attempt and not scored at all within the index of crime severity. Despite all these considerations, the UCR would still record this event as one robbery.

Problem 6. "Answering a riot call, police find that seven persons were in a fight. A variety of weapons are strewn about. None of the participants is particularly cooperative. Each one claims innocence but is vague regarding who is responsible for the assault. Three of the seven are severely wounded (all were hospitalized) while the remaining four receive only

minor cuts and bruises (no medical treatment)."

Solution: UCR—3 aggravated assaults.

Proposed Scoring

Effects of event: [I] T D

Element	Number	Weight	Total score
I(a)	4	1.47	5.88
I(c)	3	11.98	35.94

Total score 41.82

The UCR procedure for the enumeration of the event calls for the designation of three aggravated assaults. Our scoring process accounts for these same effects (35.94) as well as the four minor injuries (5.88). Taken together, these consequences produce a combined score of 41.82 for this injury event.

Problem 7. "Ten persons are present in a nightclub when it and the 10 persons are held up by armed ban' s. Two of the victims resist the rob' and are seriously injured (hospitalization). (The combined property loss is $1,800.)"

Solution: UCR—1 robbery.

Proposed Scoring

Effects of event: [I] [T] D

Element	Number	Weight	Total score
I(c)	2	11.98	23.96
III(b)	NA	5.60	5.60
VI($1,800)	NA	7.44	7.44

Total score 37.00

The UCR classification of the event as one robbery clearly hides several important ingredients. Namely, we arrive at a combined injury-theft event which involves two hospitalized victims (23.96), intimidation by a dangerous weapon (5.60), and dollar loss of $1,800 (7.44). The overall score of 37.00 indicates that the recording of one robbery could be very misleading.

Problem 8. "Six rooms in a hotel are broken into (damage $60) by two sneak thieves on one occasion. (The total value of property stolen from the rooms, occupied by different tenants, amounted to $1,200.)"

Solution: UCR—1 burglary.

Proposed Scoring

Effects of event: I [T] [D]

Element	Number	Weight	Total score
IV	6	1.50	9.00
VI($1,260)	NA	6.76	6.76

Total score 15.76

These illustrations of the method of scoring criminal events show that it will yield a more accurate measure of this phenomenon than other methods now in use. Although other systems take account of both the quantity and quality of crime, they do not result in the same degree of precision available with our procedure. Thus, the UCR system of counting "index crimes" determines the degree of seriousness of a criminal event by selecting the single element in the offense which bears the legal label that is highest in the rank order of offenses. Further, with this system all aggravated assaults are equally injurious, all robberies just as serious, all burglaries alike, etc., for within each of these classes each offense is given the same score of one.

The method for dealing with the relative gravity of criminal offenses discussed and illustrated above has the same ultimate aim as the UCR scheme but pursues it in a different manner. Instead of focusing on an ordered set of crimes, our scoring system used a scale which assigns different weights to *all* elements of an index *event*. When these score values are added together they provide a score for the total event, a score which can be placed on a continuum reflecting the quantity and quality of criminal behavior.

Applying the crime severity scale

We have stressed that the seriousness scoring system described above has great potential for improving the measurement of crime. It would seem that this benefit applies to researchers and criminal justice practitioners alike. However, there appears to be some question whether in practice the acknowledged value of the scale warrants the extra effort required by the scoring system, an effort not necessary with the simple enumeration system of the UCR, for instance.

That is, it was pointed out in chapter 1 that several critics of the original Sellin-Wolfgang scale have concluded that the current UCR system may be more than adequate for representing the volume and seriousness of criminal behavior and that the additional costs and difficulties surrounding the implementation of the gravity scale overshadow the potential benefits (Hindelang 1974, Blumstein 1974). We have noted that this claim follows attempts to apply the scale to aggregate level data by weighting the frequency of index events with mean seriousness scores. Although we have also referred to several rebuttals which demonstrate the inappropriateness of these aggregate comparisons, the point needs repeating here.

The crime severity scale forms a system that begins with individual criminal events. Through the procedure explained previously, several important components of the criminal event are evaluated and seriousness scores are assigned. Although the system can and should be used to construct aggregate rates of crime (see below), criminal events must be scored for seriousness *before* such rates are constructed. The process of simply multiplying the frequency of an event by an average seriousness score merely compounds the measurement problems associated with the classification of the event in the first place. Clearly, this procedure ignores the wealth of data represented by the criminal event and thus can vitiate the potential of the scale.

Research applications

One of the most frequent research issues that confronts criminology is the construction and analysis of crime rates. Crime rates form the basis of analyses designed to investigate changes over time or variation across certain levels of aggregation (for example, national, state, city, etc.). Usually researchers employ the data provided in the *Uniform Crime Reports* for measuring total, violent, and property crime. We have noted previously that the UCR system gives equal weight

to each of the seven index offenses which together represent the total volume of crime and, when separated by class, reflect the amounts of violent and property crime. The essential problem with the rates of crime derived from the UCR is that the impact of the less frequent (and usually more serious) offenses is biased downward. For example, because the homicide rate is usually less than two percent of the violent crime rate, more than a 50-percent increase in the homicide rate would be needed to affect a 1-percent increase in the violent crime rate. Clearly, this aspect of the UCR system seriously jeopardizes the value of the rates for research purposes, particularly with respect to measuring significant shifts in the severity of crime.

Alternatively, crime rates could be constructed which reflect the relative seriousness of each offense and, consequently, such rates would better reflect changes in the amount of social harm associated with criminal behavior. In their work Sellin and Wolfgang (1964) suggested several possible indices or rates that could be based on crimes weighted for seriousness. These rates are displayed in figure 53. Although the rates were designed primarily for application to juvenile delinquency, they have direct transference to adult data as well.

Formula I provides the chief comparative statistic for a weighted index of delinquency based on the juvenile population age 7 through 17. The resulting statistic answers the crucial question: Among a group of 10,000 juveniles (or any other age group) in the community, what is the amount of seriousness of delinquency harm (or criminal harm) that they inflict?

Formula II provides an index of the "community harm" burdening the whole community by indicating the amount of seriousness of crime per 10,000 (or 100,000) population. This rate is analogous to the UCR index rate but appears far more valuable because the elasticity of serious (although infrequent) crimes is built into the weighting scheme. Formula III provides information on the average seriousness score per event and thus could also prove useful in comparative analyses.

Formulas IV, V, and VI describe, respectively, the average seriousness per offender, the seriousness score in the event involving the average offender, and the average juvenile's seriousness among the entire juvenile population. Formulas VII and VIII do not involve seriousness weights for events and express simply the average number of offenders per event and the number of offenders in the event involving the average offender.

These formulas represent but a sample of the weighted rates that can be constructed. It is possible to use other denominators to encompass different race, sex, or SES groups which may then be compared by seriousness. It is also possible to compute rates for the three main classes of events—injury, theft, and damage. In this way subindices could be constructed in order to compare seriousness both across and within offense categories. Regardless of which rates are utilized, the utilization of seriousness scores to weight the various components of crime produces an index system that can, as accurately as possible, measure the real or actual harm associated with illegal behavior during a given period or in a given area.

It should be clear that another very useful application of the scale concerns what might be called offense-specific analysis. Previous discussions have indicated that criminal offenses can be evaluated and scaled, thus providing a basis for comparing the relative seriousness between events. This can be accomplished in two ways. First, a numerical score can be assigned to the event overall and for various components, such as injury. Second, the event can be assigned to one of several classes depending on which major component (injury, theft, or damage) of seriousness characterizes the event. The value of these approaches can best be illustrated with respect to research on criminal careers.

Usually an offender's career is typified by the number of offenses he/she has committed. The offenses may be grouped into various classes of seriousness as, for example, crimes against the person or property. Thus a "rap sheet" may indicate a long series of crimes, stretching over several years, including thefts, burglaries, and assaults, as the law defines them. These labels do not in themselves give any indication of the seriousness of the misconduct, either in terms of absolute severity or whether such severity fluctuates during the offender's career or escalates as the career progresses.

Scoring the offense career by the proposed system would show much more clearly, for instance, whether the offenses increased in harmfulness or, despite the legal labels, actually decreased in that respect. The severity scale may also reveal differences, otherwise unperceived, among offenders who produce harmful effects in systematic ways such as through injury, theft, or damage offenses. It may also be possible through seriousness scoring to find differences among offenders concerning such correlates as race, age, sex, social class, etc., which do not appear when frequency counts of offenses are used.

This strategy for evaluating a criminal career has clear benefits for research designed to describe and subsequently explain criminal behavior. It provides a means for comparing the occasional offender with his/her more frequent counterparts, a basis that does not merely count offenses but rates their degree of social harm. It thus improves the attempt to delineate patterns of criminal behavior which may be hidden by the broad legal labels usually applied. As a result, our understanding of the phenomenon of crime may be enhanced; in addition, our ability to control if not prevent crime would also be improved.

Increasingly, victimization surveys have come to occupy a central place in the measurement of crime. By interviewing victims about the crimes committed against them, the researcher can generate estimates of the incidence of criminal behavior, estimates that do not depend on police recording practices. From these surveys we have learned that a considerable amount of crime actually occurs but is not reported to the police. Clearly, victimization data are an important adjunct to police statistics. Similarly, self-report studies are used to elicit data on the hidden offenses committed by survey respondents. These data not only address the incidence of crime, they also provide information on the sociodemographic correlates of official vs. hidden delinquency.

By applying the crime severity scale to the offenses reported in both victim and self-report surveys, research could address topics other than just incidence and prevalence. For example, comparisons could be made between the seriousness of offenses that victims report to the police

Figure 53

Formulas for computing delinquency index statistics

Formula	Explanation	Philadelphia 1960 estimate	Interpretation	Short title
I. $\frac{\Sigma fs}{j} k$	$\frac{\text{(Seriousness summed over events)}}{\text{(Juvenile population)}}$	$(10)^* \frac{998}{342{,}252}$ 10,000 ≐ 291.6	Average number of seriousness units, or weighted rate per 10,000 juveniles at risk.	Juvenile harm
II. $\frac{\Sigma fs}{p} k$	$\frac{\text{(Seriousness summed over events)}}{\text{(Total population)}}$	$(10)^* \frac{998}{2{,}002{,}232}$ 10,000 ≐ 40.8	Average number of seriousness units indicated, or weighted rate per 10,000 population.	Community harm
III. $\frac{\Sigma fs}{f}$	$\frac{\text{(Seriousness summed over events)}}{\text{(Events)}}$	$\frac{998}{306}$ ≐ 3.26	Average number of seriousness units per event.	Seriousness per event
IV. $\frac{\Sigma fs}{\Sigma fn}$	$\frac{\text{(Seriousness summed over events)}}{\text{(Offenders)}}$	$\frac{998}{643}$ ≐ 1.55	Average number of seriousness units per offender.	Seriousness per offender
V. $\frac{\Sigma fns}{\Sigma fn}$	$\frac{\text{(Seriousness summed over offenders)}}{\text{(Offenders)}}$	$\frac{2{,}141}{643}$ ≐ 3.33	Number of seriousness units in event involving average offender.	Average offender seriousness
VI. $\frac{\Sigma fns}{j}$	$\frac{\text{(Seriousness summed over offenders)}}{\text{(Juvenile population)}}$	$(10)^* \frac{2{,}141}{342{,}252}$ ≐ 0.06	Number of seriousness units in event involving average juvenile at risk	Average juvenile seriousness
VII. $\frac{\Sigma fn}{\Sigma f}$	$\frac{\text{(Offenders)}}{\text{(Events)}}$	$\frac{643}{306}$ ≐ 2.10	Average number of offenders per event.	Offenders per event
VIII. $\frac{\Sigma fn^2}{\Sigma fn}$	$\frac{\text{(Offenders summed over offenders)}}{\text{(Offenders)}}$	$\frac{2{,}060}{643}$ ≐ 3.22	Number of offenders in event involving the average offender.	Offenders in average offender's event

*When using the Philadelphia data it was necessary to multiply by (10) to account for the fact that the data are from a 10-percent sample.

Source: Sellin and Wolfgang (1964), p. 307.

and those that victims choose to hide. Further, research could investigate whether different segments of the population experience different types or degrees of offense seriousness. In terms of self-report data, the application of seriousness scores provides the ability to compare the severity of offenses that are known to the police with that of hidden crime. In any event, victimization and self-report data weighted for seriousness further enhance the important function that these measurement approaches serve in augmenting the official crime statistics.

The scale also appears to have useful application in evaluation studies. Generally, recidivism, or rather the lack thereof, is used as the success or outcome measure in program evaluations. Another important outcome measure that should be investigated is the seriousness of crime. By scaling the offenses committed by program participants, evaluators could examine the possible effects of treatment in reducing the severity of crime committed as well as its volume. For example, one might investigate the relative effectiveness of intensive, moderate, and minimal probation or parole supervision, or evaluate a treatment strategy for violent offenders. By using seriousness rates, such program evaluations could be rendered more substantial and perhaps could lead to more definitive conclusions about the effectiveness of current treatment strategies.

Practitioner applications

The use of the crime severity scale is not limited to research applications; it can be implemented in various spheres of the criminal justice system. It was noted in chapter 1 that Heller and McEwen (1975) tested the utility of the scale for law enforcement. The results indicate that the scale may be used in several ways. First, it can be used as the basis for work assignments of detectives: cases with high seriousness scores could be allocated first instead of arbitrarily choosing cases for investigation. In this regard the scale was also suggested as providing a means to estimate a seriousness-of-offense clearance rate which would reflect more accurately the effectiveness of detective operations. Second, the scale could be used in the allocation of patrol personnel to the shifts (watches) with the higher seriousness scores. Last, the scale could be applied in the determination of patrol beats so that the patrols would cover the high seriousness areas more effectively.

The scale may be applied to assist the prosecution function. We have referred to the fact that the original Sellin-Wolfgang scale has been incorporated into the PROMIS system in Washington, D.C., to estimate the urgency of a case for prosecution. However, the scale can also be used to assist in the classification of offenders. That is, many jurisdictions across the country have adopted "career criminal" prosecution programs which are designed to provide more effective handling for serious repeat offenders. The special procedures may involve more extensive investigations before trial and uniform case processing from indictment through sentencing. Naturally, career criminals must be identified and the usual procedure is to count rap sheet offenses until some prespecified number is reached. However, some career criminal programs also attempt to determine the seriousness of the offender's career, but evaluation in this respect usually consists of determining whether the offenses are person vs. property or felony vs. misdemeanor.

The identification and prosecution of career criminals could be made much more effective by using the crime severity scale. Prosecutors would then have available a measure with which to compare readily offenders and the seriousness of their careers. Consequently, prosecutors could more easily identify candidates for special handling by the career criminal unit and justify such choices with reference to both the type and degree of social harm they involve.

Another stage of the criminal justice system for which the crime severity scale has particular relevance is at the judicial level. With respect to forming a policy for the sentencing of convicted offenders, the seriousness of criminal offenses would seem to be one of the most relevant issues. As far back as the 18th century, criminologists called for a punishment system which determined the period of incarceration on the basis of the harm caused by the crime (in contradistinction to the arbitrary setting of penalties that was in widespread use). It was assumed that punishments graduated for offense severity would serve the goals of both retribution and deterrence while at the same time reducing the disparity and capriciousness of existing methods. Thus, offenders convicted of equally serious crimes would receive the same penalty and the penalty should be more harsh than that applied for less serious violations.

For reasons which we need not discuss here, the classical doctrine of punishment gave way to the rehabilitative approach in which criminal justice is individualized and the offender is "treated" according to his/her particular needs rather than punished according to the seriousness of the offense. The rehabilitation approach thus focused on the person, not the crime, and substituted treatment and reform for the previous goal of retribution advocated by the classical doctrine. As a consequence of this change, the fixed periods of incarceration used in the retribution model no longer addressed the needs of the punishment system; an alternative sentencing policy was needed.

The indeterminate sentence appeared to represent the ideal solution. Under this system, an offender is sentenced to prison not for a fixed period but for an interval of time (for example, from 10 to 20 years). The actual amount of time served depends on the success of the treatment in reforming the offender so that he/she could return to society. Although considerable variation exists in the application of the indeterminate sentence system (for example, some jurisdictions allow parole before the expiration of the minimum sentence while others require that the minimum, at least, be served before parole could be considered), the essential feature of the policy is that correctional system officials are accorded great discretion in determining when an offender would be released.

The rehabilitative ideal has been the dominant philosophy in corrections for many decades; but in the past few years the rehabilitation approach has been subjected to severe criticism. The criticism ranges from a concern that treatment has been very ineffective in reforming criminals to questions of the legality of forced punishment under the guise of treatment. As an alternative to the rehabilitative model, the philosophy of just or commensurate deserts has been gaining more and more acceptance. Essentially, the just deserts principle is a revival of the classical doctrine which calls for the severity of punishment to be commensurate with the seriousness of the crime. Further, this system tries to eliminate disparity by employing presumptive sentences in place of the indeterminate ones used in the rehabilitative model.

Clearly, the crime severity scale has value in the area of sentencing. Under the just deserts approach, the scale could be used to rank the seriousness of offenses and thus ensure that gradients of punishment were implemented. Such gradients could be constructed in terms of both the class of event (that is, injury, theft, damage) and the seriousness score. Use of the scale would thus provide an operational definition for the just deserts model and also ensure that disparity in sentences could be minimized.

In this chapter, we have detailed several applications of the scaling system relevant for both researchers and practitioners. We suggested that the scale offers a significant increase in information over that available from the simple UCR count alone and several examples of this additional substantive yield were presented. As an alternative strategy for the development of crime statistics, the crime severity scale should find a useful place in the production of this important social indicator.

Interview form Version 01

FORM NCS-201
(4-14-77)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
U.S. DEPARTMENT OF JUSTICE

NATIONAL SURVEY OF CRIME SEVERITY
VERSION 01
NATIONAL CRIME SURVEY SUPPLEMENT

NOTICE – Your report to the Census Bureau is confidential by law (U.S. Code 42, section 3771). All identifiable information will be used only by persons engaged in and for the purposes of the survey, and may not be disclosed or released to others for any purpose.

A. Sample (cc 4)	B. Control number (cc 5) PSU	Segment	CK	Serial	C. H.H. No. (cc 2)	D. Version No.
JO___						01

E. Respondent Line No. | Name

F. Interviewer identification Code | Name

G. Date completed

H. Type of interview
1 ☐ Personal
2 ☐ Telephone
3 ☐ Not applicable
9 ☐ OFFICE USE ONLY

I. Was anyone else present during interview?
1 ☐ Yes – All
2 ☐ Yes – Part
3 ☐ No
4 ☐ Not applicable
9 ☐ OFFICE USE ONLY

J. Reason for noninterview
1 ☐ Type Z noninterview on NCS
2 ☐ Proxy interview on NCS
3 ☐ Refused NSCS (supplement only)
4 ☐ Language difficulty
5 ☐ Could not understand instructions –*Explain on reverse side*
6 ☐ Other – *Specify*

OFFICE USE ONLY	K.	L.	M.	N.	O.	P.

INTERVIEWER INSTRUCTION ▶ *Interview all household members 18 years and over (proxy interview not acceptable)*

INTRODUCTION – I would like to ask your opinion about how serious YOU think certain crimes are.

The first situation is, "A person steals a bicycle parked on the street." This has been given a score of 10 to show its seriousness. *(PAUSE)* Use this first situation to judge all the others. For example, if you think a situation is 20 TIMES MORE serious than the bicycle theft, the number you tell me should be around 200 *(PAUSE)* or if you think it is HALF AS SERIOUS, the number you tell me should be around 5 and so on. *(PAUSE)* There is no upper limit; use ANY number so long as it shows how serious YOU think the situation is. *(PAUSE)* If YOU think something should not be a crime, give it a zero. *(PAUSE)*

Consider the following situation: "A person robs a victim. The victim is injured but not hospitalized." What number would you give to this situation to show how serious YOU think it is compared to the bicycle theft with a score of 10? *(Obtain answer)* . . . . . .

"A person under 16 years old plays hooky from school." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . . .

"A person stabs a victim to death." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . . .

1. A person steals a bicycle parked on the street	10
2. A person robs a victim. The victim is injured but not hospitalized	
3. A person under 16 years old plays hooky from school	
4. A person stabs a victim to death	

Let's go over these first few answers to be sure I have recorded them correctly. You feel that a robbery in which the victim is injured is (more/less/as) serious (than/as) the bicycle theft, *(PAUSE)* and that playing hooky is (more/less/as) serious (than/as) the bicycle theft; is that correct? *(PAUSE)*

INTERVIEWER INSTRUCTION: *Stop and resolve any misunderstandings about the instructions. Make any changes to the practice scores as needed.*

Score the remaining situations in the same way by comparing each one to the bicycle theft. There are no right or wrong answers. Remember, you may use any numbers, as high or low as you wish. *(PAUSE)*

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
5. A person kidnaps a victim.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
6. Several large companies illegally fix the retail prices of their products.	
7. A person steals property worth $10 from outside a building.	
8. A person robs a victim of $1,000 at gunpoint. The victim is wounded and requires treatment by a doctor but not hospitalization.	
9. A person conceals the identity of others that he knows have committed a serious crime.	
10. A company pays a bribe of $10,000 to a legislator to vote for a law favoring the company.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
11. A person takes part in a dice game in an alley. . . .	
12. A person intentionally injures a victim. As a result, the victim dies.	
13. A person walks into a public museum and steals a painting worth $1,000.	
14. A man forcibly rapes a woman. No other physical injury occurs.	
15. A person does not have a weapon. He threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed. . . .	

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
16. A person smokes marijuana.	
17. A person breaks into a display case in a store and steals $1,000 worth of merchandise.	
18. A person knowingly lies under oath during a trial.	
19. A person, using force, robs a victim of $10. The victim is hurt and requires hospitalization.	
20. A person intentionally sets fire to a building causing $100,000 worth of damage.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
21. A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result, 20 people become ill but none requires medical treatment.	
22. An employer orders one of his employees to commit a serious crime.	
23. A person steals property worth $1,000 from outside a building.	
24. A man beats his wife with his fists. She requires hospitalization.	
25. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	

Q. To help us understand peoples' scores, I would like to ask an additional question. *(PAUSE)* BEFORE I gave you the last item to score, did you have an upper limit or a highest number in mind that you wouldn't go over?

1 ☐ No – End Interview
2 ☐ Yes – What was it?_____ *(Explain on reverse side any special circumstances, then end interview.)*

Interview form
Version 02

FORM NCS-202
(4-14-77)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
U.S. DEPARTMENT OF JUSTICE

NATIONAL SURVEY OF CRIME SEVERITY
VERSION 02
NATIONAL CRIME SURVEY SUPPLEMENT

NOTICE – Your report to the Census Bureau is confidential by law (U.S. Code 42, section 3771). All identifiable information will be used only by persons engaged in and for the purposes of the survey, and may not be disclosed or released to others for any purpose.

A. Sample (cc 4)	B. Control number (cc 5) PSU	Segment	CK	Serial	C. H.H. No. (cc 2)	D. Version No.
JO___						02

E. Respondent Line No. | Name

F. Interviewer identification Code | Name

G. Date completed

H. Type of interview
1 ☐ Personal
2 ☐ Telephone
8 ☐ Not applicable
9 ☐ OFFICE USE ONLY

I. Was anyone else present during interview?
1 ☐ Yes – All
2 ☐ Yes – Part
3 ☐ No
4 ☐ Not applicable
9 ☐ OFFICE USE ONLY

J. Reason for noninterview
1 ☐ Type Z noninterview on NCS
2 ☐ Proxy interview on NCS
3 ☐ Refused NSCS (supplement only)
4 ☐ Language difficulty
5 ☐ Could not understand instructions –*Explain on reverse side*
6 ☐ Other – *Specify*

OFFICE USE ONLY	K.	L.	M.	N.	O.	P.

INTERVIEWER INSTRUCTION ▶ *Interview all household members 18 years and over (proxy interview not acceptable)*

INTRODUCTION – I would like to ask your opinion about how serious YOU think certain crimes are.

The first situation is, "A person steals a bicycle parked on the street." This has been given a score of 10 to show its seriousness. *(PAUSE)* Use this first situation to judge all the others. For example, if you think a situation is 20 TIMES MORE serious than the bicycle theft, the number you tell me should be around 200 *(PAUSE)* or if you think it is HALF AS SERIOUS, the number you tell me should be around 5 and so on. *(PAUSE)* There is no upper limit; use ANY number so long as it shows how serious YOU think the situation is. *(PAUSE)* If YOU think something should not be a crime, give it a zero. *(PAUSE)*

Consider the following situation: "A person robs a victim. The victim is injured but not hospitalized." What number would you give to this situation to show how serious YOU think it is compared to the bicycle theft with a score of 10? *(Obtain answer)* . . . . . .

"A person under 16 years old plays hooky from school." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . . .

"A person stabs a victim to death." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . . .

1. A person steals a bicycle parked on the street	10
2. A person robs a victim. The victim is injured but not hospitalized	
3. A person under 16 years old plays hooky from school	
4. A person stabs a victim to death	

Let's go over these first few answers to be sure I have recorded them correctly. You feel that a robbery in which the victim is injured is (more/less/as) serious (than/as) the bicycle theft, *(PAUSE)* and that playing hooky is (more/less/as) serious (than/as) the bicycle theft; is that correct? *(PAUSE)*

INTERVIEWER INSTRUCTION: *Stop and resolve any misunderstandings about the instructions. Make any changes to the practice scores as needed.*

Score the remaining situations in the same way by comparing each one to the bicycle theft. There are no right or wrong answers. Remember, you may use any numbers, as high or low as you wish. *(PAUSE)*

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
5. A person breaks into a public recreation center, forces open a cash box and steals $1,000.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
6. A person intentionally hits a victim with a lead pipe. No medical treatment is required.	
7. A person knowingly trespasses in a railroad yard. .	
8. A person robs a victim of $1,000 at gunpoint. No physical harm occurs.	
9. A person steals property worth $50 from outside a building.	
10. A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result, one person dies.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
11. A person picks a victim's pocket of $100.	
12. A person smuggles marijuana into the country for resale.	
13. A person steals a locked car and sells it.	
14. A legislator takes a bribe of $10,000 from a company to vote for a law favoring the company. . .	
15. A man drags a woman into an alley, tears her clothes, but flees before she is physically harmed or sexually attacked.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
16. A person gives the floor plans of a bank to a bank robber.	
17. A person steals property worth $1,000 from outside a building.	
18. A person beats a victim with his fists. The victim is hurt but does not require medical treatment. . . .	
19. An employer refuses to hire a qualified person because of that person's race.	
20. A person stabs a victim with a knife. No medical treatment is required.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
21. A person breaks into a building and steals property worth $10.	
22. A person intentionally injures a victim. The victim is treated by a doctor and hospitalized. . . .	
23. Two persons willingly engage in a homosexual act.	
24. A parent beats his young child with his fists. As a result, the child dies.	
25. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	

Q. To help us understand peoples' scores, I would like to ask an additional question. *(PAUSE)* BEFORE I gave you the last item to score, did you have an upper limit or a highest number in mind that you wouldn't go over?
1 ☐ No – End Interview
2 ☐ Yes – What was it?_____ *(Explain on reverse side any special circumstances, then end interview.)*

Interview form Version 03

FORM NCS-203
(4-14-77)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
U.S. DEPARTMENT OF JUSTICE

NATIONAL SURVEY OF CRIME SEVERITY
VERSION 03
NATIONAL CRIME SURVEY SUPPLEMENT

NOTICE – Your report to the Census Bureau is confidential by law (U.S. Code 42, section 3771). All identifiable information will be used only by persons engaged in and for the purposes of the survey, and may not be disclosed or released to others for any purpose.

A. Sample (cc 4)	B. Control number (cc 5) PSU | Segment | CK | Serial	C. H.H. No. (cc 2)	D. Version No.
JO ___			03

E. Respondent
Line No. | Name

F. Interviewer identification
Code | Name

G. Date completed

H. Type of interview
1 [ ] Personal
2 [ ] Telephone
3 [ ] Not applicable
9 [ ] OFFICE USE ONLY

I. Was anyone else present during interview?
1 [ ] Yes – All
2 [ ] Yes – Part
3 [ ] No
4 [ ] Not applicable
9 [ ] OFFICE USE ONLY

J. Reason for noninterview
1 [ ] Type Z noninterview on NCS
2 [ ] Proxy interview on NCS
3 [ ] Refused NSCS (supplement only)
4 [ ] Language difficulty
5 [ ] Could not understand instructions –*Explain on reverse side*
6 [ ] Other – *Specify*

OFFICE USE ONLY	K.	L.	M.	N.	O.	P.

INTERVIEWER INSTRUCTION ▶ *Interview all household members 18 years and over (proxy interview not acceptable)*

INTRODUCTION – I would like to ask your opinion about how serious YOU think certain crimes are.

The first situation is, "A person steals a bicycle parked on the street." This has been given a score of 10 to show its seriousness. *(PAUSE)* Use this first situation to judge all the others. For example, if you think a situation is 20 TIMES MORE serious than the bicycle theft, the number you tell me should be around 200 *(PAUSE)* or if you think it is HALF AS SERIOUS, the number you tell me should be around 5 and so on. *(PAUSE)* There is no upper limit; use ANY number so long as it shows how serious YOU think the situation is. *(PAUSE)* If YOU think something should not be a crime, give it a zero. *(PAUSE)*

Consider the following situation: "A person robs a victim. The victim is injured but not hospitalized." What number would you give to this situation to show how serious YOU think it is compared to the bicycle theft with a score of 10? *(Obtain answer)* . . . . . .

"A person under 16 years old plays hooky from school." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . . .

"A person stabs a victim to death." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . .

1. A person steals a bicycle parked on the street	10
2. A person robs a victim. The victim is injured but not hospitalized	
3. A person under 16 years old plays hooky from school	
4. A person stabs a victim to death	

Let's go over these first few answers to be sure I have recorded them correctly. You feel that a robbery in which the victim is injured is (more/less/as) serious (than/as) the bicycle theft, *(PAUSE)* and that playing hooky is (more/less/as) serious (than/as) the bicycle theft; is that correct? *(PAUSE)*

INTERVIEWER INSTRUCTION: *Stop and resolve any misunderstandings about the instructions. Make any changes to the practice scores as needed.*

Score the remaining situations in the same way by comparing each one to the bicycle theft. There are no right or wrong answers. Remember, you may use any numbers, as high or low as you wish. *(PAUSE)*

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .

5. A person willingly hides out a bank robber. . . . . ___

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .

6. A person, using force, robs a victim of $1,000. No physical harm occurs. . . . . ___
7. A person cheats on his federal income tax return and avoids paying $10,000 in taxes. . . . . ___
8. A store owner knowingly puts large eggs into containers marked "extra-large." . . . . . ___
9. A person intentionally injures a victim. The victim is treated by a doctor but is not hospitalized. . . . . ___
10. A public official takes $1,000 of public money for his own use. . . . . ___

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .

11. A person performs an illegal abortion. . . . . ___
12. A person steals property worth $10,000 from outside a building. . . . . ___
13. A man forcibly rapes a woman. Her physical injuries require hospitalization. . . . . ___
14. A police officer knowingly makes a false arrest. . . ___
15. A person plants a bomb in a public building. The bomb explodes and 20 people are injured but no medical treatment is required. . . . . ___

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .

16. A person steals property worth $100 from outside a building. . . . . ___
17. A person sells marijuana to others for resale. . . . . ___
18. A person robs a victim at gunpoint. The victim struggles and is shot to death. . . . . ___
19. A person trespasses in a railroad yard and steals tools worth $1,000. . . . . ___
20. An employer orders his employees to make false entries on documents that the court has requested for a criminal trial. . . . . ___

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .

21. A man runs his hands over the body of a female victim, then runs away. . . . . ___
22. A person steals property worth $1,000 from outside a building. . . . . ___
23. A person, armed with a lead pipe, robs a victim of $10. The victim is injured and requires hospitalization. . . . . ___
24. A teenage boy beats his mother with his fists. The mother requires hospitalization. . . . . ___
25. A person plants a bomb in a public building. The bomb explodes and 20 people are killed. . . . . ___

Q. To help us understand peoples' scores, I would like to ask an additional question. *(PAUSE)* **BEFORE** I gave you the last item to score, did you have an upper limit or a highest number in mind that you wouldn't go over?
1 [ ] No – End interview
2 [ ] Yes – What was it?_____ *(Explain on reverse side any special circumstances, then end interview.)*

Appendix A

Interview form
Version 04

FORM NCS-204
(4-14-77)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
U.S. DEPARTMENT OF JUSTICE

NATIONAL SURVEY OF CRIME SEVERITY
VERSION 04
NATIONAL CRIME SURVEY SUPPLEMENT

NOTICE – Your report to the Census Bureau is confidential by law (U.S. Code 42, section 3771). All identifiable information will be used only by persons engaged in and for the purposes of the survey, and may not be disclosed or released to others for any purpose.

A. Sample (cc 4)	B. Control number (cc 5) PSU	Segment	CK	Serial	C. H.H. No. (cc 2)	D. Version No.
JO ___						04

E. Respondent
Line No. | Name

F. Interviewer identification
Code | Name

G. Date completed

H. Type of interview
1 [ ] Personal
2 [ ] Telephone
3 [ ] Not applicable
9 [ ] OFFICE USE ONLY

I. Was anyone else present during interview?
1 [ ] Yes – All
2 [ ] Yes – Part
3 [ ] No
4 [ ] Not applicable
9 [ ] OFFICE USE ONLY

J. Reason for noninterview
1 [ ] Type Z noninterview on NCS
2 [ ] Proxy interview on NCS
3 [ ] Refused NSCS (supplement only)
4 [ ] Language difficulty
5 [ ] Could not understand instructions –*Explain on reverse side*
6 [ ] Other – *Specify* ___

OFFICE USE ONLY	K.	L.	M.	N.	O.	P.

INTERVIEWER INSTRUCTION ▶ *Interview all household members 18 years and over (proxy interview not acceptable)*

INTRODUCTION – I would like to ask your opinion about how serious YOU think certain crimes are.

The first situation is, "A person steals a bicycle parked on the street." This has been given a score of 10 to show its seriousness. *(PAUSE)* Use this first situation to judge all the others. For example, if you think a situation is 20 TIMES MORE serious than the bicycle theft, the number you tell me should be around 200 *(PAUSE)* or if you think it is HALF AS SERIOUS, the number you tell me should be around 5 and so on. *(PAUSE)* There is no upper limit; use ANY number so long as it shows how serious YOU think the situation is. *(PAUSE)* If YOU think something should not be a crime, give it a zero. *(PAUSE)*

Consider the following situation: "A person robs a victim. The victim is injured but not hospitalized." What number would you give to this situation to show how serious YOU think it is compared to the bicycle theft with a score of 10? *(Obtain answer)* . . . . . .

"A person under 16 years old plays hooky from school." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . .

"A person stabs a victim to death." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . .

1. A person steals a bicycle parked on the street	10
2. A person robs a victim. The victim is injured but not hospitalized	
3. A person under 16 years old plays hooky from school	
4. A person stabs a victim to death	

Let's go over these first few answers to be sure I have recorded them correctly. You feel that a robbery in which the victim is injured is (more/less/as) serious (than/as) the bicycle theft, *(PAUSE)* and that playing hooky is (more/less/as) serious (than/as) the bicycle theft; is that correct? *(PAUSE)*

INTERVIEWER INSTRUCTION: *Stop and resolve any misunderstandings about the instructions. Make any changes to the practice scores as needed.*

Score the remaining situations in the same way by comparing each one to the bicycle theft. There are no right or wrong answers. Remember, you may use any numbers, as high or low as you wish. *(PAUSE)*

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
5. A person has some barbiturates, such as sleeping pills, for his own use, without a legal prescription.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
6. A person intentionally sets fire to a building causing $10,000 worth of damage.	
7. Because of a victim's race, a person injures a victim to prevent him from enrolling in a public school. No medical treatment is required.	
8. A person steals property worth $100 from outside a building.	
9. A person, free on bail for committing a serious crime, purposefully fails to appear at court on the day of his trial.	
10. A person breaks into a home and steals $1,000.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
11. A person plants a bomb in a public building. The bomb explodes and one person is killed.	
12. A person is a customer in a place where he knows gambling occurs illegally.	
13. A doctor cheats on claims he makes to a federal health insurance plan for patient services. He gains $10,000.	
14. A person trespasses in the backyard of a private home.	
15. A person illegally gets monthly welfare checks of $200.	

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
16. A person is a customer in a house of prostitution.	
17. A person, using force, robs a victim of $1,000. The victim is hurt and requires hospitalization.	
18. A person loans money at an illegally high interest rate.	
19. A man tries to entice a minor into his car for immoral purposes.	
20. A person kidnaps a victim. A ransom of $1,000 is paid and the victim is returned unharmed.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
21. A person intentionally shoves or pushes a victim. No medical treatment is required.	
22. A person threatens a victim with a weapon unless the victim gives him money. The victim gives him $10 and is not harmed.	
23. A person steals property worth $1,000 from outside a building.	
24. A high school boy beats a middle-aged woman with his fists. She requires hospitalization.	
25. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	

Q. To help us understand peoples' scores, I would like to ask an additional question. *(PAUSE)* BEFORE I gave you the last item to score, did you have an upper limit or a highest number in mind that you wouldn't go over?
1 [ ] No – End Interview
2 [ ] Yes – What was it? ___ *(Explain on reverse side any special circumstances, then end interview.)*

Interview form
Version 05

FORM NCS-205
(4-14-77)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
U.S. DEPARTMENT OF JUSTICE

NATIONAL SURVEY OF CRIME SEVERITY
VERSION 05
NATIONAL CRIME SURVEY SUPPLEMENT

NOTICE – Your report to the Census Bureau is confidential by law (U.S Code 42, section 3771). All identifiable information will be used only by persons engaged in and for the purposes of the survey, and may not be disclosed or released to others for any purpose.

A. Sample (cc 4)	B. Control number (cc 5) PSU	Segment	CK	Serial	C. H.H. No. (cc 2)	D. Version No.
JO—						05

E. Respondent Line No. | Name

F. Interviewer identification Code | Name

G. Date completed

H. Type of interview
1 ☐ Personal
2 ☐ Telephone
3 ☐ Not applicable
9 ☐ OFFICE USE ONLY

I. Was anyone else present during interview?
1 ☐ Yes – All
2 ☐ Yes – Part
3 ☐ No
4 ☐ Not applicable
9 ☐ OFFICE USE ONLY

J. Reason for noninterview
1 ☐ Type Z noninterview on NCS
2 ☐ Proxy interview on NCS
3 ☐ Refused NSCS (supplement only)
4 ☐ Language difficulty
5 ☐ Could not understand instructions –*Explain on reverse side*
6 ☐ Other – *Specify*

OFFICE USE ONLY	K.	L.	M.	N.	O.	P.

INTERVIEWER INSTRUCTION ▶ *Interview all household members 18 years and over (proxy interview not acceptable)*

INTRODUCTION – I would like to ask your opinion about how serious YOU think certain crimes are.

The first situation is, "A person steals a bicycle parked on the street." This has been given a score of 10 to show its seriousness. *(PAUSE)* Use this first situation to judge all the others. For example, if you think a situation is 20 TIMES MORE serious than the bicycle theft, the number you tell me should be around 200 *(PAUSE)* or if you think it is HALF AS SERIOUS, the number you tell me should be around 5 and so on. *(PAUSE)* There is no upper limit; use ANY number so long as it shows how serious YOU think the situation is. *(PAUSE)* If YOU think something should not be a crime, give it a zero. *(PAUSE)*

Consider the following situation: "A person robs a victim. The victim is injured but not hospitalized." What number would you give to this situation to show how serious YOU think it is compared to the bicycle theft with a score of 10? *(Obtain answer)* . . . . . .

"A person under 16 years old plays hooky from school." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . . .

"A person stabs a victim to death." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . .

1. A person steals a bicycle parked on the street	10
2. A person robs a victim. The victim is injured but not hospitalized	
3. A person under 16 years old plays hooky from school	
4. A person stabs a victim to death	

Let's go over these first few answers to be sure I have recorded them correctly. You feel that a robbery in which the victim is injured is (more/less/as) serious (than/as) the bicycle theft, *(PAUSE)* and that playing hooky is (more/less/as) serious (than/as) the bicycle theft; is that correct? *(PAUSE)*

INTERVIEWER INSTRUCTION: *Stop and resolve any misunderstandings about the instructions. Make any changes to the practice scores as needed.*

Score the remaining situations in the same way by comparing each one to the bicycle theft. There are no right or wrong answers. Remember, you may use any numbers, as high or low as you wish. *(PAUSE)*

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
5. A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result, one person becomes ill but does not require medical treatment.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
6. A person kills a victim by recklessly driving an automobile.	
7. A person steals property worth $1,000 from outside a building.	
8. A person attempts to break into a parked car but runs away when a police car approaches.	
9. A person uses heroin.	
10. A person turns in a false fire alarm.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
11. A person, armed with a lead pipe, robs a victim of $1,000. The victim is injured and requires treatment by a doctor but not hospitalization. . . .	
12. An armed person sky-jacks an airplane and demands to be flown to another country.	
13. A person stabs a victim with a knife. The victim requires treatment by a doctor but not hospitalization.	
14. A person steals property worth $10 from outside a building.	
15. A person intentionally injures a victim. As a result the victim dies.	

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
16. A person breaks into a public recreation center, forces open a cash box, and steals $10.	
17. A person disturbs the neighborhood with loud, noisy behavior.	
18. A person beats a victim with his fists. The victim requires hospitalization.	
19. A person breaks into a school and steals $10 worth of supplies.	
20. A man forcibly rapes a woman. No other physical injury occurs.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
21. A person does not have a weapon. He threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.	
22. A person is found firing a rifle for which he knows he has no permit.	
23. A person, using force, robs a victim of $10. No physical harm occurs.	
24. A high school boy beats an elderly woman with his fists. She requires hospitalization.	
25. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	

Q. To help us understand peoples' scores, I would like to ask an additional question. *(PAUSE)* **BEFORE** I gave you the last item to score, did you have an upper limit or a highest number in mind that you wouldn't go over?
1 ☐ No – End interview
2 ☐ Yes – What was it? _____ *(Explain on reverse side any special circumstances, then end interview.)*

Interview form Version 06

FORM NCS-206
(4-14-77)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
U.S. DEPARTMENT OF JUSTICE

NATIONAL SURVEY OF CRIME SEVERITY
VERSION 06
NATIONAL CRIME SURVEY SUPPLEMENT

NOTICE – Your report to the Census Bureau is confidential by law (U.S. Code 42, section 3771). All identifiable information will be used only by persons engaged in and for the purposes of the survey, and may not be disclosed or released to others for any purpose.

A. Sample (cc 4)	B. Control number (cc 5) PSU / Segment / CK / Serial	C. H.H. No. (cc 2)	D. Version No.
JO___			06

E. Respondent Line No. / Name

F. Interviewer identification Code / Name

G. Date completed

J. Reason for noninterview
1 ☐ Type Z noninterview on NCS
2 ☐ Proxy interview on NCS
3 ☐ Refused NSCS (supplement only)
4 ☐ Language difficulty
5 ☐ Could not understand instructions –*Explain on reverse side*
6 ☐ Other – *Specify*

H. Type of interview
1 ☐ Personal
2 ☐ Telephone
3 ☐ Not applicable
9 ☐ OFFICE USE ONLY

I. Was anyone else present during interview?
1 ☐ Yes – All
2 ☐ Yes – Part
3 ☐ No
4 ☐ Not applicable
9 ☐ OFFICE USE ONLY

OFFICE USE ONLY	K.	L.	M.	N.	O.	P.

INTERVIEWER INSTRUCTION ▶ *Interview all household members 18 years and over (proxy interview not acceptable)*

INTRODUCTION – I would like to ask your opinion about how serious YOU think certain crimes are.

The first situation is, "A person steals a bicycle parked on the street." This has been given a score of 10 to show its seriousness. *(PAUSE)* Use this first situation to judge all the others. For example, if you think a situation is 20 TIMES MORE serious than the bicycle theft, the number you tell me should be around 200 *(PAUSE)* or if you think it is HALF AS SERIOUS, the number you tell me should be around 5 and so on. *(PAUSE)* There is no upper limit; use ANY number so long as it shows how serious YOU think the situation is. *(PAUSE)* If YOU think something should not be a crime, give it a zero. *(PAUSE)*

Consider the following situation: "A person robs a victim. The victim is injured but not hospitalized." What number would you give to this situation to show how serious YOU think it is compared to the bicycle theft with a score of 10? *(Obtain answer)* . . . . . .

"A person under 16 years old plays hooky from school." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . . .

"A person stabs a victim to death." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . .

1. A person steals a bicycle parked on the street	10
2. A person robs a victim. The victim is injured but not hospitalized	
3. A person under 16 years old plays hooky from school	
4. A person stabs a victim to death	

Let's go over these first few answers to be sure I have recorded them correctly. You feel that a robbery in which the victim is injured is (more/less/as) serious (than/as) the bicycle theft, *(PAUSE)* and that playing hooky is (more/less/as) serious (than/as) the bicycle theft; is that correct? *(PAUSE)*

INTERVIEWER INSTRUCTION: *Stop and resolve any misunderstandings about the instructions. Make any changes to the practice scores as needed.*

Score the remaining situations in the same way by comparing each one to the bicycle theft. There are no right or wrong answers. Remember, you may use any numbers, as high or low as you wish. *(PAUSE)*

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
5. A person steals property worth $1,000 from outside a building.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
6. A person makes an obscene phone call.	
7. An employee embezzles $10 from his employer.	
8. Knowing that a shipment of cooking oil is bad, a store owner decides to sell it anyway. Only one bottle is sold and the purchaser dies.	
9. An employer illegally threatens to fire employees if they join a labor union.	
10. A person steals property worth $50 from outside a building.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
11. A person attempts to rob a victim but runs away when a police car approaches.	
12. A person forces open a cash register in a department store and steals $10.	
13. A man forcibly rapes a woman. No other physical injury occurs.	
14. A person has some heroin for his own use.	
15. A person threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.	

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
16. A person illegally gets monthly welfare checks.	
17. A person intentionally injures a victim. The victim is treated by a doctor and hospitalized.	
18. A person breaks into a building and steals property worth $10.	
19. A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city.	
20. A person intentionally sets fire to a building causing $500,000 worth of damage.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
21. A man exposes himself in public.	
22. An armed person sky-jacks an airplane and holds the crew and passengers hostage until a ransom is paid.	
23. A person snatches a handbag containing $10 from a victim on the street.	
24. A parent beats his young child with his fists. The child requires hospitalization.	
25. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	

Q. To help us understand peoples' scores, I would like to ask an additional question. *(PAUSE)* BEFORE I gave you the last item to score, did you have an upper limit or a highest number in mind that you wouldn't go over?
1 ☐ No – End Interview
2 ☐ Yes – What was it?_____ *(Explain on reverse side any special circumstances, then end interview.)*

Interview form Version 07

FORM NCS-207
(4-14-77)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
U.S. DEPARTMENT OF JUSTICE

NOTICE – Your report to the Census Bureau is confidential by law (U.S. Code 42 section 3771). All identifiable information will be used only by persons engaged in and for the purposes of the survey and may not be disclosed or released to others for any purpose.

NATIONAL SURVEY OF CRIME SEVERITY
VERSION 07
NATIONAL CRIME SURVEY SUPPLEMENT

A. Sample (cc 4)	B. Control number (cc 5) PSU	Segment	CK	Serial	C. H.H. No. (cc 2)	D. Version No.
JO__						07

E. Respondent Line No. | Name

F. Interviewer identification Code | Name

G. Date completed

H. Type of interview
1 Personal
2 Telephone
3 Not applicable
9 OFFICE USE ONLY

I. Was anyone else present during interview?
1 Yes – All
2 Yes – Part
3 No
4 Not applicable
9 OFFICE USE ONLY

J. Reason for noninterview
1 Type Z noninterview on NCS
2 Proxy interview on NCS
3 Refused NSCS (supplement only)
4 Language difficulty
5 Could not understand instructions –*Explain on reverse side*
6 Other – *Specify*

OFFICE USE ONLY	K.	L.	M.	N.	O.	P.

INTERVIEWER INSTRUCTION ▶ *Interview all household members 18 years and over (proxy interview not acceptable)*

INTRODUCTION – I would like to ask your opinion about how serious YOU think certain crimes are.

The first situation is, "A person steals a bicycle parked on the street." This has been given a score of 10 to show its seriousness. *(PAUSE)* Use this first situation to judge all the others. For example, if you think a situation is 20 TIMES MORE serious than the bicycle theft, the number you tell me should be around 200 *(PAUSE)* or if you think it is HALF AS SERIOUS, the number you tell me should be around 5 and so on. *(PAUSE)* There is no upper limit; use ANY number so long as it shows how serious YOU think the situation is. *(PAUSE)* If YOU think something should not be a crime, give it a zero. *(PAUSE)*

Consider the following situation: "A person robs a victim. The victim is injured but not hospitalized." What number would you give to this situation to show how serious YOU think it is compared to the bicycle theft with a score of 10? *(Obtain answer)*

"A person under 16 years old plays hooky from school." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)*

"A person stabs a victim to death." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)*

1. A person steals a bicycle parked on the street	10
2. A person robs a victim. The victim is injured but not hospitalized	
3. A person under 16 years old plays hooky from school	
4. A person stabs a victim to death	

Let's go over these first few answers to be sure I have recorded them correctly. You feel that a robbery in which the victim is injured is (more/less/as) serious (than/as) the bicycle theft, *(PAUSE)* and that playing hooky is (more/less/as) serious (than/as) the bicycle theft; is that correct? *(PAUSE)*

INTERVIEWER INSTRUCTION: *Stop and resolve any misunderstandings about the instructions. Make any changes to the practice scores as needed.*

Score the remaining situations in the same way by comparing each one to the bicycle theft. There are no right or wrong answers. Remember, you may use any numbers, as high or low as you wish. *(PAUSE)*

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
5. A person breaks into a home and steals $10.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
6. A person illegally sells barbiturates, such as prescription sleeping pills, to others for resale. . .	
7. A city official takes a bribe from a company for his help in getting a city building contract for the company.	
8. A person steals property worth $1,000 from outside a building.	
9. A man forcibly rapes a woman. No other physical injury occurs.	
10. A person cheats on his federal income tax return. .	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
11. A person, under 16 years old, runs away from home.	
12. A person, armed with a lead pipe, robs a victim of $1,000. No physical harm occurs.	
13. A person pays a witness to give false testimony in a criminal trial.	
14. A person steals property worth $10,000 from outside a building.	
15. A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result, 20 people die.	

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
16. A person breaks into a school and steals equipment worth $1,000.	
17. A person runs a narcotics ring.	
18. A person intentionally injures a victim. The victim is treated by a doctor but is not hospitalized.	
19. A doctor cheats on claims he makes to a federal health insurance plan for patient services.	
20. A person, using force, robs a victim of $1,000. The victim is hurt and requires treatment by a doctor but not hospitalization.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
21. A person runs a place where liquor is sold without a license.	
22. A person steals property worth $100 from outside a building.	
23. A person robs a victim of $10 at gunpoint. The victim is wounded and requires medical treatment by a doctor but not hospitalization.	
24. Three high school boys beat a male classmate with their fists. He requires hospitalization.	
25. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	

O. To help us understand peoples' scores, I would like to ask an additional question. *(PAUSE)* **BEFORE** I gave you the last item to score, did you have an upper limit or a highest number in mind that you wouldn't go over?
1 ☐ No – End Interview
2 ☐ Yes – What was it? _____ *(Explain on reverse side any special circumstances, then end interview.)*

Interview form Version 08

FORM NCS-208
(4-14-77)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
U.S. DEPARTMENT OF JUSTICE

NATIONAL SURVEY OF CRIME SEVERITY
VERSION 08
NATIONAL CRIME SURVEY SUPPLEMENT

NOTICE – Your report to the Census Bureau is confidential by law (U.S. Code 42, section 3771). All identifiable information will be used only by persons engaged in and for the purposes of the survey, and may not be disclosed or released to others for any purpose.

A. Sample (cc 4)	B. Control number (cc 5) PSU | Segment | CK | Serial	C. H.H. No. (cc 2)	D. Version No.
JO___			08

E. Respondent
Line No. | Name

F. Interviewer identification
Code | Name

G. Date completed

J. Reason for noninterview
1 ☐ Type Z noninterview on NCS
2 ☐ Proxy interview on NCS
3 ☐ Refused NSCS (supplement only)
4 ☐ Language difficulty
5 ☐ Could not understand instructions –*Explain on reverse side*
6 ☐ Other – *Specify*

H. Type of interview
1 ☐ Personal
2 ☐ Telephone
3 ☐ Not applicable
9 ☐ OFFICE USE ONLY

I. Was anyone else present during interview?
1 ☐ Yes – All
2 ☐ Yes – Part
3 ☐ No
4 ☐ Not applicable
9 ☐ OFFICE USE ONLY

OFFICE USE ONLY	K.	L.	M.	N.	O.	P.

INTERVIEWER INSTRUCTION ▶ *Interview all household members 18 years and over (proxy interview not acceptable)*

INTRODUCTION – I would like to ask your opinion about how serious YOU think certain crimes are.

The first situation is, "A person steals a bicycle parked on the street." This has been given a score of 10 to show its seriousness. *(PAUSE)* Use this first situation to judge all the others. For example, if you think a situation is 20 TIMES MORE serious than the bicycle theft, the number you tell me should be around 200 *(PAUSE)* or if you think it is HALF AS SERIOUS, the number you tell me should be around 5 and so on. *(PAUSE)* There is no upper limit; use ANY number so long as it shows how serious YOU think the situation is. *(PAUSE)* If YOU think something should not be a crime, give it a zero. *(PAUSE)*

Consider the following situation: "A person robs a victim. The victim is injured but not hospitalized." What number would you give to this situation to show how serious YOU think it is compared to the bicycle theft with a score of 10? *(Obtain answer)* . . . . . .

"A person under 16 years old plays hooky from school." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . . .

"A person stabs a victim to death." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . .

1. A person steals a bicycle parked on the street	10
2. A person robs a victim. The victim is injured but not hospitalized	
3. A person under 16 years old plays hooky from school . . .	
4. A person stabs a victim to death	

Let's go over these first few answers to be sure I have recorded them correctly. You feel that a robbery in which the victim is injured is (more/less/as) serious (than/as) the bicycle theft, *(PAUSE)* and that playing hooky is (more/less/as) serious (than/as) the bicycle theft; is that correct? *(PAUSE)*

INTERVIEWER INSTRUCTION: *Stop and resolve any misunderstandings about the instructions. Make any changes to the practice scores as needed.*

Score the remaining situations in the same way by comparing each one to the bicycle theft. There are no right or wrong answers. Remember, you may use any numbers, as high or low as you wish. *(PAUSE)*

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
5. A person breaks into a parking meter and steals $10 worth of nickels.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
6. A person steals property worth $1,000 from outside a building.	
7. A person knowingly passes a bad check.	
8. A person, under 16, is reported to police by his parents as an offender because they are unable to control him.	
9. A person, armed with a lead pipe, robs a victim of $10. The victim is injured and requires treatment by a doctor but not hospitalization.	
10. A person intentionally shoves or pushes a victim. No medical treatment is required.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
11. An employee embezzles $1,000 from his employer. .	
12. A government official intentionally hinders the investigation of a criminal offense.	
13. A person breaks into a department store and steals merchandise worth $10.	
14. A person attempts to kill a victim with a gun. The gun misfires and the victim escapes unharmed. . . .	
15. A woman engages in prostitution.	

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
16. A group continues to hang around a corner after being told to break up by a police officer.	
17. A person sells heroin to others for resale.	
18. A person breaks into a bank at night and steals $100,000.	
19. A person threatens a victim with a weapon unless the victim gives him money. The victim gives him $10 and is not harmed.	
20. Knowing that a shipment of cooking oil is bad, a store owner decides to sell it anyway. Only one bottle is sold and the purchaser is treated by a doctor but not hospitalized.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
21. A person steals property worth $10,000 from outside a building.	
22. A person, under 16 years old, breaks a curfew law by being out on the street after the hour permitted by the law.	
23. A person steals an unlocked car and later abandons it undamaged.	
24. A man stabs his wife. As a result she dies.	
25. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	

Q. To help us understand peoples' scores, I would like to ask an additional question. *(PAUSE)* BEFORE I gave you the last item to score, did you have an upper limit or a highest number in mind that you wouldn't go over?
1 ☐ No – End Interview
2 ☐ Yes – What was it?_____ *(Explain on reverse side any special circumstances, then end interview.)*

Interview form Version 09

FORM NCS-209
(4-14-77)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
U.S. DEPARTMENT OF JUSTICE

NATIONAL SURVEY OF CRIME SEVERITY
VERSION 09
NATIONAL CRIME SURVEY SUPPLEMENT

NOTICE – Your report to the Census Bureau is confidential by law (U.S. Code 42, section 3771). All identifiable information will be used only by persons engaged in and for the purposes of the survey, and may not be disclosed or released to others for any purpose.

A. Sample (cc 4)	B. Control number (cc 5) PSU	Segment	CK	Serial	C. H.H. No. (cc 2)	D. Version No.
JO ___						09

E. Respondent Line No. | Name

F. Interviewer identification Code | Name

G. Date completed

H. Type of interview
1 ☐ Personal
2 ☐ Telephone
3 ☐ Not applicable
9 ☐ OFFICE USE ONLY

I. Was anyone else present during interview?
1 ☐ Yes – All
2 ☐ Yes – Part
3 ☐ No
4 ☐ Not applicable
9 ☐ OFFICE USE ONLY

J. Reason for noninterview
1 ☐ Type Z noninterview on NCS
2 ☐ Proxy interview on NCS
3 ☐ Refused NSCS (supplement only)
4 ☐ Language difficulty
5 ☐ Could not understand instructions –*Explain on reverse side*
6 ☐ Other – *Specify*

OFFICE USE ONLY	K.	L.	M.	N.	O.	P.

INTERVIEWER INSTRUCTION ▶ *Interview all household members 18 years and over (proxy interview not acceptable)*

INTRODUCTION – I would like to ask your opinion about how serious YOU think certain crimes are.

The first situation is, "A person steals a bicycle parked on the street." This has been given a score of 10 to show its seriousness. *(PAUSE)* Use this first situation to judge all the others. For example, if you think a situation is 20 TIMES MORE serious than the bicycle theft, the number you tell me should be around 200 *(PAUSE)* or if you think it is HALF AS SERIOUS, the number you tell me should be around 5 and so on. *(PAUSE)* There is no upper limit; use ANY number so long as it shows how serious YOU think the situation is. *(PAUSE)* If YOU think something should not be a crime, give it a zero. *(PAUSE)*

Consider the following situation: "A person robs a victim. The victim is injured but not hospitalized." What number would you give to this situation to show how serious YOU think it is compared to the bicycle theft with a score of 10? *(Obtain answer)* . . . . . .

"A person under 16 years old plays hooky from school." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . . .

"A person stabs a victim to death." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . .

1. A person steals a bicycle parked on the street	10
2. A person robs a victim. The victim is injured but not hospitalized	
3. A person under 16 years old plays hooky from school	
4. A person stabs a victim to death	

Let's go over these first few answers to be sure I have recorded them correctly. You feel that a robbery in which the victim is injured is (more/less/as) serious (than/as) the bicycle theft, *(PAUSE)* and that playing hooky is (more/less/as) serious (than/as) the bicycle theft; is that correct? *(PAUSE)*

INTERVIEWER INSTRUCTION: *Stop and resolve any misunderstandings about the instructions. Make any changes to the practice scores as needed.*

Score the remaining situations in the same way by comparing each one to the bicycle theft. There are no right or wrong answers. Remember, you may use any numbers, as high or low as you wish. *(PAUSE)*

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
5. A person breaks into a department store, forces open a cash register and steals $10.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
6. A person takes barbiturates, such as sleeping pills, without a legal prescription.	
7. An offender knowingly carries an illegal knife. . . .	
8. A person steals property worth $1,000 from outside a building.	
9. A theater owner knowingly shows pornographic movies to a minor.	
10. A person steals an unlocked car, and sells it.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
11. A person trespasses in a city-owned storage lot and steals equipment worth $10.	
12. A person intentionally injures a victim. As a result, the victim dies.	
13. A person pays another person to commit a serious crime.	
14. A person does not have a weapon. He threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.	
15. A person steals $1,000 worth of merchandise from an unlocked car.	

