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ABSTRACT

The Conflict Tactics Scales (CTS) is the most widely used instrument for measuring the tactics used by members of a family in a conflict situation. It is intended to measure the extent to which family members use reasoning, verbal aggression, and physical aggression. Focus is on: (1) bringing together and evaluating criticisms of the CTS so that users can be informed of problems and limitations of the instrument; (2) describing revisions and supplementary questions that were introduced in the 1985 National Family Violence Resurvey to deal with some of the criticisms; and (3) presenting new data on the factor structure, reliability, and validity of the CTS based on the 1985 Resurvey and on data reported by several other investigators who have used the CTS. The most unique aspect of the CTS is the measurement of physical violence in the family (child and spouse abuse); the CTS has the most serious deficiencies in this area. Evidence of a stable factor structure, moderate reliability, and concurrent validity; and strong evidence supporting construct validity suggest that the CTS is the best available instrument for measuring intra-family violence. (TJH)

The Conflict Tactics Scales and Its Critics: An Evaluation and New Data on Validity and Reliability*

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THE CONFLICT TACTICS SCALES AND ITS CRITICS: AN EVALUATION AND NEW DATA ON VALIDITY AND RELIABILITY*

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Contents

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History Of the CTS

The Conflict Tactics Scales (CTS) is the most widely used instrument for measuring the tactics used by members of a family in a conflict situation. It is intended to measure the extent to which family members use Reasoning, Verbal Aggression, and Physical Aggression, i.e. Violence.

The most unique aspect of the CTS is the measurement of physical violence in the family. Since the use of the CTS to measure physical abuse of children and spouses is also the most controversial aspect of the instrument, the bulk of this chapter will be devoted to that. Moreover, since even the term violence is controversial in the sense that there is no consensus, scientific or public, on the definition, it is essential to begin with the definition which underlies the CTS.

For purpose of the CTS and the research for which it was originally designed, Violence is defined as an act carried out with the intention, or perceived intention, of causing physical pain or injury to another person.*1 Violence as just defined is synonymous with the term physical aggression as used in social psychology (Bandura, 1973; Berkowitz, 1962). In addition, with the exception of violent acts which are permitted or required by law (for example, physical punishment by parents is permitted and executions are required in some circumstances), violence as just defined is synonymous with the legal concept of assault.

The first study reporting data on intra-family physical violence obtained by means of the CTS was published in 1973 (Straus, 1973). By October 1987 this instrument had been employed in more than a hundred papers and five books. It is also being used for assessment in clinical work. As might be expected, the largest number of publications (41) are by scholars associated with the Family Research Laboratory at the University of New Hampshire, where the instrument was developed. However, 36 empirical studies by other investigators have been located. There is also a substantial literature criticizing the CTS, including at least nine books and articles which devote major sections to the CTS. Feminists have been particularly critical of the instrument for allegedly understating victimization of women and overstating violence by women.*2

Despite these long standing criticisms, the CTS continues to be the most widely used instrument for research on intra-family violence, including use by some feminist critics such as Okun (1986) who employ the CTS for want of a better alternative. Thus, for better or for worse, much of the "knowledge" generated by the large volume of research on "partner violence" is based on (or critics would say, "biased by") use of the CTS.

Objectives Of The Chapter

In view of both the wide use and the wide criticism of the CTS it is important to have a comprehensive assessment of this instrument. Researchers need to know how to make the most effective use of the CTS, which is not always obvious; and they need to know the limitations of the data generated by the CTS.*3 To achieve this, the chapter:

1. Brings together and evaluates criticisms of the CTS so that users are informed of problems and limitations of the instrument. Some of these criticisms will be shown to be correct and others are erroneous.

2. Describes revisions and supplementary questions which were introduced in the 1985 National Family Violence Resurvey to deal with some of the criticisms.

3. Presents new data on factor structure, reliability and validity based on the 1985 National Family Violence Resurvey and on data reported by a number of other investigators who have used the CTS.

Appendix 2 is an extension of this chapter for readers who use the CTS in their own research or clinical purposes. It describes and evaluates alternative methods of scoring the violence items of the CTS which have been developed since the original publication of Chapter 3 in 1979); and also presents comprehensive normative tables.

Description of the CTS

Readers of this chapter should first read the Chapter 3, which is the basic methodological and theoretical source on the Conflict Tactics Scales. However, by way of summary, a brief description of the CTS is given below.

The CTS measures behaviors or tactics used in response to a conflict situation, rather than the substantive issue or "conflict of interest" giving rise to the use of these tactics. Indeed, there may be several sources of conflict since the CTS asks respondents to recall the times "in the past year" when they and their partner "disagree on major decisions, get annoyed about something the other person does, or just have spats or fights because they're in a bad book or tired or for some other reason."

The instructions go on to say "I'm go to read a list of some things that you and your partner might have done when you had a dispute and would like you to tell me for each one how often you did it in the past year." The list begins with the items from the Reasoning scale, such as "Discussed the issue calmly," goes on to the items in the Verbal Aggression scale such as "Insulted or swore at the other," and ends with the Physical Aggression or "violence" items, such as "Threw something at the partner."

The CTS questions are designed to be replicated for any family role-relationship. For the first National Family Violence Survey (Straus, Gelles and Steinmetz, 1980) the CTS questions began with the tactics used by one randomly selected child in conflicts with siblings. They were then repeated for tactics used by the respondent toward that child, by the child toward the parent, by the respondent toward his or her spouse, and by the spouse toward the respondent, for a total of five family role-relationships. Some other studies have used fewer replications of the CTS questions (e.g. Gelles and Straus, 1988) and some have used more.*4

There have been three versions of the CTS: Form A was developed in 1971-72 as a self-administered questionnaire. It was administered to college students who described their family of orientation during the year they were high school seniors (Straus, 1973, 1974). Form N expanded the list of violent acts and was used for face-to-face interviews with a nationally representative sample of American families in 1975-76. Form R is identical, but adds choking and burning or scalding to the list of violent acts and uses slightly different response categories. It also adds questions to measure who initiated the violence and whether injuries which needed medical attention occurred. Form R was used for telephone interviews with a nationally representative sample in 1985.

CRITICISMS OF THE CTS

Every method for obtaining data on the family has its limitations, and the CTS is no exception. Many of these limitations arise because, when designing an instrument, it is often necessary to choose between incompatible approaches.*5 For example, both open ended

and fixed response categories are valid under different circumstances and for different purposes. It is therefore important to be aware of the explicit and implicit choices which underlie each instrument to be able to choose the one which is most appropriate for a given purpose. Alternative procedures will be mentioned where possible, including some newly developed methods of using the CTS items to construct measures of intra-family violence.

Restricted To Conflict Related Violence

Form A. The statement explaining form A of the CTS (Straus, 1979, Appendix 1) to respondents begins: "Here is a list of things you might have done when you had a conflict or disagreement with... " This introduction implies that only acts of "instrumental" aggression (in this case, acts carried out as part of a conflict or disagreement) are appropriate responses to the questions. However, a great deal of family violence is what has been called "expressive" or "hostile" aggression (Gelles and Straus, 1979). These are aggressive acts in which the goal is to hurt the victim as an end in itself. That is, there is no apparent reason for the violence except anger and hostility. Therefore, to the extent that respondents followed the literal instructions of Form A, acts of expressive aggression are not reported, producing an underestimate of the violence rate.

There were two reasons for presenting the CTS items as responses to conflict and disagreement. First, the CTS also measures the use of reasoning as a tactic for dealing with intra-family conflicts. Consequently, an introduction putting the questions within a conflict framework is essential. Second, the focus on conflicts and disagreement was one of several methods built into the CTS to enhance its acceptability to respondents. "Since almost everyone recognizes that families have conflicts and disagreements, this serves as the first step in legitimizing response." (Straus, 1979:78-79). Of course, as in many instrument design decisions, there is a price to be paid. In this case the price was the possible loss of data on purely malevolent acts.

Forms N and R. Informal discussion with some respondents, however, revealed that the danger of missing purely expressive violence was not as great as might seem. A number of respondents ignored the literal instructions and reported act of expressive violence; for example: "I still can't figure out what was bothering him. He just walked in the door, slammed me against the wall and kicked me and sat down to watch TV."

No systematic investigation was done of the extent to which respondents reported violent incidents of this type in response to Form A because, when the CTS was revised to create Form N (Straus, 1979, Appendix 2), the introductory statement was augmented to specifically include expressive violence by adding the following: "...or just have spats or fights because they're in a bad mood or tired or for some other reasons." Consequently, this criticism of the CTS applies mainly to data gathered with Form A. Nevertheless, the Form N and R introductory statement continues to emphasize behavior in response to a specific conflicts. The possibility therefore remains that the CTS underestimate violence in the form of relatively pure acts of hostility and malevolence, but there is no evidence that it does so to a greater extent than alternative methods.

Limited Set Of Violent Acts

Predetermined List Restricts and Distorts. The use of a fixed set of violent acts and a standard set of response categories is a procedure which can force respondents into dealing with concepts which are alien to their thinking and lack personal meaning. Although this is always a possibility, it does not seem to be applicable to the CTS. The acts in the CTS were selected on the basis of my own qualitative interviews and suggestions by colleagues and students and all have been determined to be almost universally meaningful by in-depth interviews. Moreover, other investigators, including strident critics of the

Table 1. Effect of Additional Severe Assault Items In Form R on Child Abuse and Spouse Abuse Rates

Type of Violence	Rate per 100 Form N	Form R*	Increase
Very Severe Violence Against Child	2.1	2.3	9.5%
Severe Violence Against Child	10.8	11.0	1.9%
Any Husband-to-Wife Violence	11.6	11.6	0.0
Severe Husband-to-Wife Violence	3.2	3.4	6.3%
Any Wife-to-Husband Violence	12.4	12.4	0.0
Severe Wife-to-Husband Violence	4.6	4.8	4.3%
Any Violence Between the Couple	16.0	16.1	0.6%
Severe Violence Between the Couple	6.0	6.3	5.0%

* The violent acts in form R are identical to those in Form N, except that "burned or scalded" is added to the list for parental violence and "chocked" is added to the list for couple violence.

CTS such as Dobash and Dobash (1984:274), have produced an almost identical set of violent acts.

One reason these pre-determined questions are so broadly meaningful is that they refer to overt acts, rather than to opinions, attitudes, or beliefs. In the case overt acts, although it may also be important to determine the subjective meaning of the acts, the primary problem is completeness and accuracy of recall. A check list of acts, such as the CTS tends to remind respondents of things which might otherwise be forgotten and therefore results in a higher incidence of violence than open ended questions (Smith, 1987).

Number Of Items. There must be hundreds of ways to be physically violent to another family member. Yet the Violence scale of Form R is based on only nine questions, listing a total of 14 violent acts. For example, pushing a spouse down the stairs is a highly dangerous act which is not included in the CTS.

There were several reasons for restricting the CTS to a relatively few acts of violence. (1) The CTS was developed for use in survey research. The length of survey interviews is limited. In addition, a large proportion of the interview time must be used to gather data on variables to which the violence measure will be related, such as data on possible causes or consequences of family violence. (2) The number of violence items had to be restricted to allow room for the items needed for the Reasoning and Verbal Aggression scales. (3) The study for which form N was developed replicated the list of items to obtain data on violence in each of the following five role relationships: child-to-child, parent-to-child, child-to-parent, husband-to-wife, and wife-to-husband. That makes a total of 8 x 5 = 40 violence items, which was believed to be the limit of many respondent's patience.