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
16. A person attempts to break into a home but runs away when a police car approaches.	
17. A person knowingly buys stolen property from the person who stole it.	
18. A person runs a place where he permits gambling to occur illegally.	
19. A person intentionally shoots a victim with a gun. The victim requires treatment by a doctor but not hospitalization.	
20. A person steals property worth $10 from outside a building.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
21. A person is a customer in a place where he knows liquor is sold without a license.	
22. A person breaks into a department store and steals merchandise worth $1,000.	
23. A person robs a victim of $10 at gunpoint. The victim is wounded and requires hospitalization. . . .	
24. A man beats a stranger with his fists. He requires hospitalization.	
25. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	

Q. To help us understand peoples' scores, I would like to ask an additional question. *(PAUSE)* **BEFORE I gave you the last item to score, did you have an upper limit or a highest number in mind that you wouldn't go over?**
1 ☐ No – End interview
2 ☐ Yes – What was it? _____ *(Explain on reverse side any special circumstances, then end interview.)*

Interview form Version 10

FORM NCS-210
(4-14-77)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
U.S. DEPARTMENT OF JUSTICE

NATIONAL SURVEY OF CRIME SEVERITY
VERSION 10
NATIONAL CRIME SURVEY SUPPLEMENT

NOTICE – Your report to the Census Bureau is confidential by law (U.S. Code 42, section 3771). All identifiable information will be used only by persons engaged in and for the purposes of the survey, and may not be disclosed or released to others for any purpose.

A. Sample (cc 4)	B. Control number (cc 5) PSU | Segment | CK | Serial	C. H.H. No. (cc 2)	D. Version No.
JO___			10

E. Respondent Line No. | Name

F. Interviewer identification Code | Name

G. Date completed

J. Reason for noninterview
1 ☐ Type Z noninterview on NCS
2 ☐ Proxy interview on NCS
3 ☐ Refused NSCS (supplement only)
4 ☐ Language difficulty
5 ☐ Could not understand instructions –*Explain on reverse side*
6 ☐ Other – *Specify*

H. Type of interview
1 ☐ Personal
2 ☐ Telephone
3 ☐ Not applicable
9 ☐ OFFICE USE ONLY

I. Was anyone else present during interview?
1 ☐ Yes – All
2 ☐ Yes – Part
3 ☐ No
4 ☐ Not applicable
9 ☐ OFFICE USE ONLY

OFFICE USE ONLY	K.	L.	M.	N.	O.	P.

INTERVIEWER INSTRUCTION ▶ *Interview all household members 18 years and over (proxy interview not acceptable)*

INTRODUCTION – I would like to ask your opinion about how serious YOU think certain crimes are.

The first situation is, "A person steals a bicycle parked on the street." This has been given a score of 10 to show its seriousness. *(PAUSE)* Use this first situation to judge all the others. For example, if you think a situation is 20 TIMES MORE serious than the bicycle theft, the number you tell me should be around 200 *(PAUSE)* or if you think it is HALF AS SERIOUS, the number you tell me should be around 5 and so on. *(PAUSE)* There is no upper limit; use ANY number so long as it shows how serious YOU think the situation is. *(PAUSE)* If YOU think something should not be a crime, give it a zero. *(PAUSE)*

Consider the following situation: "A person robs a victim. The victim is injured but not hospitalized." What number would you give to this situation to show how serious YOU think it is compared to the bicycle theft with a score of 10? *(Obtain answer)* . . . . . .

"A person under 16 years old plays hooky from school." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . . .

"A person stabs a victim to death." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . .

1. A person steals a bicycle parked on the street	10
2. A person robs a victim. The victim is injured but not hospitalized	
3. A person under 16 years old plays hooky from school	
4. A person stabs a victim to death	

Let's go over these first few answers to be sure I have recorded them correctly. You feel that a robbery in which the victim is injured is (more/less/as) serious (than/as) the bicycle theft, *(PAUSE)* and that playing hooky is (more/less/as) serious (than/as) the bicycle theft; is that correct? *(PAUSE)*

INTERVIEWER INSTRUCTION: *Stop and resolve any misunderstandings about the instructions. Make any changes to the practice scores as needed.*

Score the remaining situations in the same way by comparing each one to the bicycle theft. There are no right or wrong answers. Remember, you may use any numbers, as high or low as you wish. *(PAUSE)*

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .		**COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .**	
5. A person stabs a victim with a knife. The victim requires hospitalization.		16. A person has some marijuana for his own use. . . .	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .		17. A person plants a bomb in a public building. The bomb explodes but no one is injured.	
6. Knowing that a shipment of cooking oil is bad, a store owner decides to sell it anyway.		18. A person steals property worth $50 from outside a building.	
7. A person steals $1,000 worth of merchandise from the counter of a department store.		19. A legislator takes a bribe from a company to vote for a law favoring the company.	
8. A person under 16 years old illegally has a bottle of wine.		20. A person gets customers for a prostitute.	
9. A county court judge takes a bribe to give a light sentence in a criminal case.		**COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .**	
10. A person is a vagrant. That is, he has no home and no visible means of support.		21. A person, armed with a lead pipe, robs a victim of $10. No physical harm occurs.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .		22. A real estate agent refuses to sell a house to a person because of that person's race.	
11. A person steals property worth $1,000 from outside a building.		23. A person picks a victim's pocket of $10.	
12. A man forcibly rapes a woman. As a result of physical injuries she dies.		24. A teenage boy beats his father with his fists. The father requires hospitalization.	
13. A person breaks into a building and steals property worth $10.		25. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	
14. A person intentionally injures a victim. The victim is treated by a doctor and hospitalized. . . .			
15. A person robs a victim of $1,000 at gunpoint. The victim is wounded and requires hospitalization. . . .			

Q. To help us understand peoples' scores, I would like to ask an additional question. *(PAUSE)* BEFORE I gave you the last item to score, did you have an upper limit or a highest number in mind that you wouldn't go over?
1 ☐ No – End Interview
2 ☐ Yes – What was it? _____ *(Explain on reverse side any special circumstances, then end interview.)*

Interview form Version 11

FORM NCS-21
(4-14-77)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
U.S. DEPARTMENT OF JUSTICE

NATIONAL SURVEY OF CRIME SEVERITY
VERSION 11
NATIONAL CRIME SURVEY SUPPLEMENT

NOTICE – Your report to the Census Bureau is confidential by law (U.S. Code 42, section 3771). All identifiable information will be used only by persons engaged in and for the purposes of the survey, and may not be disclosed or released to others for any purpose.

A. Sample (cc 4)	B. Control number (cc 5) PSU	Segment	CK	Serial	C. H.H. No. (cc 2)	D. Version No.
JO___						11

E. Respondent Line No. | Name

F. Interviewer identification Code | Name

G. Date completed

H. Type of interview
1 ☐ Personal
2 ☐ Telephone
3 ☐ Not applicable
9 ☐ OFFICE USE ONLY

I. Was anyone else present during interview?
1 ☐ Yes – All
2 ☐ Yes – Part
3 ☐ No
4 ☐ Not applicable
9 ☐ OFFICE USE ONLY

J. Reason for noninterview
1 ☐ Type Z noninterview on NCS
2 ☐ Proxy interview on NCS
3 ☐ Refused NSCS (supplement only)
4 ☐ Language difficulty
5 ☐ Could not understand instructions –*Explain on reverse side*
6 ☐ Other – *Specify*

OFFICE USE ONLY	K.	L.	M.	N.	O.	P.

INTERVIEWER INSTRUCTION ▶ *Interview all household members 18 years and over (proxy interview not acceptable)*

INTRODUCTION – I would like to ask your opinion about how serious YOU think certain crimes are.

The first situation is, "A person steals a bicycle parked on the street." This has been given a score of 10 to show its seriousness. *(PAUSE)* Use this first situation to judge all the others. For example, if you think a situation is 20 TIMES MORE serious than the bicycle theft, the number you tell me should be around 200 *(PAUSE)* or if you think it is HALF AS SERIOUS, the number you tell me should be around 5 and so on. *(PAUSE)* There is no upper limit; use ANY number so long as it shows how serious YOU think the situation is. *(PAUSE)* If YOU think something should not be a crime, give it a zero. *(PAUSE)*

Consider the following situation: "A person robs a victim. The victim is injured but not hospitalized." What number would you give to this situation to show how serious YOU think it is compared to the bicycle theft with a score of 10? *(Obtain answer)* . . . . . .

"A person under 16 years old plays hooky from school." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . . .

"A person stabs a victim to death." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . .

1. A person steals a bicycle parked on the street	10
2. A person robs a victim. The victim is injured but not hospitalized	
3. A person under 16 years old plays hooky from school	
4. A person stabs a victim to death	

Let's go over these first few answers to be sure I have recorded them correctly. You feel that a robbery in which the victim is injured is (more/less/as) serious (than/as) the bicycle theft, *(PAUSE)* and that playing hooky is (more/less/as) serious (than/as) the bicycle theft; is that correct? *(PAUSE)*

INTERVIEWER INSTRUCTION: *Stop and resolve any misunderstandings about the instructions. Make any changes to the practice scores as needed.*

Score the remaining situations in the same way by comparing each one to the bicycle theft. There are no right or wrong answers. Remember, you may use any numbers, as high or low as you wish. *(PAUSE)*

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
5. A person intentionally hits a victim with a lead pipe. The victim requires treatment by a doctor but not hospitalization.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
6. A person steals property worth $100 from outside a building.	
7. A person runs a prostitution racket.	
8. A person, armed with a lead pipe, robs a victim of $1,000. The victim is injured and requires hospitalization.	
9. A person operates a store where he knowingly sells stolen property.	
10. A person intentionally shoots a victim with a gun. The victim requires hospitalization.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
11. A person under 16 years old is drunk in public. . . .	
12. A person breaks into a department store, forces open a safe, and steals $1,000.	
13. A labor union official illegally threatens to organize a strike if an employer hires non-union workers. . .	
14. A person steals $10 worth of merchandise from the counter of a department store.	
15. A person intentionally injures a victim. The victim is treated by a doctor but is not hospitalized.	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
16. A police officer takes a bribe not to interfere with an illegal gambling operation.	
17. A person stabs a victim to death.	
18. A person steals property worth $10,000 from outside a building.	
19. A person plants a bomb in a public building. The bomb explodes and one person is injured, but no medical treatment is required.	
20. A person threatens to seriously injure a victim. . . .	
COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .	
21. A male, over 16 years of age, has sexual relations with a willing female under 16.	
22. A person steals property worth $1,000 from outside a building.	
23. A person robs a victim of $10 at gunpoint. No physical harm occurs.	
24. Ten high school boys beat a male classmate with their fists. He requires hospitalization.	
25. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	

Q. To help us understand peoples' scores, I would like to ask an additional question. *(PAUSE)* BEFORE I gave you the last item to score, did you have an upper limit or a highest number in mind that you wouldn't go over?
1 ☐ No – End Interview
2 ☐ Yes – What was it?_____ *(Explain on reverse side any special circumstances, then end interview.)*

Interview form Version 12

FORM NCS-212
(4-14-77)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
U.S. DEPARTMENT OF JUSTICE

NOTICE – Your report to the Census Bureau is confidential by law (U.S. Code 42, section 3771). All identifiable information will be used only by persons engaged in and for the purposes of the survey, and may not be disclosed or released to others for any purpose.

NATIONAL SURVEY OF CRIME SEVERITY
VERSION 12
NATIONAL CRIME SURVEY SUPPLEMENT

A. Sample (cc 4)	B. Control number (cc 5) PSU	Segment	CK	Serial	C. H.H. No. (cc 2)	D. Version No.
JO___						12

E. Respondent Line No. | Name

F. Interviewer identification Code | Name

G. Date completed

J. Reason for noninterview
1 [ ] Type Z noninterview at NCS
2 [ ] Proxy interview on NCS
3 [ ] Refused NSCS (supplement only)
4 [ ] Language difficulty
5 [ ] Could not understand instructions –*Explain on reverse side*
6 [ ] Other – *Specify*

H. Type of interview
1 [ ] Personal
2 [ ] Telephone
3 [ ] Not applicable
9 [ ] OFFICE USE ONLY

I. Was anyone else present during interview?
1 [ ] Yes – All
2 [ ] Yes – Part
3 [ ] No
4 [ ] Not applicable
9 [ ] OFFICE USE ONLY

OFFICE USE ONLY	K.	L.	M.	N.	O.	P.

INTERVIEWER INSTRUCTION ▶ *Interview all household members 18 years and over (proxy interview not acceptable)*

INTRODUCTION – I would like to ask your opinion about how serious YOU think certain crimes are.

The first situation is, "A person steals a bicycle parked on the street." This has been given a score of 10 to show its seriousness. *(PAUSE)* Use this first situation to judge all the others. For example, if you think a situation is 20 TIMES MORE serious than the bicycle theft, the number you tell me should be around 200 *(PAUSE)* or if you think it is HALF AS SERIOUS, the number you tell me should be around 5 and so on. *(PAUSE)* There is no upper limit; use ANY number so long as it shows how serious YOU think the situation is. *(PAUSE)* If YOU think something should not be a crime, give it a zero. *(PAUSE)*

Consider the following situation: "A person robs a victim. The victim is injured but not hospitalized." What number would you give to this situation to show how serious YOU think it is compared to the bicycle theft with a score of 10? *(Obtain answer)* . . . . . .

"A person under 16 years old plays hooky from school." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . . . .

"A person stabs a victim to death." Compared to the bicycle theft with a score of 10, how serious do YOU think this is? *(Obtain answer)* . . . .

1. A person steals a bicycle parked on the street	10
2. A person robs a victim. The victim is injured but not hospitalized	
3. A person under 16 years old plays hooky from school	
4. A person stabs a victim to death	

Let's go over these first few answers to be sure I have recorded them correctly. You feel that a robbery in which the victim is injured is (more/less/as) serious (than/as) the bicycle theft, *(PAUSE)* and that playing hooky is (more/less/as) serious (than/as) the bicycle theft; is that correct? *(PAUSE)*

INTERVIEWER INSTRUCTION: *Stop and resolve any misunderstandings about the instructions. Make any changes to the practice scores as needed.*

Score the remaining situations in the same way by comparing each one to the bicycle theft. There are no right or wrong answers. Remember, you may use any numbers, as high or low as you wish. *(PAUSE)*

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .

5. A person, using force, robs a victim of $10. The victim is hurt and requires treatment by a doctor but not hospitalization. . . . . ___
6. A person intentionally hits a victim with a lead pipe. The victim requires hospitalization. . . . . ___
7. A person is drunk in public. . . . . ___
8. A man forcibly rapes a woman. Her physical injuries require treatment by a doctor but not hospitalization. . . . . ___
9. A person trespasses in a railroad yard and steals a lantern worth $10. . . . . ___
10. A person smuggles heroin into the country. . . . . ___

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .

11. A person intentionally shoots a victim with a gun. The victim is wounded slightly but does not require medical treatment. . . . . ___
12. A person steals property worth $1,000 from outside a building. . . . . ___
13. A person carries a gun illegally. . . . . ___
14. A person beats a victim with his fists. The victim requires treatment by a doctor but not hospitalization. . . . . ___
15. A person signs someone else's name to a check and cashes it. . . . . ___

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .

16. A person knowingly makes false entries on a document that the court has requested for a criminal trial. ___
17. A person steals property worth $100 from outside a building . . . . . ___
18. A person takes bets on the numbers. . . . . ___
19. A person threatens a victim with a weapon unless the victim gives him money. The victim gives him $10 and is not harmed. . . . . ___
20. A person, armed with a gun, robs a bank of $100,000 during business hours. No one is physically hurt. . ___

COMPARED TO THE BICYCLE THEFT SCORED AT 10, HOW SERIOUS IS . . .

21. A person intentionally shoves or pushes a victim. No medical treatment is required. . . . . ___
22. A company pays a bribe to a legislator to vote for a law favoring the company. . . . . ___
23. A person threatens to harm a victim unless the victim gives him money. The victim gives him $1,000 and is not harmed. . . . . ___
24. A woman stabs her husband. As a result, he dies. . . . . ___
25. A person plants a bomb in a public building. The bomb explodes and 20 people are killed. . . . . ___

Q. To help us understand peoples' scores, I would like to ask an additional question. *(PAUSE)* BEFORE I gave you the last item to score, did you have an upper limit or a highest number in mind that you wouldn't go over?
1 [ ] No – End interview
2 [ ] Yes – What was it?_____ *(Explain on reverse side any special circumstances, then end interview.)*

•U. S. Government Printing Office: 1977 – 758-771

NSCS: Item, version, and aggregation effects in the national pretest*

Appendix B

(1) There are no order effects in terms of respondent fatigue or in terms of respondent acclimation to the task. This is true not only in the means of the responses but also in the standardized variances, implying that within a version variances are homoscedastic (see tables B-1, B-2, and B-3).

Table B-1 provides means for introduction 1 (magnitude scale), introduction 2 (category scale), and the combined responses for each version and question. Table B-2 provides the standard deviations. Table B-3 shows the regressions of each mean or standard deviation for the combined responses on the position of the question in the questionnaire. The column headed r^2 indicates the proportion of variance in the means explained by a trend in response. For example, for version 1, 17 percent of the variation in the item means is explained by a linear trend in the data. The equation being fit is

$$\left\{\begin{array}{l}\text{(means)}\\ \quad\text{or}\\ \text{(standard deviation)}\end{array}\right\} = a + b \cdot \text{(position: 1–24)}.$$

The column headed a is the intercept of the equation, and b is the slope. As can be seen from table B-3, little or none of the variation in the means (standard deviation) is explained by a linear trend in response. The slopes in each of these regressions are very close to zero, also indicating lack of trend. Further, as all the slopes are positive (albeit small), there is no indication of respondent fatigue.

(2) There do not seem to be any special problems with particular items.

(3) There are hardly any differences between introduction 1 and introduction 2. The major finding for the mean scores across items on a version is that the average response on introduction 1 is lower than that for introduction 2. This means that for introduction 1 there is a tendency for respondents to give relatively higher numbers for the very serious crimes. So using introduction 1 improves the differentiation between very serious crimes and crimes that are less serious, whereas introduction 2 provides more differentiation between the less significant crimes and clustering of the more serious crimes.

Tables B-1 and B-2 show the means and standard deviations (computed using simple random sampling formulas) for each question within each version. Core-item questions, asked on three different versions, are displayed separately by version. For example, core item 1 was asked on version 1 as question 7, version 5 as question 14, and version 9 as question 19.

The core items are not aggregated in any one place. However, to test whether there was a great deal of variance in response due to differences between versions, the variances of the first five core items (dollar questions) were aggregated in table B-4 to obtain a total sum of squares for each question aggregated, and then the sums of squares for each rendition of the question (3 different renderings, as described above for core-item 1) were summed to provide a within-sum of squares. Using these two numbers to obtain a between-version sum of squares, it appears that only 1–2 percent of the variance for any core item is due to between-version variation. This means that there should be no special problem with aggregating items, because seemingly large differences in the means between versions for a core item are miniscule compared to the variation within a version.

*Prepared by Charles D. Cowan, Survey Analysis and Evaluation Branch, U.S. Bureau of the Census.