The Specific Items. There might also be objections to the specific items included in the CTS, and to the omission of other acts. The acts in the CTS were selected from a larger pool of items suggested by my own qualitative interviews and by colleagues and students. The final selection was partly based on the objective of creating a measure that could be used to compare the amount of violence in each of the five role relationships listed above. This requires using a list of violent acts that is sufficiently general to be appropriate for each of the five role relationships. Thus, placing someone on a hot radiator, although relevant for measuring child abuse, was not felt to be appropriate to measure violence in the other role relationships. The constraints discussed in this and the preceding paragraph are also the reason why several violent behaviors are included in two of the CTS items (e.g. "Kicked, bit, or hit with fist"). These acts may not be equivalent. However, even if each had been asked separately, equivalence is still problematic. Kicking a man in the shins is not equivalent to kicking in the groin, and not the equivalent of kicking a pregnant woman in the abdomen. This level of specificity is rarely possible in survey research and is one of many reasons why in-depth qualitative research is needed.

The 13 violent acts in Form N were assumed to be a sample of all possible violent acts. It was further assumed that even though many specific acts are not included in the CTS, someone who engaged in an act which is not among the 13 is likely have committed one or more of the acts which are in the CTS. While this may be generally true, there are enough exceptions to warrant increasing the list of violent acts to the extent that is possible within the constraints of a specific study (e.g., available interview time and respondent tolerance). We did this to a limited extent in the 1985 National Family Violence Resurvey. The revision (Form R) consisted of adding "choked" to the list of violent acts for spouses, and "burned or scalded" to the list for violence by parents. Table 1 shows that the additional items resulted in increased rates. The increase is minimal or zero for the "any" violence measures because two thirds of the violent acts are in the minor violence category and one additional type of severe assault is only a small proportion of the total. However, the one additional severe violence item increases the rate of severe assaults by four to nine percent.

(Table 1 about here)

Although the results presented in Table 1 suggest that additional items will help reduce under-reporting somewhat, these data do not speak to the more general issue of whether the CTS items are a representative sample of violent acts which occur between family members. This issue needs to be investigated by qualitative in-depth interviews with victims and aggressors. However, a partial review of published qualitative studies shows that the CTS items are almost universally mentioned, but as indicated at the beginning of this section, each study also tends to identify a few violent acts which are not in the CTS list. For example, Dobash and Dobash (1984) list "attempt to drown" and "stand on" in addition to the acts included in the CTS.

Threats Are Counted As Violence

Several critics of the CTS have mistakenly assumed that the item "Threatened to hit or throw something" is counted as one of the violent acts (see, for example, Dobash and Dobash, 1983:271; Stark and Flitcraft, 1983:343) despite the scoring instructions to the contrary (see Chapter 3). The threat item is part of the verbal aggression scale. It was deliberately placed right before the first of the physical aggression items because pretesting showed that it helped respondents distinguish between threats and overt acts. It gives respondents an opportunity to first describe threats. Having done that, makes more clear the distinction between threats and overt acts; and in the subsequent items, which are focused on overt acts, they are less likely to report threats when the question asks for actual acts of overt violence. Ironically, still others have criticized the CTS precisely because it does not take into account threats (c.f. Breines and Gordon, 1983).

Self-Reports Are Inaccurate Using A One Year Period

Response Distortion. All self-report measures are subject to memory errors and also to a variety of conscious and unconscious distortions of what is reported. The CTS attempts to minimize the distortions by presenting the violence items in a context that has meaning and legitimacy to respondents (see Chapter 3). The high rate of participation for both interview and mail surveys using the CTS is indirect evidence that this is effective.

In addition, validity studies have been carried out comparing the responses of different family members. These show that essentially the same results are obtained, irrespective of whether the respondent is the husband, the wife, or a college age child (Straus, 1979: 83).

Another approach to investigating response distortion was used with a large sample who had just completed the CTS. They were asked about their reactions to the instrument, including whether they had exaggerated to make it "...seem like there was more physical fighting than there really was," or played down the fights "...so that the interview makes it seem like there was less physical fighting than there really was." Of course, one cannot tell whether the respondents answered these questions accurately. But for what it is worth, only eight tenths of a percent said that they had exaggerated, and only 1.1% said that they had understated the amount of violence. Still, one can be fairly sure that not all respondents told all. Cross tabulating the question just described by the self-reported violence rates shows that the percent who said they played down the amount of violence is about 0.5% of those who reported no violence toward their child or spouse, but about 7% of those who reported frequent severe assaults to a child or spouse. For these and other reasons (Straus, Gelles, and Steinmetz, 1980: 35-36, 64-65) the CTS violence rates -- high as they are -- probably underestimate the true rates by a considerable amount.

Despite the underestimation of incidence rates, the rates are several times higher than those produced by any other method in current use (see Chapter 5. Nevertheless, the underestimation is a limitation of the CTS when the purpose is to determine the extent of

the problem for purposes of planning prevention and treatment programs. On the other hand, when the CTS is used to test theoretical propositions concerning causes or consequences of violence, under-reporting will not affect these relationships provided the degree of under-reporting is not confounded with the independent variable.

Referent Period. The CTS asks respondents to indicate whether any of the violent acts occurred during the preceding twelve months. This is too long a period for accurate recall. The problem is particularly acute for the items in the Reasoning and Verbal Aggression scales, and for the minor acts of violence by parents toward children such as slapping. Some of these occur so often that parents would have to keep a diary to provide accurate data. On the other hand, marital violence is relatively rare --a rate of about 16% during a one year period. This is such a highly skewed distribution that a large sample is necessary to secure enough cases of violence to be statistically reliable. If a shorter referent period were to be used, the distribution would be even more skewed (since fewer events would have occurred in a shorter period). That would require an even larger sample. Moreover, even with a large sample, the skewed distribution limits statistical techniques that can be applied. Consequently, investigations of marital violence are faced with a difficult choice. If a one year referent period is used, the recall error problem is exacerbated. If a shorter time period is used, recall errors will be less, but an extremely large sample size would be needed, and the resulting data would be extremely skewed. It might be 1% versus 99% distribution if a one month referent period is used).

A one year referent period was chosen for the CTS because that seemed to be the lesser of the two evils just discussed. However, if the research is concerned with violence between siblings, or violence by parents to children, a shorter referent period might be a better choice. Violence in these roles occurs with such frequency that neither a prohibitively large sample, nor an impossibly skewed distribution would result for a three or six month, or perhaps even a one month, referent period.