Appendix B

Table B-1

Standardized means for NSCS pretest, by version and position within version

Version	Introduction	Question number 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
1	c*	.030	.241	.040	.724	.537	.370	.118	.486	.282	.464	.065	.698	.347	.347	.252	.175	.354	.598	.431	.566	.794	.485	.479	—	.386
	1**	.035	.208	.039	.694	.482	.325	.104	.441	.244	.422	.063	.666	.304	.299	.223	.167	.309	.563	.392	.534	.789	.456	.440	—	.357
	2***	.012	.371	.047	.837	.743	.540	.176	.650	.435	.621	.071	.813	.513	.527	.359	.210	.531	.729	.581	.682	.807	.590	.621	—	.499
2	c	.024	.274	.046	.791	.320	.297	.063	.412	.171	.607	.233	.429	.169	.532	.546	.440	.435	.376	.171	.416	.342	.493	.217	.875	.368
	1	.031	.214	.039	.726	.261	.233	.055	.342	.137	.530	.190	.367	.139	.438	.457	.350	.354	.325	.131	.357	.282	.419	.199	.838	.302
	2	.012	.381	.059	.902	.426	.411	.077	.538	.232	.737	.313	.543	.225	.707	.709	.604	.586	.469	.243	.525	.455	.634	.254	.941	.456
3	c	.027	.288	.054	.867	.350	.396	.377	.147	.317	.477	.506	.469	.426	.220	.358	.232	.474	.509	.890	.401	.077	.773	.554	.618	.408
	1	.046	.238	.062	.800	.321	.374	.340	.144	.289	.431	.448	.409	.366	.204	.314	.214	.414	.426	.843	.372	.074	.738	.496	.577	.373
	2	.013	.326	.047	.919	.372	.414	.406	.149	.339	.512	.552	.517	.472	.233	.392	.245	.522	.574	.927	.423	.080	.800	.598	.650	.436
4	c	.030	.296	.042	.854	.279	.545	.405	.307	.456	.879	.206	.542	.253	.426	.252	.646	.469	.487	.706	.207	.449	.192	.381	.670	.416
	1	.032	.237	.042	.755	.230	.461	.315	.234	.378	.847	.165	.443	.232	.344	.214	.519	.407	.443	.653	.185	.370	.156	.287	.572	.357
	2	.028	.344	.043	.936	.319	.615	.479	.367	.520	.906	.239	.624	.271	.492	.282	.749	.518	.522	.749	.226	.515	.221	.458	.751	.466
5	c	.030	.293	.038	.861	.413	.642	.417	.243	.420	.293	.578	.727	.627	.164	.912	.285	.115	.432	.233	.288	.193	.317	.336	.910	.405
	1	.051	.222	.038	.782	.332	.541	.339	.221	.365	.234	.487	.651	.528	.166	.864	.247	.112	.383	.203	.257	.188	.262	.275	.851	.357
	2	.011	.358	.037	.930	.485	.732	.485	.263	.468	.347	.659	.793	.715	.163	.953	.318	.118	.474	.259	.315	.196	.365	.388	.961	.450
6	c	.025	.263	.046	.873	.340	.190	.159	.641	.292	.204	.236	.213	.697	.465	.318	.387	.466	.231	.538	.661	.332	.795	.311	.709	.391
	1	.032	.212	.046	.805	.295	.148	.131	.541	.255	.182	.184	.181	.606	.388	.268	.314	.398	.200	.454	.607	.294	.741	.264	.641	.342
	2	.018	.313	.046	.941	.387	.237	.189	.743	.328	.228	.288	.246	.791	.546	.369	.464	.535	.263	.619	.718	.374	.850	.363	.778	.443
7	c	.032	.243	.040	.749	.196	.457	.392	.440	.918	.295	.131	.391	.477	.484	.352	.730	.413	.271	.473	.524	.317	.230	.549	.421	.397
	1	.049	.201	.039	.691	.165	.379	.320	.367	.932	.264	.130	.316	.401	.409	.303	.715	.361	.233	.427	.470	.266	.202	.480	.367	.353
	2	.010	.296	.041	.819	.232	.553	.481	.531	.901	.334	.132	.482	.570	.577	.412	.748	.477	.318	.528	.590	.378	.264	.631	.486	.450
8	c	.022	.235	.031	.864	.307	.231	.161	.366	.121	.361	.501	.200	.634	.268	.124	.707	.629	.439	.795	.476	.102	.283	.657	—	.369
	1	.028	.184	.017	.811	.286	.205	.145	.314	.104	.303	.449	.174	.596	.233	.089	.645	.572	.365	.718	.402	.073	.236	.615	—	.328
	2	.016	.288	.045	.918	.328	.257	.177	.418	.138	.420	.555	.226	.673	.305	.159	.771	.687	.515	.874	.552	.130	.331	.701	—	.412
9	c	.029	.277	.045	.890	.229	.274	.206	.349	.455	.206	.884	.717	.358	.400	.291	.335	.317	.643	.162	.178	.439	.719	.852	—	.401
	1	.036	.232	.048	.838	.190	.220	.171	.273	.387	.166	.846	.670	.294	.341	.237	.271	.261	.577	.148	.146	.353	.663	.839	—	.355
	2	.024	.311	.043	.928	.259	.315	.232	.406	.506	.236	.912	.752	.405	.446	.331	.384	.361	.692	.173	.202	.504	.762	.863	—	.436
10	c	.041	.285	.063	.867	.152	.626	.429	.399	.133	.625	.109	.905	.227	.455	.733	.272	.730	.266	.637	.427	.367	.326	.234	.462	.407
	1	.064	.251	.060	.810	.139	.572	.370	.369	.122	.498	.090	.868	.198	.406	.651	.250	.680	.248	.564	.344	.312	.270	.198	.430	.366
	2	.025	.309	.065	.908	.161	.664	.472	.422	.141	.717	.121	.933	.249	.493	.795	.289	.768	.279	.691	.489	.408	.368	.260	.485	.438
11	c	.033	.267	.048	.907	.353	.237	.392	.573	.488	.715	.183	.448	.315	.160	.329	.509	.932	.548	.187	.298	.173	.747	.433	.505	.407
	1	.036	.214	.041	.867	.280	.187	.345	.491	.389	.635	.154	.390	.262	.126	.268	.423	.905	.487	.167	.239	.138	.706	.355	.452	.356
	2	.030	.335	.057	.958	.448	.302	.453	.677	.613	.814	.219	.520	.382	.204	.404	.620	.967	.625	.212	.375	.217	.799	.533	.572	.473
12	c	.029	.242	.036	.837	.283	.348	.449	.121	.693	.119	.672	.591	.377	.321	.314	.363	.410	.161	.349	.623	.144	.542	.457	.424	.371
	1	.036	.221	.036	.798	.245	.306	.415	.118	.651	.096	.622	.544	.334	.294	.288	.349	.376	.147	.333	.607	.146	.510	.445	.404	.347
	2	.014	.296	.036	.936	.374	.453	.533	.128	.796	.174	.793	.707	.483	.387	.378	.396	.493	.195	.386	.662	.140	.621	.487	.475	.431
Total	c	.029	.267	.044	.837	.319	.386	.290	.374	.390	.439	.354	.525	.410	.355	.399	.419	.468	.418	.466	.423	.319	.491	.452	.635	.393
	1	.039	.218	.045	.772	.285	.322	.239	.328	.354	.382	.281	.503	.350	.307	.339	.362	.413	.371	.405	.397	.305	.447	.402	.581	.348
	2	.018	.327	.043	.914	.359	.463	.352	.429	.461	.507	.443	.552	.482	.413	.471	.488	.534	.473	.539	.455	.336	.543	.513	.894	.447

*Combined introduction 1 and 2.
**Introduction 1 = no limit.
***Introduction 2 = 0-1,000

Table B-2

Standardized standard deviations for NSCS pretest by version and position within version

Version	Introduction	Question number 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
1	c*	.072	.287	.110	.379	.366	.320	.190	.354	.283	.358	.137	.372	.293	.309	.267	.254	.306	.347	.335	.340	.333	.346	.344	.344	.369
	1**	.030	.263	.111	.389	.359	.306	.176	.352	.263	.353	.138	.380	.280	.286	.246	.242	.288	.347	.326	.344	.334	.343	.343	.334	.360
	2**	.012	.343	.109	.314	.321	.321	.230	.316	.312	.337	.134	.322	.285	.332	.317	.297	.313	.320	.335	.304	.336	.341	.341	.349	.384
2	c	.045	.300	.139	.342	.313	.293	.135	.341	.233	.376	.260	.389	.233	.365	.353	.354	.343	.312	.233	.329	.342	.350	.314	.282	.373
	1	.054	.241	.115	.374	.276	.247	.114	.308	.185	.383	.216	.366	.194	.349	.343	.319	.315	.292	.183	.305	.309	.340	.292	.312	.348
	2	.014	.358	.173	.241	.345	.332	.167	.359	.292	.332	.309	.404	.283	.327	.308	.354	.340	.325	.291	.343	.371	.324	.349	.202	.394
3	c	.059	.293	.160	.279	.310	.314	.319	.220	.280	.345	.375	.314	.334	.258	.359	.257	.339	.376	.241	.299	.179	.317	.334	.336	.372
	1	.082	.258	.155	.329	.297	.305	.286	.199	.268	.335	.357	.299	.315	.237	.313	.211	.314	.353	.281	.282	.154	.323	.316	.328	.350
	2	.020	.313	.164	.220	.320	.321	.341	.235	.289	.351	.384	.319	.343	.273	.389	.288	.351	.382	.198	.311	.198	.310	.343	.340	.386
4	c	.086	.274	.101	.287	.317	.331	.328	.283	.314	.261	.271	.328	.277	.319	.294	.326	.340	.339	.310	.250	.337	.256	.309	.317	.367
	1	.038	.245	.087	.339	.282	.333	.296	.225	.298	.278	.220	.304	.282	.293	.250	.332	.337	.349	.326	.222	.321	.225	.279	.344	.354
	2	.112	.288	.111	.203	.339	.315	.336	.311	.312	.243	.303	.326	.273	.324	.322	.282	.335	.328	.290	.270	.337	.277	.313	.268	.375
5	c	.103	.297	.098	.291	.334	.350	.308	.259	.347	.299	.321	.310	.311	.228	.233	.283	.186	.320	.274	.278	.269	.298	.361	.216	.379
	1	.147	.269	.078	.348	.319	.355	.290	.261	.331	.256	.329	.338	.319	.239	.287	.261	.162	.314	.255	.270	.245	.265	.337	.257	.362
	2	.012	.309	.113	.208	.332	.321	.309	.257	.355	.324	.292	.268	.277	.220	.163	.299	.204	.321	.288	.283	.290	.317	.374	.157	.388
6	c	.054	.255	.139	.278	.290	.264	.264	.350	.302	.243	.262	.239	.333	.373	.299	.347	.336	.259	.342	.327	.334	.300	.293	.333	.370
	1	.057	.221	.133	.331	.278	.217	.219	.360	.286	.222	.213	.210	.345	.342	.275	.309	.326	.225	.349	.352	.309	.338	.274	.358	.351
	2	.051	.278	.146	.191	.298	.302	.179	.311	.316	.261	.296	.264	.295	.387	.317	.367	.335	.289	.316	.291	.354	.245	.305	.292	.382
7	c	.053	.281	.112	.361	.262	.353	.320	.328	.223	.294	.190	.311	.337	.332	.298	.332	.308	.270	.347	.340	.292	.242	.339	.319	.360
	c	.051	.253	.095	.367	.232	.330	.289	.296	.176	.274	.152	.286	.323	.316	.281	.333	.290	.246	.334	.338	.264	.213	.344	.304	.343
	2	.010	.306	.130	.342	.292	.358	.335	.343	.268	.314	.231	.315	.332	.329	.309	.332	.320	.291	.358	.332	.313	.271	.315	.326	.374
8	c	.034	.245	.084	.267	.275	.249	.225	.290	.152	.293	.335	.223	.332	.293	.185	.325	.331	.319	.295	.303	.174	.248	.330	—	.358
	1	.037	.194	.027	.306	.256	.221	.229	.262	.130	.256	.324	.199	.343	.269	.124	.355	.345	.286	.336	.294	.126	.226	.346	—	.342
	2	.029	.279	.115	.210	.292	.272	.221	.309	.171	.316	.338	.243	.317	.314	.227	.279	.307	.335	.221	.295	.210	.263	.307	—	.370
9	c	.079	.250	.131	.246	.250	.291	.257	.334	.311	.238	.245	.334	.296	.300	.276	.298	.282	.317	.209	.240	.317	.298	.270	—	.370
	1	.048	.192	.126	.284	.204	.232	.204	.275	.304	.192	.279	.362	.272	.300	.250	.269	.255	.338	.183	.182	.299	.332	.311	—	.355
	2	.097	.281	.135	.206	.278	.324	.289	.364	.308	.265	.213	.308	.305	.294	.288	.311	.296	.292	.228	.275	.317	.263	.237	—	.377
10	c	.133	.278	.171	.282	.227	.349	.351	.315	.212	.353	.218	.250	.276	.308	.315	.352	.317	.297	.341	.375	.313	.313	.263	.356	.384
	1	.164	.235	.152	.316	.195	.360	.348	.314	.188	.352	.172	.263	.246	.307	.342	.352	.334	.280	.362	.348	.290	.277	.231	.374	.367
	2	.103	.305	.184	.247	.248	.337	.348	.316	.229	.326	.245	.238	.296	.305	.279	.353	.299	.310	.316	.383	.325	.333	.283	.343	.393
11	c	.108	.261	.129	.230	.280	.263	.336	.310	.338	.303	.243	.308	.302	.224	.267	.336	.203	.314	.252	.268	.226	.317	.314	.328	.366
	1	.104	.220	.102	.264	.258	.251	.349	.327	.327	.329	.225	.326	.245	.180	.249	.333	.238	.331	.226	.268	.199	.354	.295	.339	.358
	2	.114	.293	.157	.166	.279	.265	.310	.252	.310	.234	.260	.269	.323	.264	.271	.308	.142	.273	.280	.318	.250	.254	.311	.302	.385
12	c	.038	.251	.102	.300	.269	.282	.315	.204	.334	.183	.134	.331	.296	.302	.261	.309	.315	.222	.296	.331	.180	.347	.314	.318	.348
	1	.042	.229	.080	.320	.261	.269	.315	.197	.347	.134	.345	.332	.279	.283	.247	.307	.313	.203	.287	.345	.171	.344	.323	.317	.338
	2	.020	.297	.144	.217	.268	.287	.301	.224	.279	.262	.272	.304	.312	.337	.286	.316	.308	.260	.316	.295	.202	.348	.291	.317	.364
Total	c	.080	.275	.125	.305	.312	.340	.311	.338	.359	.374	.368	.373	.344	.328	.360	.362	.361	.343	.381	.345	.346	.372	.361	.357	.368
	1	.088	.238	.107	.342	.295	.313	.232	.316	.351	.356	.357	.327	.322	.304	.334	.344	.351	.332	.364	.338	.343	.367	.351	.368	.351
	2	.067	.302	.144	.233	.327	.355	.330	.353	.328	.383	.360	.418	.355	.347	.376	.372	.364	.350	.387	.349	.349	.372	.362	.335	.381

* Combined introduction 1 and 2.
**Introduction 1 = no limit.
***Introduction 2 = 0-1,000.

Table B-3

Regression of the means and standard deviations within versions, by their position in the questionnaire

Version	Means r^2	Means a	Means b	Standard deviations r^2	Standard deviations a	Standard deviations b
1	.172	.227	.013	.192	.228	.005
2	.126	.226	.011	.190	.225	.005
3	.149	.252	.013	.130	.240	.004
4	.038	.337	.006	.202	.234	.004
5	.008	.365	.003	.032	.252	.002
6	.184	.213	.014	.358	.210	.006
7	.049	.314	.007	.164	.236	.004
8	.130	.212	.013	.225	.185	.006
9	.112	.249	.013	.208	.215	.004
10	.024	.339	.005	.277	.232	.005
11	.044	.317	.007	.175	.225	.004
12	.040	.295	.006	.208	.205	.005
Total	.180	.275	.010	.391	.245	.007

Appendix B

Table B-4

Aggregation of core items 1-5

Core item: version/ postion	$\bar{x} = \Sigma x/n$	$\Sigma(x^2)$	n	Variance
1: 1/7	.118	11.832	237	.036
5/14	.164	17.127	217	.052
9/19	.162	13.222	189	.044
Total	.147	42.181	643	—
	BSS = .305		η^{2*} = .011	
	WSS = 28.036		F(2,640) = 3.481	
	TSS = 28.341			
2: 2/9	.171	19.180	230	.054
6/10	.204	20.739	207	.059
10/18	.266	27.561	174	.088
Total	.209	67.479	611	—
	BSS = .899		η^{2*} = .022	
	WSS = 39.873		F(2,608) = 6.854	
	TSS = 40.772			
3: 3/16	.232	25.932	217	.066
7/22	.230	22.164	199	.059
11/6	.237	22.210	178	.069
Total	.233	70.305	594	—
	BSS = .005		η^{2*} = .000	
	WSS = 38.137		F(2,591) = .039	
	TSS = 38.142			
4: 4/23	.381	50.295	209	.096
8/5	.307	33.043	195	.076
12/13	.377	40.366	176	.088
Total	.355	123.704	580	—
	BSS = .678		η^{2*} = .013	
	WSS = 49.919		F(2,577) = 3.918	
	TSS = 50.597			
5: 3/12	.469	69.434	218	.099
7/8	.440	60.084	200	.107
11/18	.548	69.286	174	.098
Total	.483	198.803	592	—
	BSS = 1.146		η^{2*} = .019	
	WSS = 59.802		F(2,589) = 5.644	
	TSS = 60.948			

*η^2 = BSS/TSS = proportion of variance explained.

NSCS: Reliability statement and standard errors: National level, census regions and subdivisions, and OMB regions*

Appendix C

Reliability of the estimates. The particular sample used for this survey is only one of a large number of possible samples of the same size that could have been selected using the same sample design and sample selection procedures. Estimates derived from different samples could differ from each other. The standard error of a survey estimate is a measure of the variation among the estimates from all possible samples and is, therefore, a measure of the precision with which the estimate from a particular sample approximates the average result of all possible samples. The standard errors given in the following tables are primarily measures of sampling variability, that is, of the variations that occurred by chance because a sample rather than the entire population was surveyed. The sample estimate and its estimated standard error enable one to construct confidence intervals, ranges that would include the average result of all possible samples with a known probability.

If all possible samples were selected under essentially the same general conditions and using the same sample design, and an estimate and its estimated standard error were calculated from each sample, then:

1. Approximately 68 percent of the intervals from one standard error below the estimate to one standard error above the estimate would include the average result of all possible samples.

2. Approximately 90 percent of the intervals from 1.6 standard errors below the estimate to 1.6 standard errors above the estimate would include the average result of all possible samples.

3. Approximately 95 percent of the intervals from two standard errors below the estimate to two standard errors above the estimate would include the average result of all possible samples.

In addition to sampling error, the survey estimates are subject to nonsampling errors. Sources of nonsampling error result from different types of response errors, systematic data errors introduced by the interviewer, mistakes in coding and processing the data, and incomplete sampling frames, for example, a large number of the mobile homes built since 1970 and one small class of housing units constructed since 1970 are not included in the sample frame. Quality control and edit procedures were utilized at various steps of the survey operation to keep the nonsampling errors at an acceptably low level.

As calculated for this survey, the standard errors partially measure some nonsampling errors, that is, those due to random response and interviewer errors, but do not reflect any systematic biases in the data. These standard errors are approximations to the standard errors of various estimates. To derive standard errors that would be applicable to a wide variety of items and could be prepared at a moderate cost, a number of approximations were required. As a result, standard errors calculated using the following tables provide an indication of the magnitude of the standard errors rather than the precise standard error for any specific item.

Computation and application of the standard errors. Confidence interval construction in this section is discussed in terms of the Y (that is, log) and G (geometric mean) score estimates, where

$$Y = \frac{\sum_{i=1}^{N} W_i \log_{10} X_i}{\sum_{i=1}^{N} W_i}$$

and $G = 10^Y$ as mentioned previously. Construction of confidence intervals for geometric means depends on the log scores. Y and G score estimates at the national, census region and subdivision, and Federal region levels can be obtained from tables C-1 through C-4, respectively. For example, the Y and G estimates for item 112 in the New England census subdivision are .6560 and 4.5, using table C-3.

The standard errors (s.e.Y) given in tables C-1 through C-4 for the national level, 4 census regions, 9 subdivisions, and 10 Federal regions, respectively, are applicable to estimates (Y) of mean log scores found in those tables, that is, the Y values. Estimates of the geometric means of scores (G) are also found in the tables. The estimates in tables C-2, C-3, and C-4 are for the 12 core items and five additional ones which were included on the 12 questionnaire versions with greatest frequency. An estimate of the standard error of a Y score at the State, SMSA, or city level can be obtained by multiplying s.e.(Y) for the corresponding subdivision estimate by an adjustment factor (a.f.) for the State, SMSA, or city of interest. The adjustment factor is a multiplier which reflects the numerical relationship between census subdivision and State, SMSA, or city level standard error estimates. Adjustment factors are found in tables C-5, C-6, and C-7. For example, from tables C-3 and C-5, for item 1 in New York State,

$$\begin{aligned} \text{s.e.}(Y) &= (\text{a.f.})(\text{s.e.}\,Y) \\ &= (1.4)(.0167) \\ &= .0234 \end{aligned}$$

where s.e. (Y) is found in the Middle Atlantic subdivision portion of C-3.

The standard error of a difference between two Y sample estimates is approximately equal to the square root of the sum of the squares of the standard errors of each Y estimate considered separately. This formula will represent the actual standard error quite accurately for the difference between uncorrelated sample estimates. If, however, there is a large positive correlation, the formula will overestimate the true standard error of the difference, and, if there is a large negative correlation, the formula will underestimate the true standard error of the difference.

Confidence intervals for the geometric mean scores and the ratio of geometric mean scores can be constructed as described below. A confidence interval for the ratio of geometric mean scores can be used to detect differences in these scores between comparable subnational areas such as regions or States. Also, it should be noted $\exp(X) = e^X$, where e is the base for natural logarithms.

1. Confidence interval for the geometric mean score:

Lower endpoint:

$$\exp[Y/.4343] - Z(\text{s.e.}[Y])\,\frac{(\exp[Y/.4343])}{.4343}$$

Upper endpoint:

$$\exp[Y/.4343] + Z(\text{s.e.}[Y])\,\frac{(\exp[Y/.4343])}{.4343}$$

where possible values of Z include 1, 1.6, and 2 corresponding to the 68, 90, and 95 percent confidence intervals described in the "Reliability of the estimates" section above.

*Prepared by the U.S. Bureau of the Census.

2. Confidence interval for the ratio of the geometric mean scores:

Lower endpoint:

$$\exp[Y_i - Y_j/.4343] - Z\,(\text{s.e.}[Y_i])^2 + (\text{s.e.}[Y_j]^2)^{1/2}\,\frac{(\exp[(Y_i - Y_j)/.4343])}{.4343}$$

Upper endpoint:

$$\exp[Y_i - Y_j/.4343] + Z\,(\text{s.e.}[Y_i])^2 + (\text{s.e.}[Y_j]^2)^{1/2}\,\frac{(\exp[(Y_i - Y_j)/.4343])}{.4343}$$

where Y_i and Y_j are log scores for two regions in a given item.

Illustration of the use of tables of standard errors for item 1. From Table C-1, the standard error of log score for item 1 at the national level is s.e.(Y) = .0070. The Y score is 1.5772.

Using $Z = 1$, the confidence interval constructed for the geometric mean score would have lower endpoint:

$$\exp\left[\frac{1.5772}{.4343}\right] - (1)(.0070)\frac{(\exp[1.5772/.4343])}{.4343}$$
$$= 37.7729 - (.0161)(37.7729)$$
$$= 37.1648$$

and upper endpoint:

$$\exp\left[\frac{1.5772}{.4343}\right] + (1)(.0070)\frac{(\exp[1.5772/.4343])}{.4343}$$
$$= 37.7729 + (.0161)(37.7729)$$
$$= 38.3810.$$

Using this result, we can conclude with approximately 68 percent confidence that the interval (37.1648, 38.3810) contains the population geometric mean score for item 1 at the national level.

With $Z = 2$, the confidence interval constructed would have lower endpoint:

$$\exp\left[\frac{1.5772}{.4343}\right] - (2)(.0070)\frac{(\exp[1.5772/.4343])}{.4343}$$
$$= 37.7729 - (.0322)(37.7729)$$
$$= 36.5566$$

and upper endpoint:

$$\exp\left[\frac{1.5772}{.4343}\right] + (2)(.0070)\frac{(\exp[1.5772/.4343])}{.4343}$$
$$= 37.7729 + (.0322)(37.7729)$$
$$= 38.9892.$$

Using this result, we can conclude with approximately 95 percent confidence that the interval (36.5566, 38.9892) contains the population geometric mean score for item 1 at the national level.

Confidence interval construction for the State, SMSA, and city levels. From tables C-3 and C-5, the standard error of log score for item 1 in Massachusetts is

$$(\text{a.f.})(\text{s.e.}[Y]) = (1.4)(.0279) = .0391.$$

The estimate of the population mean log score (Y) for item 1 in Massachusetts is log (total weighted antilog of scores) = log (37.909) = 1.5787. Using $Z = 2$, the confidence interval constructed for the geometric mean score would have lower endpoint:

$$\exp\left[\frac{1.5787}{.4343}\right] - (2)(.0391)\frac{(\exp[1.5787/.4343])}{.4343}$$
$$= 37.9036 - (.1801)(37.9036)$$
$$= 31.0772$$

and upper endpoint:

$$\exp\left[\frac{1.5787}{.4343}\right] + (2)(.0391)\frac{(\exp[1.5787/.4343])}{.4343}$$
$$= 37.9036 + (.1801)(37.9036)$$
$$= 44.7300.$$

Using this result, we can conclude with approximately 95 percent confidence that the interval (31.0772, 44.7300) contains the population geometric mean score for item 1 in Massachusetts.

From tables C-3 and C-5, the standard error of the difference between the Y sample estimates for item 1 in Massachusetts and Vermont is

$$\sqrt{[(\text{a.f.})(\text{s.e.}[Y^1])]^2 + [(\text{a.f.})(\text{s.e.}[Y^2])]^2}$$
$$= \sqrt{[(1.4)(.0279)]^2 + [(3.0)(0.279)]^2}$$
$$= .0922$$

where Y_1 and Y_2 are the sample estimates for item 1 from Massachusetts and Vermont, respectively.

To obtain the confidence interval of the ratio of the G estimates for Massachusetts and Vermont, the estimate of the difference between the Y estimates is needed. It is found by the procedure used above for Massachusetts. Thus, Y_1 and Y_2 are the logs of the total weighted antilogs of scores for Massachusetts and Vermont, respectively. With Y_1 = log (37.909) = 1.5787 and Y_2 = log (33.855) = 1.5296, we have $Y_1 - Y_2 = .0491$.

Using $Z = 2$, the confidence interval constructed for the ratio of the geometric mean scores would have lower endpoint:

$$\exp\left[\frac{.04912}{.4343}\right] + (2)(.0922)\frac{(\exp[.0491/.4343])}{.4343}$$
$$= 1.1197 - (.4246)(1.1197)$$
$$= .6443$$

and upper endpoint:

$$\exp\left[\frac{.0491}{.4343}\right] - (2)(.0922)\frac{(\exp[.0491/.4343])}{.4343}$$
$$= 1.1197 + (.4246)(1.1197)$$
$$= 1.5951.$$

Thus, the resulting confidence interval is from .6443 to 1.5951. Since this confidence interval includes the number 1, it cannot be concluded with 95 percent confidence that a difference in geometric mean scores between the geographical subdivisions is due to factors other than sampling error.

Table C-1

Geometric mean of scores and standard error estimates for mean of log scores for national estimates

(Crime severity questions 1-204)

Crime severity question	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)
1. A person steals property worth $10 from outside a building.	1.5772	.0070	37.8
2. A person steals property worth $50 from outside a building.	1.7997	.0066	63.0
3. A person steals property worth $100 from outside a building.	1.8947	.0065	78.5
4. A person steals property worth $1,000 from outside a building.	2.1767	.0048	150.2
5. A person steals property worth $10,000 from outside a building.	2.3789	.0074	239.2
6. A person breaks into a building and steals property worth $10.	1.8486	.0071	70.6
7. A person does not have a weapon. He threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.	2.1606	.0082	144.8
8. A person threatens a victim with a weapon unless the victim gives him money. The victim gives him $10 and is not harmed.	2.2041	.0083	160.0
9. A person intentionally injures a victim. As a result, the victim dies.	2.8912	.0102	778.4
10. A person intentionally injures a victim. The victim is treated by a doctor and is hospitalized.	2.4174	.0076	261.4
11. A person intentionally injures a victim. The victim is treated by a doctor but is not hospitalized.	2.2696	.0076	186.0
12. A person intentionally shoves or pushes a victim. No medical treatment is required.	1.5074	.0094	32.2
13. A person stabs a victim to death.	2.8929	.0084	781.4
14. A person kills a victim by recklessly driving an automobile.	2.6296	.0125	426.1
15. A person robs a victim at gunpoint. The victim struggles and is shot to death.	2.9760	.0187	946.2
16. A person performs an illegal abortion.	2.2732	.0170	187.6
17. A person attempts to kill a victim with a gun. The gun misfires and the victim escapes unharmed.	2.5547	.0157	358.7
18. A person threatens to seriously injure a victim.	2.3082	.0161	203.3
19. A person kidnaps a victim. A ransom of $1,000 is paid and the victim is returned unharmed.	2.7288	.0145	535.5
20. A person kidnaps a victim.	2.6659	.0142	463.4
21. A person intentionally shoots a victim with a gun. The victim is wounded slightly but does not require medical treatment.	2.5895	.0141	388.6
22. A person intentionally shoots a victim with a gun. The victim requires treatment by a doctor but not hospitalization.	2.6181	.0161	415.1
23. A person intentionally shoots a victim with a gun. The victim requires hospitalization.	2.7353	.0144	543.6
24. A person stabs a victim with a knife. No medical treatment is required.	2.4136	.0115	259.2
25. A person stabs a victim with a knife. The victim requires treatment by a doctor but not hospitalization.	2.5739	.0127	374.9
26. A person stabs a victim with a knife. The victim requires hospitalization.	2.5959	.0128	394.3
27. A person intentionally hits a victim with a lead pipe. No medical treatment is required.	2.2364	.0105	172.3
28. A person intentionally hits a victim with a lead pipe. The victim requires treatment by a doctor but not hospitalization.	2.2908	.0117	195.3
29. A person intentionally hits a victim with a lead pipe. The victim requires hospitalization.	2.3567	.0120	227.3
30. A person beats a victim with his fists. The victim requires hospitalization.	2.1816	.0134	151.9
31. A person beats a victim with his fists. The victim is hurt but does not require medical treatment.	2.2030	.0111	159.6
32. A person beats a victim with his fists. The victim requires treatment by a doctor but not hospitalization.	2.1303	.0119	135.0
33. A man forcibly rapes a woman. As a result of physical injuries she dies.	3.0627	.0170	1155.3
34. A man forcibly rapes a woman. Her physical injuries require hospitalization.	2.8178	.0183	657.3
35. A man forcibly rapes a woman. Her physical injuries require treatment by a doctor but not hospitalization.	2.6426	.0148	439.1
36. A man forcibly rapes a woman. No other physical injury occurs.	2.7526	.0089	565.7
37. A person attempts to rob a victim but runs away when a police car approaches.	1.8527	.0110	71.2
38. A person threatens to harm a victim unless the victim gives him money. The victim gives him $1,000 and is not harmed.	2.3517	.0121	224.7
39. A person threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.	2.0711	.0111	117.8
40. A person robs a victim. The victim is injured but not hospitalized.	1.9804	.0041	95.6
41. A person robs a victim of $1,000 at gunpoint. The victim is wounded and requires hospitalization.	2.6628	.0143	460.0
42. A person robs a victim of $10 at gunpoint. The victim is wounded and requires hospitalization.	2.5935	.0157	392.2
43. A person robs a victim of $1,000 at gunpoint. The victim is wounded and requires treatment by a doctor but not hospitalization.	2.5577	.0117	361.1
44. A person robs a victim of $10 at gunpoint. The victim is wounded and requires treatment by a doctor but not hospitalization.	2.5368	.0137	344.2
45. A person robs a victim of $1,000 at gunpoint. No physical harm occurs.	2.3277	.0117	212.6
46. A person robs a victim of $10 at gunpoint. No physical harm occurs.	2.3139	.0140	206.0
47. A person, armed with a lead pipe, robs a victim of $1,000. The victim is injured and requires hospitalization.	2.5344	.0125	342.3
48. A person, armed with a lead pipe, robs a victim of $10. The victim is injured and requires hospitalization.	2.4650	.0130	291.7
49. A person, armed with a lead pipe, robs a victim of $1,000. The victim is injured and requires treatment by a doctor but not hospitalization.	2.4775	.0119	300.3
50. A person, armed with a lead pipe, robs a victim of $10. The victim is injured and requires treatment by a doctor but not hospitalization.	2.1926	.0122	155.8
51. A person, armed with a lead pipe, robs a victim of $1,000. No physical harm occurs.	2.2946	.0108	197.0
52. A person, armed with a lead pipe, robs a victim of $10. No physical harm occurs.	2.2126	.0127	163.2
53. A person, using force, robs a victim of $1,000. The victim is hurt and requires hospitalization.	2.5662	.0131	368.3
54. A person, using force, robs a victim of $10. The victim is hurt and requires hospitalization.	2.5044	.0130	319.4
55. A person, using force, robs a victim of $1,000. The victim is hurt and requires treatment by a doctor but not hospitalization.	2.5597	.0137	362.8
56. A person, using force, robs a victim of $10. The victim is hurt and requires treatment by a doctor but not hospitalization.	2.1659	.0113	146.5

continued

Table C-1—*continued*

Geometric mean of scores and standard error estimates for mean of log scores for national estimates

(Crime severity questions 1-204)

Crime severity question	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)
57. A person, using force, robs a victim of $1,000. No physical harm occurs.	2.2420	.0108	174.6
58. A person, using force, robs a victim of $10. No physical harm occurs.	2.0493	.0125	112.0
59. A person picks a victim's pocket of $100.	1.9812	.0098	95.8
60. A person picks a victim's pocket of $10.	1.8569	.0128	71.9
61. A person snatches a handbag containing $10 from a victim on the street.	2.0331	.0104	107.9
62. A person breaks into a bank at night and steals $100,000.	2.5308	.0146	339.5
63. A person, armed with a gun, robs a bank of $100,000 during business hours. No one is physically hurt.	2.5878	.0141	387.1
64. A person gives the floor plans of a bank to a bank robber.	2.4190	.0124	262.4
65. A person willingly hides out a bank robber.	2.1989	.0123	158.1
66. A person trespasses in the backyard of a private home.	1.1493	.0146	14.1
67. A person attempts to break into a home but runs away when a police car approaches.	1.9654	.0134	92.3
68. A person breaks into a home and steals $1,000.	2.3222	.0115	210.0
69. A person breaks into a home and steals $10.	1.8372	.0101	68.7
70. A person breaks into a department store, forces open a safe, and steals $1,000.	2.3286	.0120	213.1
71. A person breaks into a department store, forces open a cash register, and steals $10.	1.8603	.0106	72.5
72. A person breaks into a department store and steals merchandise worth $1,000.	2.2021	.0122	159.3
73. A person breaks into a department store and steals merchandise worth $10.	1.7819	.0106	60.5
74. A person breaks into a public recreation center, forces open a cash box, and steals $1,000.	2.1808	.0111	151.6
75. A person breaks into a public recreation center, forces open a cash box, and steals $10.	1.9750	.0114	94.4
76. A person breaks into a school and steals equipment worth $1,000.	2.3278	.0109	212.7
77. A person breaks into a school and steals $10 worth of supplies.	1.8288	.0117	67.4
78. A person forces open a cash register in a department store and steals $10.	1.8355	.0110	68.5
79. A person steals $1,000 worth of merchandise from the counter of a department store.	2.2225	.0118	166.9
80. A person steals $10 worth of merchandise from the counter of a department store.	1.6773	.0119	47.6
81. A person breaks into a parking meter and steals $10 worth of nickels.	1.5361	.0096	34.4
82. A person walks into a public museum and steals a painting worth $1,000.	2.3271	.0117	212.4
83. A person steals $1,000 worth of merchandise from an unlocked car.	2.1577	.0115	143.8
84. A person attempts to break into a parked car, but runs away when a police car approaches.	1.8993	.0100	79.3
85. A person steals an unlocked car and later abandons it undamaged.	1.9880	.0117	97.3
86. A person steals a locked car and sells it.	2.3743	.0119	236.8
87. A person steals an unlocked car and sells it.	2.2457	.0117	176.1
88. A person breaks into a display case in a store and steals $1,000 worth of merchandise.	2.3250	.0113	211.4
89. A person knowingly trespasses in a railroad yard.	1.2643	.0123	18.4
90. A person trespasses in a railroad yard and steals tools worth $1,000.	2.2395	.0122	173.6
91. A person trespasses in a railroad yard and steals a lantern worth $10.	1.4821	.0109	30.3
92. A person trespasses in a city-owned storage lot and steals equipment worth $10.	1.6861	.0120	48.5
93. A person signs someone else's name to a check and cashes it.	2.1982	.0126	157.8
94. An employee embezzles $1,000 from his employer.	2.1336	.0112	136.0
95. An employee embezzles $10 from his employer.	1.6130	.0107	41.0
96. A person knowingly passes a bad check.	1.8963	.0119	78.8
97. A person runs a prostitution racket.	2.1267	.0166	133.9
98. A person gets customers for a prostitute.	2.1447	.0168	139.5
99. A woman engages in prostitution.	1.6566	.0151	45.4
100. A person is a customer in a house of prostitution.	1.5487	.0158	35.4
101. A man drags a woman into an alley, tears her clothes, but flees before she is physically harmed or sexually attacked.	2.5668	.0132	368.8
102. A man runs his hands over the body of a female victim, then runs away.	2.0502	.0152	112.3
103. A theater owner knowingly shows pornographic movies to a minor.	2.0933	.0137	124.0
104. A person makes an obscene phone call.	1.6119	.0115	40.9
105. Two persons willingly engage in a homosexual act.	1.4587	.0208	28.8
106. A man exposes himself in public.	2.0166	.0155	103.9
107. A man tries to entice a minor into his car for immoral purposes.	2.7418	.0175	551.8
108. A male, over 16 years old, has sexual relations with a willing female under 16.	1.5432	.0206	34.9
109. A person under 16 years old illegally has a bottle of wine.	1.3646	.0140	23.2
110. A person is drunk in public.	1.2248	.0144	16.8
111. A person under 16 years old is drunk in public.	1.5834	.0151	38.3
112. A person under 16 years old plays hooky from school.	.7317	.0046	5.4
113. A person under 16 years old is reported to police by his parents as an offender because they are unable to control him.	1.3157	.0151	20.7
114. A person under 16 years old runs away from home.	1.2714	.0135	18.7
115. A person under 16 years old breaks a curfew law by being out on the street after the hour permitted by the law.	1.2057	.0118	16.1
116. A group continues to hang around a corner after being told to break up by a police officer.	1.3634	.0118	23.1
117. A person is a vagrant. That is, he has no home and no visible means of support.	.8250	.0143	6.7
118. A person disturbs the neighborhood with loud, noisy behavior.	1.3956	.0130	24.9
119. A person turns in a false fire alarm.	1.9181	.0127	82.8
120. A person carries a gun, illegally.	2.0070	.0133	101.6
121. A person is found firing a rifle for which he knows he has no permit.	1.6617	.0160	45.9
122. A person knowingly carries an illegal knife.	1.7275	.0133	53.4
123. A person is a customer in a place where he knows liquor is sold without a license.	1.5362	.0161	34.4
124. A person runs a place where liquor is sold without a license.	2.0800	.0127	120.2
125. A person takes part in a dice game in an alley.	1.0349	.0124	10.8
126. A person runs a place where he permits gambling to occur illegally.	1.8818	.0165	76.2
127. A person is a customer in a place where he knows gambling occurs illegally.	1.5829	.0141	38.3
128. A person takes bets on the numbers.	1.3744	.0157	23.7
129. A person runs a narcotics ring.	2.8685	.0174	738.8
130. A person smuggles marijuana into the country for resale.	2.3609	.0146	229.6
131. A person smuggles heroin into the country.	2.6299	.0167	426.5
132. A person sells marijuana to others for resale.	2.2710	.0163	186.7
133. A person sells heroin to others for resale.	2.6549	.0165	451.7
134. A person illegally sells barbiturates, such as prescription sleeping pills, to others for resale.	2.3533	.0141	225.6
135. A person has some marijuana for his own use.	1.4674	.0174	29.3