Equates Acts That Differ Greatly In Seriousness

The violence scale items start with relatively minor acts, such as pushing and slapping, and end with assaults using a knife or gun. The desirability of distinguishing the more severe acts of violence from the others is mentioned in the original article on the CTS (Straus, 1979:77) but the importance of doing so is not given adequate attention. Moreover, the only normative data presented in that article are based on a simple sum. Consequently, two slaps are counted the same as two knife attacks. This omission is partly rectified in a book on the first National Family Violence Survey (Straus, Gelles, and Steinmetz, 1980). Throughout that book, separate rates are given for "severe violence." However, even the Severe Violence index may not be satisfactory because it also includes acts that differ greatly in their seriousness. Consequently a later section of this chapter describes three other methods for taking into account differences in the severity of the violence items.

Context Is Ignored

One of the most frequent criticisms of the CTS is that it counts acts of violence in isolation from the circumstances under which those acts occur. Who initiates the violence, the relative size and strength of the persons involved, and the nature of their relationship affect the meaning and consequences of the act. Hitting someone with a stove poker in self defense is different than the same physical act as an unprovoked assault. A punch by a 120 pound woman will, on the average, have different consequences than a punch by a 175 pound man.

These criticisms are based on a misunderstanding (or disagreement with) the approach to research design which underlies the CTS. That approach assumes that "context" is

extremely important and that it is essential to measure the context variables separately from the violence variable. That is why verbal aggression is kept separate from physical aggression in the CTS. Indeed, each of the three scales is context for the other (see Straus, 1974 for an example). The view that research using the CTS ignores context is also based on methodological errors. One of these errors is the methodological monism (discussed in a footnote earlier in this chapter) which rejects all quantitative research, and therefor all research using the CTS. The second error is the assumption that quantitative research does not and cannot take context variables into account. In fact, the methods for doing so are highly developed and widely used, but go under such labels as "interaction effects" and "specification" (see Baron and Straus, 1987 for an example).

Why Context Should be Assessed Separately. There are at several reasons for separating the measurement of the acts of violence and other tactics from the measurement of so-called context variables.

First, the number of context variables is so great that it would make an impossibly long and cumbersome instrument to try to include them all.

Second, many of these context variables require the development of sophisticated measures before they can be adequately measured. The design of the CTS does not restrict those using it to a particular method of measuring a context variable. It permits users to choose from instruments which are currently available or to develop their own measure of a context variable.

Third, and most important, combining the CTS acts with the context variables assumes a certain relationship, rather than allowing the extent to which there is such a relationship to be the subject of empirical investigation. For example, if injury is part of the CTS violence measure, it precludes investigating the extent to which the assaults that are measured by the present version of the CTS result in injuries. Although this is the most important reason for measuring context variables independently from assaults, it will not be discussed further because of space limitations and because readers can consult the analysis in Gelles and Straus (1979).

Methods Of Combining Context Measures With The CTS. Although the CTS deliberately does not include so-called context variables, as mentioned above, it is intended to provide the framework for obtaining information on whatever context variable or variables are needed for a specific study or clinical purpose. Almost any context issue can be investigated by adding questions which provide the needed information on the circumstances surrounding the violent incidents. If, for example, one wants to investigate the extent to which alcohol is involved in assaults on a spouse, the interview can be designed to go back over each CTS item that was reported as occurring and ask if the respondent and his or her partner had been drinking at the time, how much they had drunk, etc. The same principle can be applied to investigate whether the violence was "instrumental" or "expressive," how the respondent felt about the violence, who struck the first blow, and any number of other context and [illegible] variables.

[illegible]cation on this method of obtaining context and meaning data is the amount of [illegible]me. If for example, a respondent reported ten violent incidents during the [illegible] additional questions would have to be asked ten times. If this exceeds the available interview time, an alternative method is to ask the context questions in relation to the most recent occurrence of the most severe type of assault which was reported in response to the CTS violence items. This procedure was used in the 1985 National Family Violence Resurvey to obtain data on who initiated violence, on injury, and on drinking at the time of violence (see Kaufman Kantor and Straus, 1987 for an analysis of the data on drinking as a context for violence).

Ignores Who Initiates Violence And Injuries

Some feminist critics of the CTS have been outraged by the revelation that, within the family, women have approximately the same rate of physical assault against partners as men. They are unwilling to accept the empirical evidence from at least a dozen studies (see Straus and Gelles, 1988 for a partial review). They attempt to reconcile their denial of female violence with the empirical data by attacking the integrity of the instrument and those who use it, even to the point of implying deliberate distortion of the data (see the introduction to Part I).

Two of key points of attack on CTS are part of the "context" issue: that the CTS fails to take into account who initiated violence between a couple and that it does not indicate the extent to which women are injured by assaults by their partners. Feminist critics of the CTS seem to assume that domestic violence and injury are almost synonymous with male initiation and female injury, and that these facts are covered up by the design of the CTS. My view is exactly the opposite: that if the measurement of the acts were to be combined with the assumed context, makes it impossible to prove or disproving those assumptions. Both of these important context variables will be used to illustrate the importance of measuring context variables separately.

Initiation of Violence. Analyses of the 1972 and 1975 studies using the CTS (Straus, 1973, 1974; Straus, Gelles and Steinmetz, 1980) and an independent study of a Delaware sample by Steinmetz (1977) revealed the surprisingly high rate of wife-to-partner violence, which has since been confirmed by many studies (Straus and Gelles, 1988). Straus (1980) attempted to determine how much of this was self-defense from assaults initiated by men. This analysis found that, among those couples reporting one or more violent incidents, in about half the cases both partners engaged in assaultive behavior; in about one quarter of the cases the husband committed the only violent acts, and that in about one quarter of the cases the wife committed the only violent acts. These findings suggested by a minimum of one quarter of all marital violence is initiated by wives.