136. A person has some heroin for his own use.	2.0737	.0151	118.5
137. A person uses heroin.	2.1554	.0179	143.0
138. A person uses marijuana.	1.4922	.0165	31.1
139. A person has some barbiturates, such as sleeping pills, for his own use without a legal prescription.	1.4943	.0133	31.2
140. A person takes barbiturates, such as sleeping pills, without a legal prescription.	1.5104	.0160	32.4
141. A person operates a store where he knowingly sells stolen property.	2.3525	.0120	225.2
142. A person knowingly buys stolen property from the person who stole it.	2.0389	.0135	109.4
143. A person loans money at an illegally high interest rate.	2.0661	.0160	116.4
144. Several large companies illegally fix the retail prices of their products.	2.3033	.0115	201.0
145. A store owner knowingly puts "large" eggs into containers marked "extra-large."	1.6099	.0123	40.7
146. An employer illegally threatens to fire employees if they join a labor union.	1.8430	.0151	69.7
147. A labor union official illegally threatens to organize a strike if an employer hires nonunion workers.	1.9097	.0171	81.2
148. A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city.	2.4551	.0148	285.1
149. A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result, one person dies.	2.6396	.0134	436.1
150. A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result, 20 people die.	2.9328	.0195	856.7
151. A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result, one person becomes ill but does not require medical treatment.	2.1788	.0138	150.9
152. A factory knowingly gets rid of its waste in a way that pollutes the water supply of a city. As a result, 20 people become ill but none require medical treatment.	2.6348	.0134	431.3
153. Knowing that a shipment of cooking oil is bad, a store owner decides to sell it anyway.	2.2284	.0144	169.2
154. Knowing that a shipment of cooking oil is bad, a store owner decides to sell it anyway. Only one bottle is sold and the purchaser dies.	2.5899	.0145	388.9
155. Knowing that a shipment of cooking oil is bad, a store owner decides to sell it anyway. Only one bottle is sold and the purchaser is treated by a doctor but not hospitalized.	2.2517	.0144	178.5
156. A company pays a bribe of $10,000 to a legislator to vote for a law favoring the company.	2.5001	.0125	316.3
157. A legislator takes a bribe of $10,000 from a company to vote for a law favoring the company.	2.5677	.0130	369.5
158. A legislator takes a bribe from a company to vote for a law favoring the company.	2.4820	.0146	303.4
159. A company pays a bribe to a legislator to vote for a law favoring the company.	2.3881	.0147	244.4
160. A city official takes a bribe from a company for his help in getting a city building contract for the company.	2.2963	.0123	197.9
161. A county court judge takes a bribe to give a light sentence in a criminal case.	2.5372	.0141	344.5
162. A police officer takes a bribe not to interfere with an illegal gambling operation.	2.4177	.0127	261.6
163. A public official takes $1,000 of public money for his own use.	2.3156	.0124	206.8
164. A person cheats on his Federal income tax return.	1.9919	.0133	98.2
165. A person cheats on his Federal income tax return and avoids paying $10,000 in taxes.	2.1263	.0149	133.7
166. A doctor cheats on claims he makes to a Federal health insurance plan for patient services.	2.4894	.0153	308.6
167. A doctor cheats on claims he makes to a Federal health insurance plan for patient services. He gains $10,000.	2.4700	.0137	295.1
168. A person illegally gets monthly welfare checks.	2.2080	.0128	161.4
169. A person illegally gets monthly welfare checks of $200.	2.2574	.0127	180.9
170. A person, free on bail for committing a serious crime, purposefully fails to appear in court on the day of his trial.	2.1390	.0128	137.7
171. A person knowingly makes false entries on a document that the court has requested for a criminal trial.	2.3025	.0123	200.7
172. An employer orders his employees to make false entries on documents that the court has requested for a criminal trial.	2.4678	.0148	293.6
173. A person knowingly lies under oath during a trial.	2.3960	.0119	248.9
174. A person pays a witness to give false testimony in a criminal trial.	2.4260	.0121	266.7
175. A government official intentionally hinders the investigation of a criminal offense.	2.3387	.0142	218.1
176. A person conceals the identity of others that he knows have committed a serious crime.	2.2245	.0122	167.7
177. A person pays another person to commit a serious crime.	2.6760	.0149	474.2
178. An employer orders one of his employees to commit a serious crime.	2.5872	.0132	386.5
179. A police officer knowingly makes a false arrest.	2.3206	.0137	209.2
180. A person plants a bomb in a public building. The bomb explodes but no one is injured.	2.7294	.0150	536.3
181. A person plants a bomb in a public building. The bomb explodes and one person is killed.	2.9830	.0172	961.7
182. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	3.1980	.0088	1557.5
183. A person plants a bomb in a public building. The bomb explodes and one person is injured but no medical treatment is required.	2.8584	.0159	721.7
184. A person plants a bomb in a pubic building. The bomb explodes and 20 people are injured but no medical treatment is required.	2.8238	.0180	666.6
185. An armed person skyjacks an airplane and demands to be flown to another country.	2.7602	.0143	575.7
186. An armed person skyjacks an airplane and holds the crew and passengers hostage until a ransom is paid.	2.8549	.0154	716.0
187. An employer refuses to hire a qualified person because of that person's race.	2.1455	.0148	139.8
188. A real estate agent refuses to sell a house to a person because of that person's race.	2.0709	.0159	117.7
189. Because of a victim's race, a person injures a victim to prevent him from enrolling in a public school. No medical treatment is required.	2.1721	.0128	148.6
190. A person intentionally sets fire to a building causing $10,000 worth of damage.	2.4454	.0120	278.9
191. A person intentionally sets fire to a building causing $100,000 worth of damage.	2.7356	.0140	544.0
192. A person intentionally sets fire to a building causing $500,000 worth of damage.	2.6881	.0145	487.7
193. A man beats his wife with his fists. She requires hospitalization.	2.6029	.0138	400.8
194. A man stabs his wife. As a result, she dies.	2.9335	.0187	858.0
195. A woman stabs her husband. As a result, he dies.	2.7861	.0173	611.1
196. A parent beats his young child with his fists. As a result, the child dies.	3.0197	.0161	1046.4
197. A parent beats his young child with his fists. The child requires hospitalization.	2.6997	.0157	500.8
198. A teenage boy beats his father with his fists. The father requires hospitalization.	2.2391	.0136	173.4
199. A teenage boy beats his mother with his fists. The mother requires hospitalization.	2.5413	.0149	347.8
200. Three high school boys beat a male classmate with their fists. He requires hospitalization.	2.3943	.0141	247.9
201. Ten high school boys beat a male classmate with their fists. He requires hospitalization.	2.4097	.0142	256.9
202. A high school boy beats a middle-aged woman with his fists. She requires hospitalization.	2.6295	.0136	426.1
203. A high school boy beats an elderly woman with his fists. She requires hospitalization.	2.5835	.0131	383.3
204. A man beats a stranger with his fists. He requires hospitalization.	2.4113	.0144	257.8

Appendix C

Table C-2 (Census regions)

Geometric mean of scores and standard error estimates for mean of log scores

(Crime severity questions 1–13, 36, 40, 112, and 182)

Crime severity question	Northeast			North Central			South			West		
	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)
1. A person steals property worth $10 from outside a building.	1.5363	.0134	34.4	1.6109	.0119	40.8	1.5881	.0130	38.7	1.5606	.0139	36.4
2. A person steals property worth $50 from outside a building.	1.7426	.0132	55.3	1.8199	.0101	66.1	1.8149	.0144	65.3	1.8164	.0149	65.5
3. A person steals property worth $100 from outside a building.	1.8454	.0128	70.1	1.9223	.0104	83.6	1.9076	.0136	80.8	1.8939	.0142	78.3
4. A person steals property worth $1,000 from outside a building.	2.1275	.0088	134.1	2.2082	.0090	161.5	2.1707	.0103	148.2	2.2030	.0102	159.6
5. A person steals property worth $10,000 from outside a building.	2.3159	.0149	207.0	2.4182	.0137	262.0	2.3712	.0136	235.1	2.4147	.0173	259.9
6. A person breaks into a building and steals property worth $10.	1.7931	.0143	62.1	1.8698	.0114	74.1	1.8547	.0138	71.6	1.8776	.0184	75.4
7. A person does not have a weapon. He threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.	2.1445	.0214	139.5	2.1823	.0137	152.1	2.1018	.0162	126.4	2.2497	.0142	177.7
8. A person threatens a victim with a weapon unless the victim gives him his money. The victim gives him $10 and is not harmed.	2.1656	.0141	146.4	2.2452	.0142	175.9	2.1569	.0186	143.5	2.2716	.0198	186.9
9. A person intentionally injures a victim. As a result the victim dies.	2.8590	.0146	722.8	2.9026	.0204	799.1	2.8260	.0222	669.8	3.0273	.0253	1064.9
10. A person intentionally injures a victim. The victim is treated by a doctor and hospitalized.	2.4029	.0145	252.9	2.4343	.0141	271.8	2.3584	.0157	228.2	2.5131	.0191	325.9
11. A person intentionally injures a victim.The victim is treated by a doctor but not hospitalized.	2.2591	.0135	181.6	2.2802	.0142	190.6	2.2198	.0153	165.9	2.3546	.0164	226.3
12. A person intentionally shoves or pushes a victim. No medical treatment is required.	1.5295	.0244	33.8	1.5324	.0154	34.1	1.4631	.0151	29.1	1.5174	.0211	32.9
13. A person stabs a victim to death.	2.8586	.0141	722.1	2.9171	.0145	826.2	2.8271	.0196	671.6	3.0040	.0154	1009.3
36. A man forcibly rapes a woman. No other physical injury occurs.	2.7388	.0199	548.1	2.7614	.0154	577.4	2.7128	.0192	516.2	2.8257	.0191	669.4
40. A person robs a victim. The victim is injured but not hospitalized.	1.9450	.0080	88.1	1.9960	.0084	99.1	1.9575	.0080	90.7	2.0423	.0088	110.2
112. A person under 16 years old plays hooky from school.	.7242	.0084	5.3	.7231	.0080	5.3	.7788	.0103	6.0	.6727	.0069	4.7
182. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	3.1588	.0150	1441.6	3.2114	.0160	1627.2	3.1455	.0209	1398.1	3.3179	.0184	2079.1

Table C-3 (Census subdivisions)

Geometric mean of scores and standard error estimates for mean of log scores

(Crime severity questions 1-13, 36, 40, 112, and 182)

Crime severity question	New England			Middle Atlantic			East North Central			West North Central		
	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)
1. A person steals property worth $10 from outside a building.	1.5896	.0279	38.9	1.5176	.0167	32.9	1.6217	.0142	41.8	1.5864	.0228	38.6
2. A person steals property worth $50 from outside a building.	1.7915	.0212	61.9	1.7260	.0156	53.2	1.8249	.0133	66.8	1.8087	.0213	64.4
3. A person steals property worth $100 from outside a building.	1.8851	.0210	76.7	1.8314	.0155	67.8	1.9371	.0100	86.5	1.8877	.0194	77.2
4. A person steals property worth $1,000 from outside a building.	2.1781	.0152	150.7	2.1096	.0102	128.7	2.2151	.0092	164.1	2.1923	.0167	155.7
5. A person steals property worth $10,000 from outside a building.	2.3883	.0192	244.5	2.2900	.0185	195.0	2.4239	.0157	265.4	2.4051	.0220	254.2
6. A person breaks into a building and steals property worth $10.	1.8421	.0273	69.5	1.7764	.0164	59.8	1.8833	.0148	76.4	1.8391	.0172	69.0
7. A person does not have a weapon. He threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.	2.2076	.0220	161.3	2.1223	.0272	132.5	2.2041	.0164	160.0	2.1323	.0268	135.6
8. A person threatens a victim with a weapon unless the victim gives him his money. The victim gives him $10 and is not harmed.	2.2148	.0190	164.0	2.1476	.0176	140.5	2.2677	.0159	185.2	2.1926	.0261	155.8
9. A person intentionally injures a victim. As a result the victim dies.	2.9334	.0275	857.9	2.8329	.0164	680.6	2.9199	.0218	831.5	2.8631	.0434	729.7
10. A person intentionally injures a victim. The victim is treated by a doctor and hospitalized.	2.4271	.0348	267.3	2.3947	.0136	248.1	2.4440	.0181	278.0	2.4122	.0267	258.3
11. A person intentionally injures a victim.The victim is treated by a doctor but not hospitalized.	2.2805	.0290	190.8	2.2516	.0145	178.5	2.2979	.0140	198.6	2.2388	.0371	173.3
12. A person intentionally shoves or pushes a victim. No medical treatment is required.	1.4859	.0450	30.6	1.5457	.0285	35.1	1.5730	.0178	37.4	1.4386	.0217	27.5
13. A person stabs a victim to death.	2.9185	.0317	829.0	2.8375	.0154	687.9	2.9254	.0123	842.2	2.8979	.0366	790.6
36. A man forcibly rapes a woman. No other physical injury occurs.	2.7538	.0329	567.3	2.7337	.0237	541.6	2.7885	.0157	614.5	2.6987	.0387	499.7
40. A person robs a victim. The victim is injured but not hospitalized.	1.9899	.0107	97.7	1.9292	.0093	85.0	2.0063	.0063	101.5	1.9724	.0230	93.8
112. A person under 16 years old plays hooky from school.	.6560	.0108	4.5	.7481	.0105	5.6	.7448	.0100	5.6	.6731	.0154	4.7
182. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	3.2231	.0308	1671.4	3.1362	.0170	1368.5	3.2223	.0139	1668.4	3.1865	.0424	1536.2

continued

Table C-3 (Census subdivisions)—*continued*

Geometric mean of scores and standard error estimates for mean of log scores

(Crime severity questions 1-13, 36, 40, 112, and 182)

Crime severity question	South Atlantic			East South Central			West South Central			Mountain		
	Mean of log scores (Y_j)	Standard error of Y_j	Geometric mean of scores (G_j)	Mean of log scores (Y_j)	Standard error of Y_j	Geometric mean of scores (G_j)	Mean of log scores (Y_j)	Standard error of Y_j	Geometric mean of scores (G_j)	Mean of log scores (Y_j)	Standard error of Y_j	Geometric mean of scores (G_j)
1. A person steals property worth $10 from outside a building.	1.5997	.0184	39.8	1.5812	.0296	38.1	1.5743	.0281	37.5	1.5429	.0242	34.9
2. A person steals property worth $50 from outside a building.	1.8129	.0222	65.0	1.8187	.0316	65.9	1.8156	.0264	65.4	1.8126	.0385	65.0
3. A person steals property worth $100 from outside a building.	1.9085	.0178	81.0	1.9074	.0256	80.8	1.9062	.0267	80.6	1.9033	.0315	80.0
4. A person steals property worth $1,000 from outside a building.	2.1739	.0128	149.2	2.1771	.0254	150.4	2.1612	.0189	144.9	2.2007	.0176	158.7
5. A person steals property worth $10,000 from outside a building.	2.3648	.0169	231.6	2.3716	.0315	235.3	2.3810	.0283	240.4	2.3834	.0328	241.8
6. A person breaks into a building and steals property worth $10.	1.8723	.0203	74.5	1.8469	.0271	70.3	1.8320	.0213	67.9	1.8650	.0456	73.3
7. A person does not have a weapon. He threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.	2.1124	.0227	129.5	2.0689	.0321	117.2	2.1088	.0304	128.5	2.1984	.0346	157.9
8. A person threatens a victim with a weapon unless the victim gives him his money. The victim gives him $10 and is not harmed.	2.2200	.0290	165.9	2.0618	.0390	115.3	2.1216	.0230	132.3	2.2371	.0373	172.6
9. A person intentionally injures a victim. As a result the victim dies.	2.8596	.0298	723.8	2.8122	.0582	648.9	2.7812	.0371	604.2	2.9309	.0621	852.9
10. A person intentionally injures a victim. The victim is treated by a doctor and hospitalized.	2.3904	.0230	245.7	2 3116	.0272	204.9	2.3406	.0267	219.1	2.4437	.0336	277.8
11. A person intentionally injures a victim.The victim is treated by a doctor but not hospitalized.	2.2423	.0186	174.7	2.1871	.0314	153.8	2.2077	.0302	161.3	2.2812	.0307	191.1
12. A person intentionally shoves or pushes a victim. No medical treatment is required.	1.4830	.0228	30.4	1.4339	.0379	27.2	1.4516	.0244	28.3	1.4741	.0529	29.8
13. A person stabs a victim to death.	2.8774	.0299	754.0	2.7941	.0328	622.4	2.7700	.0274	588.9	2.9239	.0245	839.3
36. A man forcibly rapes a woman. No other physical injury occurs.	2.7556	.0298	569.7	2.6655	.0291	463.0	2.6769	.0261	475.2	2.7858	.0376	610.7
40. A person robs a victim. The victim is injured but not hospitalized.	1.9693	.0096	93.2	1.9460	.0181	88.3	1.9465	.0145	88.4	1.9878	.0123	97.2
112. A person under 16 years old plays hooky from school.	.7825	.0139	6.1	.7660	.0298	5.8	.7819	.0194	6.1	.6433	.0077	4.4
182. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	3.1975	.0307	1575.8	3.1025	.0351	1266.2	3.0929	.0260	1238.6	3.2345	.0398	1716.1

Crime severity question	Pacific		
	Mean of log scores (Y_j)	Standard error of Y_j	Geometric mean of scores (G_j)
1. A person steals property worth $10 from outside a building.	1.5665	.0154	36.9
2. A person steals property worth $50 from outside a building.	1.8176	.0140	65.7
3. A person steals property worth $100 from outside a building.	1.8906	.0153	77.7
4. A person steals property worth $1,000 from outside a building.	2.2039	.0115	159.9
5. A person steals property worth $10,000 from outside a building.	2.4261	.0203	266.8
6. A person breaks into a building and steals property worth $10.	1.8819	.0179	76.2
7. A person does not have a weapon. He threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.	2.2671	.0152	185.0
8. A person threatens a victim with a weapon unless the victim gives him his money. The victim gives him $10 and is not harmed.	2.2838	.0235	192.2
9. A person intentionally injures a victim. As a result the victim dies.	3.0598	.0310	1147.6
10. A person intentionally injures a victim. The victim is treated by a doctor and hospitalized.	2.5365	.0207	344.0
11. A person intentionally injures a victim.The victim is treated by a doctor but not hospitalized.	2.3811	.0208	240.5
12. A person intentionally shoves or pushes a victim. No medical treatment is required.	1.5328	.0226	34.1
13. A person stabs a victim to death.	3.0319	.0204	1076.1
36. A man forcibly rapes a woman. No other physical injury occurs.	2.8390	.0229	690.2
40. A person robs a victim. The victim is injured but not hospitalized.	2.0612	.0098	115.1
112. A person under 16 years old plays hooky from school.	.6829	.0090	4.8
182. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	3.3469	.0226	2223.0

Appendix C

Table C-4 (Federal regions)

Geometric mean of scores and standard error estimates for mean of log scores

(Crime severity questions 1-13, 36, 40, 112, and 182)

Crime severity question	Federal region #1			Federal region #2			Federal region #3			Federal region #4		
	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)
1. A person steals property worth $10 from outside a building.	1.5896	.0279	38.9	1.4709	.0205	29.6	1.5991	.0169	39.7	1.5960	.0196	39.4
2. A person steals property worth $50 from outside a building..	1.7915	.0212	61.9	1.6862	.0201	48.5	1.7859	.0214	61.1	1.8314	.0224	67.8
3. A person steals property worth $100 from outside a building.	1.8851	.0210	76.7	1.7743	.0192	59.5	1.9188	.0157	83.0	1.9122	.0188	81.7
4. A person steals property worth $1,000 from outside a building.	2.1781	.0152	150.7	2.0678	.0100	116.9	2.1823	.0135	152.2	2.1755	.0154	149.8
5. A person steals property worth $10,000 from outside a building.	2.3883	.0192	244.5	2.2371	.0166	172.6	2.3956	.0209	248.7	2.3560	.0192	227.0
6. A person breaks into a building and steals property worth $10.	1.8421	.0273	69.5	1.7389	.0165	54.8	1.8304	.0213	67.7	1.8833	.0215	76.4
7. A person does not have a weapon. He threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.	2.2076	.0220	161.3	2.1152	.0358	130.4	2.1259	.0229	133.6	2.0933	.0236	124.0
8. A person threatens a victim with a weapon unless the victim gives him his money. The victim gives him $10 and is not harmed.	2.2148	.0190	164.0	2.1274	.0141	134.1	2.2138	.0299	163.6	2.1478	.0287	140.6
9. A person intentionally injures a victim. As a result the victim dies.	2.9334	.0275	857.9	2.8356	.0165	684.8	2.8475	.0332	703.9	2.8372	.0321	687.3
10. A person intentionally injures a victim. The victim is treated by a doctor and hospitalized.	2.4271	.0348	267.3	2.3864	.0191	243.5	2.4049	.0178	254.0	2.3547	.0238	226.3
11. A person intentionally injures a victim.The victim is treated by a doctor but not hospitalized.	2.2805	.0290	190.8	2.2328	.0143	170.9	2.2921	.0203	195.9	2.1996	.0200	158.3
12. A person intentionally shoves or pushes a victim. No medical treatment is required.	1.4859	.0450	30.6	1.5284	.0376	33.8	1.5596	.0247	36.3	1.4423	.0256	27.7
13. A person stabs a victim to death.	2.9185	.0317	829.0	2.8386	.0101	689.6	2.8744	.0251	748.9	2.8300	.0301	676.0
36. A man forcibly rapes a woman. No other physical injury occurs.	2.7538	.0329	567.3	2.7122	.0170	515.5	2.7462	.0422	557.5	2.7317	.0272	539.2
40. A person robs a victim. The victim is injured but not hospitalized.	1.9899	.0107	97.7	1.9261	.0098	84.3	1.9583	.0117	90.8	1.9554	.0111	90.2
112. A person under 16 years old plays hooky from school.	.6560	.0108	4.5	.7291	.0135	5.4	.7913	.0136	6.2	.7705	.0170	5.9
182. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	3.2231	.0308	1671.4	3.1316	.0171	1353.8	3.1706	.0240	1481.3	3.1584	.0307	1440.2

Crime severity question	Federal region #5			Federal region #6			Federal region #7			Federal region #8		
	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)
1. A person steals property worth $10 from outside a building.	1.6142	.0140	41.1	1.5779	.0262	37.8	1.6009	.0274	39.9	1.4903	.0359	30.9
2. A person steals property worth $50 from outside a building.	1.8227	.0125	66.5	1.8154	.0236	65.4	1.8077	.0225	64.2	1.8286	.0576	67.4
3. A person steals property worth $100 from outside a building.	1.9250	.0096	84.1	1.9098	.0248	81.2	1.9151	.0237	82.2	1.9281	.0399	84.7
4. A person steals property worth $1,000 from outside a building.	2.2060	.0097	160.7	2.1659	.0171	146.5	2.2175	.0156	165.0	2.2007	.0269	158.7
5. A person steals property worth $10,000 from outside a building.	2.4142	.0152	259.5	2.3841	.0261	242.2	2.4261	.0216	266.8	2.4183	.0575	262.0
6. A person breaks into a building and steals property worth $10.	1.8807	.0137	76.0	1.8396	.0187	69.1	1.8310	.0206	67.8	1.8835	.0650	76.5
7. A person does not have a weapon. He threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.	2.1967	.0167	157.3	2.1119	.0285	129.4	2.1356	.0271	136.6	2.1238	.0411	133.0
8. A person threatens a victim with a weapon unless the victim gives him his money. The victim gives him $10 and is not harmed.	2.2600	.0153	182.0	2.1234	.0233	132.9	2.2100	.0348	162.2	2.2137	.0601	163.6
9. A person intentionally injures a victim. As a result the victim dies.	2.9109	.0223	814.5	2.7841	.0350	608.3	2.8879	.0495	772.4	2.8876	.0922	772.0
10. A person intentionally injures a victim. The victim is treated by a doctor and hospitalized.	2.4414	.0175	276.3	2.3510	.0254	224.4	2.4171	.0270	261.3	2.4595	.0595	288.1
11. A person intentionally injures a victim.The victim is treated by a doctor but not hospitalized.	2.2895	.0171	194.8	2.2081	.0255	161.5	2.2446	.0278	175.6	2.3071	.0405	202.8
12. A person intentionally shoves or pushes a victim. No medical treatment is required.	1.5603	.0174	36.3	1.4532	.0227	28.4	1.4550	.0253	28.5	1.4363	.0740	27.3
13. A person stabs a victim to death.	2.9193	.0145	830.5	2.7708	.0258	590.0	2.9187	.0380	829.3	2.9269	.03592	845.1
36. A man forcibly rapes a woman. No other physical injury occurs.	2.7773	.0185	598.9	2.6817	.0244	480.5	2.7246	.0346	530.4	2.7572	.0499	571.7
40. A person robs a victim. The victim is injured but not hospitalized.	2.0002	.0087	100.0	1.9484	.0131	88.8	1.9897	.0216	97.7	1.9849	.0231	96.6
112. A person under 16 years old plays hooky from school.	.7374	.0092	5.5	.7828	.0181	6.1	.6791	.0184	4.8	.6049	.0160	4.0
182. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	3.2123	.0165	1630.4	3.0950	.0238	1244.6	3.2240	.0428	1675.1	3.2248	.0482	1678.0

continued

Appendix C

Table C-4 (Federal regions)—*continued*

Geometric mean of scores and standard error estimates for mean of log scores

(Crime severity questions 1–13, 36, 40, 112, and 182)

Crime severity question	Federal region #9			Federal region #10		
	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)	Mean of log scores (Y_i)	Standard error of Y_i	Geometric mean of scores (G_i)
1. A person steals property worth $10 from outside a building.	1.5480	.0133	35.3	1.6407	.0385	43.7
2. A person steals property worth $50 from outside a building.	1.8044	.0145	63.7	1.8506	.0279	70.9
3. A person steals property worth $100 from outside a building.	1.8875	.0169	77.2	1.8797	.0265	75.8
4. A person steals property worth $1,000 from outside a building.	2.2033	.0131	159.7	2.1969	.0182	157.4
5. A person steals property worth $10,000 from outside a building.	2.4116	.0208	258.0	2.4291	.0446	268.6
6. A person breaks into a building and steals property worth $10.	1.8678	.0205	73.8	1.8924	.0265	78.1
7. A person does not have a weapon. He threatens to harm a victim unless the victim gives him money. The victim gives him $10 and is not harmed.	2.2836	.0160	192.1	2.2343	.0311	171.5
8. A person threatens a victim with a weapon unless the victim gives him his money. The victim gives him $10 and is not harmed.	2.2929	.0271	196.3	2.2415	.0285	174.4
9. A person intentionally injures a victim. As a result the victim dies.	3.0661	.0326	1164.5	2.9985	.0533	996.5
10. A person intentionally injures a victim. The victim is treated by a doctor and hospitalized.	2.5169	.0230	328.8	2.5163	.0286	328.3
11. A person intentionally injures a victim.The victim is treated by a doctor but not hospitalized.	2.3798	.0209	239.8	2.3301	.0553	213.8
12. A person intentionally shoves or pushes a victim. No medical treatment is required.	1.5864	.0272	38.6	1.3474	.0296	22.3
3. A person stabs a victim to death.	3.0262	.0207	1062.1	3.0008	.0373	1001.9
36. A man forcibly rapes a woman. No other physical injury occurs.	2.8409	.0233	693.3	2.8004	.0503	631.5
40. A person robs a victim. The victim is injured but not hospitalized.	2.0531	.0094	113.0	2.0411	.0265	109.9
112. A person under 16 years old plays hooky from school.	.7071	.0108	5.1	.5925	.0119	3.9
182. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	3.3605	.0230	2293.4	3.2454	.0467	1759.5

Table C-5

Adjustment factors for standard errors: States

Census subdivision and State	Design effect
New England	
Maine	3.4
New Hampshire, Vermont	3.0
Massachusetts	1.4
Connecticut	2.0
Rhode Island	3.6
Middle Atlantic	
New York	1.4
Pennsylvania	1.8
New Jersey	2.2
East North Central	
Michigan	2.1
Ohio	1.9
Indiana	2.8
Wisconsin	3.0
Illinois	1.9
West North Central	
Minnesota	2.1
Iowa	2.4
Missouri	1.9
North Dakota, South Dakota	3.6
Nebraska	3.3
Kansas	2.7
South Atlantic	
Maryland, Delaware	2.7
District of Columbia	7.0
West Virginia	4.2
North Carolina	2.5
South Carolina	3.5
Georgia	2.6
Florida	2.0
Virginia	2.6
East South Central	
Kentucky	2.0
Tennessee	1.8
Alabama	1.9
Mississippi	2.5
West South Central	
Arkansas	3.1
Louisiana	2.4
Oklahoma	2.7
Texas	1.3
Mountain	
Montana, Wyoming	2.9
Colorado	1.9
New Mexico	3.0
Idaho, Nevada	2.6
Utah	2.9
Arizona	2.1
Pacific	
Alaska, Hawaii	5.1
Washington	2.8
Oregon	3.5
California	1.2

Table C-6

Adjustment factors for standard errors: Standard Metropolitan Statistical Areas (SMSAs)

SMSA	Design effect
New York, N.Y.-N.J.	2.1
Chicago, Ill.	2.4
Los Angeles-Long Beach, Calif.	2.0
Philadelphia, Pa.-N.J.	2.8
Detroit, Mich.	3.1
Boston, Mass.	2.1
San Francisco-Oakland, Calif.	2.9
Washington, D.C.-Md.-Va.	3.4
Nassau-Suffolk, N.Y.	3.8
Dallas, Tex.	3.5
St. Louis, Mo.-Ill.	3.1
Pittsburgh, Pa.	4.0
Cleveland, Ohio	4.5
Atlanta, Ga.	4.7
Anaheim-Santa Ana-Garden Grove, Calif.	4.0
San Diego, Calif.	4.3
Miami, Fla.	4.7
Milwaukee, Wis.	5.3
Seattle-Everett, Wash.	4.4
Denver, Colo.	2.6
Cincinnati, Ohio-Ky.-Ind.	5.1
Tampa-St. Petersburg, Fla.	5.1
Buffalo, N.Y.	5.3
Kansas City, Mo.-Kans.	3.6
Houston, Tex.	2.9
Baltimore, Md.	4.0
Minneapolis-St. Paul, Minn.-Wis.	3.0
Newark, N.J.	4.6
Portland, Oreg.-Wash.	5.0
Columbus, Ohio	6.5
San Antonio, Tex.	4.9
Rochester, N.Y.	6.5
Riverside-San Bernardino-Ontario, Calif.	4.9
Phoenix, Ariz.	2.8
San Jose, Calif.	4.9
Indianapolis, Ind.	6.0
New Orleans, La.	4.4
Providence-Warwick-Pawtucket R.I.-Mass.	3.6
Louisville, Ky.-Ind.	4.7
Sacramento, Calif.	5.6
Memphis, Tenn.-Ark.-Miss.	4.2

Table C-7

Adjustment factors for standard errors: Cities

City	Adjustment factor
New York	2.2
Chicago	3.6
Los Angeles	3.2
Philadelphia	4.5
Detroit	5.5
Houston	3.7

Bibliography

Adams, D. K., and Z. J. Uehla (1971)
"Detection theory and problems of psychophysical discrimination." In *Sociological methodology,* edited by Herbert L. Costner. San Francisco: Jossey-Bass.

Akman, Dogan, and André Normandeau (1968)
"The measurement of crime and delinquency in Canada: A replication study." *Acta Criminologica* 1:135–73.

Akman, Dogan, Robert M. Figlio, and André Normandeau (1967)
"Concerning the measurement of delinquency: A rejoinder and beyond." *British Journal of Criminology* 7:442–49.

Blumstein, Alfred (1974)
"Seriousness weights in an index of crime." *American Sociological Review* 39:854–64.

Cross, David (1976)
"Multivariate psychophysical scaling." Paper presented at the spring meeting of the Psychometric Society and the Mathemetical Psychology Group.

Cross, David (1974)
"Some technical notes on psychophysical scaling." In *Sensation and measurement,* edited by H. R. Moskowitz, B. Scharf, and J. C. Stevens, 23–26. Boston: Reidel.

Cross, David, Bernard Tursky, and Milton Lodge (1975)
"The role of regression and range effects in the determination of the power function for electric shock." *Perception and Psychophysics* 18:9–14.

Eisler, H. (1962)
"On the problem of category scales in psychophysics." *Scandinavian Journal of Psychology* 3:81–87.

Falmagne, J. C. (1976)
"Random conjoint measurement and loudness summation." *Psychological Review* 83:65–79.

Figlio, Robert M. (1975)
"The seriousness of offenses: An evaluation by offenders and nonoffenders." *Journal of Criminal Law, Criminology and Police Science* 66:189–200.

Gold, Martin (1966)
"Undetected delinquent behavior." *Journal of Research in Crime and Delinquency* 13:27–46.

Gottfredson, Stephen D., Kathy L. Young, and William S. Laufer (1980)
"Additivity and interactions in offense seriousness scales." *Journal of Research in Crime and Delinquency* 17:26–41.

Hamblin, Robert L. (1974)
"Social attitudes: Magnitude measurement and theory." In *Measurement in the social sciences,* edited by Hubert M. Blalock, Jr. Chicago: Aldine.

Heller, Nelson B., and J. Thomas McEwen (1975)
"Applications of crime seriousness information in a police department." *Journal of Research in Crime and Delinquency* 12:44–50.

Hindelang, Michael J. (1974)
"The Uniform Crime Reports revisited." *Journal of Criminal Justice* 2:1–17.

Hsu, Marlene (1973)
"Cultural and sexual differences on the judgment of criminal offenses." *Journal of Criminal Law, Criminology and Police Science* 64:348–53.

Jacoby, Joseph E. (1972)
A system for the manual evaluation of case processing in the prosecutor's office; First annual report. Washington: National Center for Prosecution Management.

Kelly, Delos H., and Robert W. Winslow (1970)
"Seriousness of delinquent behaviour: An alternative perspective." *British Journal of Criminology* 10:124–35.

Krantz, David H., R. O. Luve, Patrick Suppes, and A. Tversky (1971)
Foundations of measurement. New York: Academic Press.

Kvalseth, Tarald O. (1980)
"Seriousness of offenses." *Criminology* 18:237–44.

LaPierre, R. T. (1934)
"Attitudes vs. actions." *Social Forces* 13:227–30.

Lesieur, H. R., and P. M. Lehman (1975)
"Remeasuring delinquency: A replication and critique." *British Journal of Criminology* 15:69–80.

Levett, W. J. M., J. B. Riemersma, and A. A. Bunt (1972)
"Binaural additivity of loudness." *Journal of Mathematical Statistical Psychology* 25:51–68.

Lodge, Milton, and Bernard Tursky (1979)
Magnitude scaling of political opinion in survey research. Laboratory for Behavioral Research, Department of Political Science, report no. 10. Stony Brook, N.Y.: State University of New York at Stony Brook.

Lodge, Milton, David Cross, Bernard Tursky, and Joseph Tannenhaus (1975)
"The psychophysical scaling and validation of a political support scale." *American Journal of Political Science* 19:611–49.

Luce, R. D., and J. W. Tukey (1964)
"Simultaneous conjoint measurement: A new type of fundamental measurement." *Journal of Mathematical Psychology* 1:1–27.

McClelland, G. N., and C. H. Coombs (1975)
"Ordmet: A general algorithm for constructing all numerical solutions to ordered metric structures." *Psychometrika* 40:269–90.

Marks, Lawrence E. (1974)
Sensory processes: The new psychophysics. New York: Academic Press.

Marks, Lawrence E. (1968)
"Stimulus range, number of categories, and the form of the category scale." *American Journal of Psychology* 81:467–79.

Normandeau, André (1970)
"De la Criminalité dans 8 pays [Crime indices for 8 countries]." *Revue Internationale Police Criminelle.*

Normandeau, André (1966)
"The measurement of delinquency in Montreal." *Journal of Criminal Law, Criminology and Police Science* 57:172–77.

Pease, Kenneth, Judith Ireson, and Jennifer Thorpe (1974)
"Additivity assumptions in the measurement of delinquency." *British Journal of Criminology* 14:256–63.

Pease, Kenneth, Judith Ireson, and Jennifer Thorpe (1975)
"Modified crime indices for eight countries," *Journal of Criminal Law, Criminology and Police Science* 66:209–14.

Poulton, E. C. (1968)
"The new psychophysics: Six models for magnitude estimation." *Psychological Bulletin* 69:1-19.

Riedel, Marc (1975)
"Perceived circumstances, inferences of intent and judgments of offense seriousness." *Journal of Criminal Law, Criminology and Police Science* 66:201-8.

Rose, G. N. G. (1966)
"Concerning the measurement of delinquency." *British Journal of Criminology* 6:414-21.

Rossi, Peter H., and J. Patrick Henry (1980)
"Seriousness: A measure for all purposes?" In *Handbook of criminal justice evaluation*, edited by Malcolm W. Klein and Katherine S. Teilmann, 489-505. Beverly Hills, Calif.: Sage.

Rossi, Peter H., Emily Waite, Christine E. Boise, and Richard E. Berk (1974)
"The seriousness of crimes." *American Sociological Review* 39:224-37.

Sellin, Thorsten (1931)
"The basis of a crime index." *Journal of Criminal Law and Criminology* 24:335-56.

Sellin, Thorsten (1938)
Culture conflict and crime. A report of the Subcommittee on Personality and Culture. New York: Social Science Research Council.

Sellin, Thorsten, and Marvin E. Wolfgang (1964)
The measurement of delinquency. New York: Wiley. (Reprint. Montclair, N.J.: Patterson Smith, 1978.)

Shelly, P. L., and M. F. Sparks (1980)
"Crime and punishment." Paper presented at the annual meeting of the American Society of Criminology, San Francisco.

Shinn, A., Jr. (1974)
"Relations between scales." In *Measurement in the social sciences,* edited by Hubert M. Blalock, Jr. Chicago: Aldine.

Stevens, J. C., J. D. Mack, and S. S. Stevens (1960)
"Growth of sensation on seven continua as measured by force of handgrip." *Journal of Experimental Psychology* 59:60-70.

Stevens, S. S. (1966a)
"A metric for the social concensus." *Science* 151:530-41.

Stevens, S. S. (1966b)
"On the operation known as judgment." *American Scientist* 54:385-401.

Stevens, S. S. (1957)
"On the psychophysical law." *Psychological Review* 64:153-81.

Stevens, S. S. (1972)
Psychophysics and social scaling. Morristown, N.J.: General Learning Press.

Stevens, S. S. (1975)
Psychophysics: Introduction to its perceptual, neural and social prospects. New York: Wiley.

Stevens, S. S., and E. Galenter (1957)
"Ratio scales and category scales for a dozen perceptual continua." *Journal of Experimental Psychology* 54:377-411.

Stevens, S. S., and H. B. Greenbaum (1966)
"Regression effect in psychophysical judgment." *Perception and Psychophysics* 1:439-46.

Turner, S. (1978)
"Introduction to the reprint edition." In T. Sellin and M. E. Wolfgang, *The Measurement of Delinquency.* Montclair, N.J.: Patterson Smith.

U.S. Department of Justice, Federal Bureau of Investigation (1980)
Uniform crime reporting handbook. Washington: U.S. Government Printing Office.

U.S. Department of Justice, Federal Bureau of Investigation (1979)
Uniform crime reports for the United States, 1978. Washington: U.S. Government Printing Office.

Velez-Diaz, Angel, and Edwin I. Megargee (1971)
"An investigation of differences in value judgments between youthful offenders and nonoffenders in Puerto Rico." *Journal of Criminal Law, Criminology and Police Science* 61:549-53.

Wagner, H., and Kenneth Pease (1978)
"On adding up scores of offense seriousness." *British Journal of Criminology* 18:175-78.

Wellford, Charles F., and Michael Wiatrowski (1975)
"On the measurement of delinquency." *Journal of Criminal Law and Criminology* 66:175-88.

Wilkins, Leslie T. (1965)
"New thinking in criminal statistics." *Journal of Criminal Law, Criminology and Police Science* 56:227-84.

Wolfgang, Marvin E. (1970)
"On devising a crime index." In *Collected studies in criminological research.* Vol. 7, *The index of crime,* 53-78. European Committee on Crime Problems. Strasbourg, France: Council of Europe.

Wolfgang, Marvin E., Robert M. Figlio, and Thorsten Sellin (1972)
Delinquency in a birth cohort. Chicago: University of Chicago Press.

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