The 1985 National Family Violence Resurvey approached this issue more directly by asking who initiated the most recent occurrence of the most severe of the assaultive acts in the CTS. According to the husbands, they struck the first blow in 44% of the cases, the wives hit first in 45% of the cases, and the husband could not remember or disentangle it in the remaining 11% of cases. According to the wives, husbands struck the first blow in 53% of the cases, wives in 42% of the cases, and the remaining 5% of wives could not disentangle who hit first. These findings show that violence by wives cannot be dismissed on the grounds that it is in self-defense or in retaliation, and certainly provide no basis for the implication that the CTS overstates violence by women.

Injury. Feminist critics of the CTS argue that it overstates the violence of women and underestimates the degree to which women are victimized by assaults on the part of their partners by measuring violence as assaultive acts rather than by injuries. Child welfare groups have also criticized the CTS for measuring child abuse by assaultive acts on the part of parents, rather than on by whether a child is injured. Since injury is extremely important, why is the CTS based on acts rather than injuries? The main reasons are outlined below.

Consistent With Legal Usage. The first reason for basing he use of acts rather than injuries is consistent with the legal definition of assault, which uses acts rather than on injuries as the criterion. As Marcus (1983) puts it: "Physical contact is not an element of the crime...;" or as the Uniform Crime Reports puts it: "Attempts are included [in the tabulation of aggravated assault] because it is not necessary that an injury result..." (U.S. Department of Justice, FBI, 1985:21). However, many (or most) family violence researchers believe that the legal criterion is injury.

Injury And Assault Loosely Linked. A second reason for making acts the primary measure of intra-family violence is that the connection between assaults and injury is far from direct. A husband who "only" slapped his wife may seriously injure or kill her if she falls and hits her head on a protruding object; and a husband who intends to kill and goes after his wife with a knife will, in most instances, fail to achieve that objective. This is the basic reason why the legal definition of assault is based on the act carried out, rather than whether an injury was produced.

Reflects Humane Values. Consistency with legal usage, while having certain advantages, need not be a deciding factor. There have to be additional reasons for focussing on acts, despite the great importance of injuries. One of these additional reasons can best be summarized as a moral or humane values criterion. I take the view that it should not be necessary for a spouse or child to be injured to classify behavior as abusive. From the perspective of this value orientation, punching a spouse or a child is inherently wrong, even though no injury occurs.

Ignores Psychological Injury. Another reason for using acts to measure of child abuse and spouse abuse is that some of the most serious injuries are likely to be psychological, and therefore not easily observed. For children this can include low self-esteem, aggressiveness, and delinquency (Hotaling and Straus, 1988); and for wives "learned helplessness," depression, and suicide (Gelles and Straus, 1988). In a typical investigation, it is possible to include measures of only a few of the possible psychological injuries, thus almost inevitably underestimating the extent of psychological injury resulting from physical abuse.

Provides A More Realistic Measure of the Problem. Another reason for the use acts as contrasted with injuries as the measure of intra-family violence grows out of the fact that most assaults, even severe assaults, do not result in an injury which needs medical attention. In the case of physical child abuse for example, more than 95% of the cases are children who are being seriously assaulted, but who nonetheless do not require medical care for the physical injuries (Garbarino, 1986 Runyon, 1986). In the case of battered spouses, the 1985 National family Violence Resurvey found that there were no injuries requiring medical attention in 99.3% of the cases of minor violence and in 95.5% of the cases involving a severe assault. Thus statistics based on injury would underestimate the extent of spouse assault by a huge amount.*6

The same considerations apply to physical abuse of children, and even more to sexual abuse of children. These are inherently wrong, regardless of whether the child physically or psychologically injured. Many children are kicked or thrown against a wall every day in every American state, but only a small proportion will sustain a concussion or other injury serious enough to require medical attention. Consequently, if a medically treatable injury were to be one of the criteria for child abuse, the true incidence of child abuse would be underestimated almost as much by the CTS as by the official statistics.

More Useful For Planning Prevention Programs. Attempts to measure intra-family violence on the basis of injuries, either physical or psychological, will produce statistics indicating a vastly lower rate of violence than actually occurs. This is not merely a matter of record keeping. It denies to those who formulate and implement public policy a realistic assessment of the extent of the task, and therefore impedes planning and implementing programs of primary prevention.

Despite these arguments, for certain purposes, such as estimating the need for emergency medical services by abused children or wives, data on injuries is the most appropriate measure. In addition, it is important to recognize that the use of assaultive acts rather than injuries as the criterion for measuring violence poses a serious problem for communication of research results with the general public. The public tends to think of child abuse and wife-beating phenomena as indicating an injured child or spouse. Researchers who use the CTS with a view to providing information relevant for public policy formation need to keep this problem mind to avoid serious misunderstandings.

"Minor" Versus "Severe" Categories Distort Gender Differences

The physical violence items in the CTS are classified into two levels of severity: "minor violence" (items K, L, and M, which includes: pushed, grabbed, shoved, slapped, and threw things at the other person), and "severe violence" (item N on, which include kicked, bit, punched, hit with an object, beat up, choked, threatened with a knife or gun, used a knife or gun). The distinction between the two levels of violence is based on the assumption that the items in the severe violence category are more likely to cause an injury which requires medical treatment.

The original purpose of this distinction was to permit an estimate of the extent of "child abuse" and "wife-beating" in the United States, and to identify such cases for further analysis. The need for this distinction is clearest in the case of child abuse. The criterion for child abuse is not simply hitting a child; rather it requires a level of assault which does or is likely to physically injure the child, and this is what the severe violence items are intended to represent.

In the case of violence between spouses, the common law right of husbands to "physically chastise an errant wife" (Calvert, 1974; Straus, 1976) no longer exists, but (at least at the time the CTS was developed) the public, in effect, still made that distinction. "Only" slapping or shoving a wife is not "wife-beating" as most people see it. Consequently, the distinction between the minor violence and the severe violence items is also useful in identifying cases which approximate the concept of wife-beating. This enables the incidence rate for wife-beating to be estimated, and also permits a researcher to distinguish between spouses who are victims of minor violence versus those who have been more severely assaulted.

Although the distinction between minor violence and severe violence is important and probably necessary, there are two related problems, both of which grow out of the fact that men, on average, are three inches taller than women, weigh 28 pounds more, and have better developed muscles.

Understates Male Violence. The basic problem is that a slap or a punch by a 190 pound man is likely to be much more severe than a slap or a punch by a 125 pound woman, yet the CTS counts them as though they were the same. Moreover, being repeatedly slapped is highly abusive and dangerous, but the standard scoring of the CTS counts that as minor violence.

In principle it is possible to score the CTS in ways which correct the underestimation of male violence. To correct for differences in the height and weight of each spouse, this information can be obtained, and the ratio of the height and weight of each spouse to the other spouse can be used to weight the CTS scores. The score could be increased by the percent to which the height and weight of the respondent exceeded that of his or her spouse.

To correct for repeated slapping, a respondent who exceeds a certain level could be classified as having engaged in severe violence, even though he or she may not have committed one of the acts in the severe violence list. This procedure used by Hotaling and

Straus (1988) to produce an improved measure of child abuse. The results of the analysis using this measure, however, were almost identical to the results of measuring child abuse using only the severe violence acts.

Overstates Severe Violence By Women. A frequent scenario in marital violence is that the husband is "only" slapping or shoving. Fear or anger then leads the wife to attempt to even the odds by kicking, punching, or using an object. In the CTS violence scores, the husband is counted as having engaged in minor violence, whereas the wife is counted as having engaged in a severe assault. Critics of the CTS argue that this artificially overstates violence by women.

In my opinion, the real meaning of this criticism is that the "context" (i.e. being attacked by someone of greater size and strength) justifies the use of these acts by women. To the extent that women use acts of severe violence in self-defense, that is correct. To the extent that women are retaliating, the self-defense justification is not present.

Does Not Measure Process And Sequence

The CTS is basically intended to measure the extent to which each of the three tactics were used during a given time period, such as the preceding year or month and therefore does not provide information on the specific interaction sequence which was involved in the use of any of the tactics in the scale. There are, however, ways in which the CTS can be used to investigate processes and sequences, such as what leads to escalation into violence. One method is to readminister the CTS at specified intervals, such as months, quarters, or years and then use standard methods of panel analysis. Another method is to supplement the standard CTS items with questions on the sequence of events. For example, after completing the CTS, respondents can be asked about the sequence of events which led up to the most coercive act which was reported to have occurred and to provide further information about the nature of the conflict and how it was ultimately resolved.

Does Not Identify A Clinically Meaningful Population

The findings of research based on administration of the CTS to random samples of the population may be misleading if the goal is to uncover relationship which can be translated into treatment and prevention program steps. This problem can arise if the relevant "clinical" populations (such as women who seek assistance from a shelter) are qualitatively different than women who are classified as being abuse victims on the basis of reporting having been victims of one or more of the "severe violence" acts in the CTS. A similar problem occurs with community epidemiological surveys of alcoholism and mental illness. As in the case of assaulted women, the population classified as "alcoholic" or "depressed" is much greater than the population being treated for these problems. Moreover, as might also be the case for family violence, many of the social and psychological characteristics of persons in treatment for alcoholism and depression are quite different than the characteristics of the populations identified as alcoholic or depressed in community surveys (Room, 1980). This might explain the discrepancy between the high rate of violence by wives in random sample studies, and the low rate of such violence in shelter client samples.

Even if shelter clients are not qualitatively different, the average amount of violence experienced by these women is much greater than the experience of wife-beating victims identified by community surveys using the CTS. For example, the mean number of assaults experienced by female victims of spouse-assault in the 1985 National Family Violence Research was "only" 5.5 compared to 29?? for the shelter clients studied by Giles-Sims (198??) or ?? for the shelter clients studied by Okun (19??). Moreover, as Oppenheimer (1987) has recently shown, it is difficult to select a directly comparable

subset of spouse-assault victims from the 1985 survey because, out of the 622 assaulted women, only 20 experienced 29?? or more assaults during the year of the survey

These differences raise serious questions about the applicability of survey findings using the CTS to clinical populations, and about the reasons why so few cases which are comparable to a clinical population are identified by the CTS. Perhaps the incidence rate for such high levels of violence is extremely low, and therefore too few such cases are identified even by a sample as large as 6,002. A more plausible explanation is that the extremely high violence cases are under-represented because they are a more transient and lower income population and therefore more difficult to contact; or because they make up a disproportionately large part of the eligible respondents who refused to be interviewed. Finally, it should be noted that these are problems associated with community surveys, not with the CTS per se. Indeed, the best evidence on this issue comes from the application of the CTS to clinical samples, as in the research of Giles-Sims (19??) and Okun (19??).

THE CTS AS A MEASURE OF CHILD ABUSE

The CTS measure of physical child abuse has made possible some important advances in knowledge of the incidence of child abuse (Gelles, 1978, Straus, 1983; Chapter 7 of this book), risk factors associated with child abuse (Straus, 1979; Straus and Kaufman Kantor, 1986), effects of physical abuse on the child the child (Hotaling and Straus, 1988) and change over time in incidence rates (see Chapter 4). Nevertheless, the CTS has been used much less often to study violence by parents than it has been to study violence by spouses. This section describes the indexes which have been developed to measure parental violence, identifies certain shortcoming of the CTS for this purpose, and suggests methods of correcting these shortcomings.

The CTS Physical Punishment and Physical Abuse Indexes

The Overall Violence Index (sum of CTS items K to S in Form R and items K to R if form N) is not very useful as a measure of parent-to-child violence because in combines normatively permissible acts of violence (slapping and spanking) with acts which are not permissible and highly dangerous (kicking, burning, attacks with weapons, etc.) To deal with this problem, four indexes have been developed, and are described in the next section.*7

The Minor Violence Index As A Measure of Physical Punishment. The Minor Violence index combines items K, L, and M of Forms N and R (threw things at the child, pushed grabbed or shoved, slapped or spanked). It can be used as a measure of "physical punishment." However, the ambiguity of the concept of physical punishment needs to be kept in mind. The are no standard legally recognized criteria for physical punishment, nor even a requirement that the child not be physically injured (see supreme court case???). In addition, as is generally the case with the CTS violence items, we do not know the intensity of each of the acts. For example, slapping can range from something that causes only a minute amount of pain to a blow which causes a hemotoba, and the object thrown can range from a pillow to a rock. It would take a much longer instrument than the CTS to deal with these problems. Despite these shortcomings, the research reported in chapters 6, 7 and 20 shows the utility of the CTS as a measure of physical punishment.

Physical Abuse. From a strictly scientific perspective it would be preferable to avoid the term "abuse" because it is a political and administrative term as much or more than a scientific term. Moreover the concept of "abuse" is a source of considerable difficulty and confusion because it covers many types of maltreatment in addition to acts of physical violence, and because there is no consensus on the severity of violence required for an act to be considered "abuse." Despite this, "abuse" will be used for two reasons. First, it

is less awkward than terms such as "Very Severe Violence Index." Second, abuse is such a widely used term that avoiding it creates communication difficulties.

As suggested above, what constitutes abuse is primarily a matter of social norms and administrative practice. Spanking or slapping a child, or even hitting a child with an object such as stick, hair brush, or belt, is not "abuse" according to either the legal or informal norms of American society, although it is in Sweden and several other countries (Haeuser, 1985). The CTS operationalization of child abuse attempts to take such normative factors into consideration by giving users the choice among two measures, each of which draws the line between physical punishment and physical abuse at a different point.

The two indexes used to measure child abuse each consist of acts that have a relatively high probability of causing an injury. Thus, kicking is classified as severe violence because kicking a child has a much greater potential for producing an injury than an act of "minor violence" such as spanking or slapping.[8]

Very Severe Violence. This measure of physical abuse of children focuses on the use by a parent of any of the following CTS items, each of which are almost universally regarded as indicators of "abuse" N. Kicked/bit/hit with fist; P. Beat up; Q. Burned or scalded (Form R only), R. Threatened with a knife or gun; and S. Used gun or knife. The Very Severe Violence index is probably the most useful for administrative purposes because it comes closest to the type of cases which are classified as physical abuse by the Child Protective Service agencies of each of the states.

Severe Violence. Although the Very Severe Violence index may be the most suitable measure for purposes of estimating the rate or number of children in need of official intervention, it underestimates the rate and number of children who are being severely assaulted because it excludes CTS item O "hit or tried to hit with something." The something is usually a traditionally sanctioned object such as a hair brush or belt, and this is the reason it was omitted from the Very Severe Violence Index. However, if the object of an attack with a hair brush or belt were another adult, it would be considered a serious assault, and one can argue that this same standard should apply to children. The Severe Violence index does just that. The rate of physically abused children, when measured by the Severe Violence Index, is almost five times greater than when the Very severe Violence Index is used (see Chapter 5).

Severity Weighted Parent Violence Scale. This scale takes into account both the frequency and the severity of assaults on children by their parents. Severity (in the sense of injury producing potential) is indicated by a weight of from one to eight for items K through S. The scale is computed by multiplying the weight for each item by the frequency with which it occurred, and summing the product. This procedure assigns a much higher score to children who are attacked with a weapon than to those who are slapped or spanked, and at the same time allows for the fact that very frequent slapping or spanking is abusive. Since the Severity Weighted Scale is a continuous variable, it is difficult to know where to set the cutting point for a level of violence that should be considered as abusive. There is an obvious need for research on this issue.

Under-Utilization of The CTS In Child Abuse Research

Despite the many research possibilities made possible by the four indexes described in the previous section, researchers who are not associated with the Family Research Laboratory of the University of New Hampshire, have used the CTS to study child abuse much less often than they have used it to measure spouse abuse. Specifically, while more than 40 other investigators have used the CTS to measure assaults against partners in a dating, cohabiting, or marital relationship, only seven studies not connected to the Family Research Laboratory have used the CTS as a measure of child abuse (see Chapter, Table 2).

The reasons why relatively few studies of child abuse have used the Conflict Tactics Scales fall into two categories. One category consists of problems associated with the compartmentalization of research on child abuse and spouse abuse, each of which tends to be studied by a different group of researchers who are not familiar with research on other aspects of family violence (Finkelhor, 1983). These will be called "institutional impediments." The other category consists of shortcomings of the CTS as a means of measuring physical abuse of children.

Institutional Impediments

1. Differentiated Communication Channels. The 1979 article which has served as the "test manual" for this instrument, although it describes the method of computing a measure of child abuse, devotes more attention to use of the CTS in studying marital violence. For example, the sample page giving the CTS items gives the wording used when these items refer to a couple, rather than to parents and children. In addition, this article was published in a journal which is by researchers interested in marriage and the family, rather than in a journal such as Child Development where it would more likely have come to the attention of child abuse researchers.

2. Alternative Data Available. Investigators concerned with child abuse had alterative sources of data: the cases reported to Child Protective Services in each of the states under the mandatory child abuse reporting laws (American Association For Protecting Children, 1986), and the so-called "National Incidence Study" of child abuse (National Center On Child abuse and Neglect, 1981). Moreover, they tended to prefer these alternatives because each counted cases known to child welfare professionals and may therefore have been regarded as "real cases."*9

3. Measures Acts Rather Then Injuries. Child Protective Services and other social welfare workers tend to emphasize injuries as the criterion for abuse. The relation between acts and injury based measures, and the importance of using a measure based on acts (such as the discussion in this chapter) is not part of the original article on the CTS.

4. Requires A Decision About What Constitutes Child Abuse. The CTS acts range from spanking to attacks with weapons. It therefore forces the user to draw a line between physical punishment and abuse, which is difficult and will be criticized at no matter what point the line is drawn. This problem is avoided (because it is left to case workers to interpret the often vague statutes) if the "official statistics" on child abuse are used. Nor does it occur in research on marital violence because there is wide consensus that any hitting is abuse.

Shortcomings Of The CTS For Measuring Child Abuse

The original version of the CTS (Form A) was designed to measure violence between parents and their teen age children and violence between the parents as reported by the teen age child. The next revision (Form N) was used in a survey which was confined to children age 3 and older. However, physical abuse of children occurs at least as often among infants and toddlers (Wauchope and Straus, 1987) and the CTS has important shortcomings a measure of physical abuse for child this young, including the following:

1. Reasoning Items Not Appropriate. The versions of the CTS developed to date begin with items that are not considered appropriate for infants and one-year-olds; specifically, the items in the Reasoning scale, such as "Discussed the problem calmly."

2. Minor Acts Of Violence For A Six Year Old are Dangerous For A Six Month Old Child. Spanking or shoving a child of six is appropriately labeled as minor violence, but can be

life threatening for an infant. The present procedures for classifying an act as abusive and scoring the child abuse scale do not take that into account.

3. A Different List Of Acts is Needed For Infants And Toddlers. Some of the acts at the severe end may be redundant, for example threatening an infant with a knife or gun. On the other hand, acts which are extremely dangerous to infants, such as shaking, are not part of the CTS list of violent acts.

4. Age-Specific Norms Lacking. The table of norms published as part of the 1979 article on the CTS does not provide separate figures for children of different ages, yet this is a highly age-related phenomenon (Wauchope and Straus, 1987).

In view of these problems, and in view of the wide belief that one must use an instrument in unmodified form or not at all, it is not surprising that the CTS has been used much less often to measure child abuse than other aspects of intra-family violence. However, each of the problems listed above can be dealt with by relatively straightforward modifications. We have already made a first step in that direction and encourage others to do the same. For example, a recent survey conducted for the New Hampshire Task Force on Prevention of Child Abuse by Moore and Straus (1987) dropped the reasoning items when the referent child was an infant or a one year old. In the future we plan to substitute age-appropriate items such "Picked up the child and hugged him/her." This can be done by building in to the interview design "filters" or "branching" instructions directing the interviewer to ask one version of the questions if the child is a certain age and anther version if the child is another age. This is a standard and well proven practice in survey research.

ALTERNATIVE MEASURES OF INTRA-FAMILY VIOLENCE

Although the evidence to be presented below shows that the CTS is a reasonably reliable and valid means of determining the nature and extent of intra-family violence, a number of modifications as well as completely different methods have been used.

Single Questions, Short Forms, And Modifications

Different studies have added and subtracted items and the results seem to be roughly consistent with the results from use of the CTS. Illustrative of this is the study by Scanzoni (1978) who asked a sample of 321 women "How often does his refusal to listen, or do what you want him to do, make you so angry that you: Swear at him; Try to hit him; Ignore him or give him the cold shoulder, stamp your feet or hit something like a table or a wall; Do something to spite him." Fourteen percent of the women indicated that they had tried to hit the husband. Since this figure referees to the entire period of the marriage, not to the immediately preceding 12 months, it cannot be compared directly to the 12 percent of women in the National Family Violence Resurvey who reported having hit their husband in the past year. However, it does indicate that even relatively simple techniques can be used to obtain data on marital violence.

Other researchers have added items to the CTS, and some have dropped items. It has been used in the form of a questionnaire (Form A, Straus, 1973, 1974), personal interview (Form N, Straus, Gelles, and Steinmetz, 1980) and telephone interview (Straus and Gelles, 1986).

The CTS has also been used to measure conflict tactics in a wide variety of role relationships, including parent-child, child-child, child-parent, husband-wife, wife-husband, and also men and women dating and cohabiting partners. The respondent has also varied, including children describing their own behavior and that of their parents; and husbands, wives, and dating partners, describing the tactics used by themselves and by

their partner. Afford (1982) used a modification of the CTS to obtain information on conflict tactics used in 26 different role-relationships, both familial and non-family.

It is clear that the CTS can be modified and used in a wide variety of ways. However, if the intent is to measure conflict tactics as defined in Chapter 3, and as summarized in the introduction to this chapter, two principles need to be followed: (1) Include only acts of overt behavior. Beliefs and attitudes about violence, for example, are extremely important, but since they are far from the same thing as actual violence (Dibble and Straus, 1980), they should be measured by a separate scale, such as the one developed by Sanders et al (1987). (2) Do not mix tactics, either in the phrasing of an item, or in combining items to computing a scale. Alford's "Fight 3" category, for example, combines "yell, scream, push, shove, hit, throw things, and make extremely insulting references" (Alford, 1982). Consequently it is impossible to differentiate between parents or spouses who use verbal aggression but who do not physically assault their child or spouse, from those who are both verbally and physically aggressive.

Child Abuse Measures

Although as mentioned in a previous section, the CTS has certain deficiencies as a measure of physical abuse of children (some of which will be rectified in a study now in the planning stage), no satisfactory alternatives have yet been developed. This section briefly reviews some of the other methods which have been used in research on physical abuse of children:

Child Protective Services Rate. Annual statistics are compiled on the number of child abuse cases reported to the Child Protective Services under the mandatory reporting laws which are in effect in all the states (American Association for Protecting Children, 1986). These are the most widely known and widely accepted statistics on child abuse in the United States. The 1984 rate for physical abuse was estimated by Straus and Gelles (1988) to be 0.68 per hundred children. By contrast, the CTS rate is 2.3 percent for "Child Abuse-1" and 11 percent when using the "Child Abuse-2" measure (see section on scoring methods for the difference between these two measures). Thus the CTS rate for the more severe assaults on children is 3.4 times greater than the CPS rate, and the CTS rate for the more inclusive measure of physical abuse is 16 times greater than the CPS.

National Incidence Study. This study attempted to find out about all known cases of child abuse in a sample of 26 counties surveyed in 1980 (National Center on Child Abuse and Neglect, 1981). The procedure went beyond the official reporting system described above by also collecting data on cases known to personnel in community institutions (schools, hospitals, police, courts), irrespective of whether the cases had been officially reported. It produced a physical abuse rate of 3.4 percent children. This was about 26% higher than the rate of officially reported cases of physical abuse in 1980 (the CPS rate has gone up tremendously since then because the new attention to sexual abuse has produced an influx of cases), but is still much lower than the rate from the surveys using the CTS.

One way to interpret the differences between the rates produced by the CTS and those produced by the two methods just described is to say that comparison of these two rates with the rate obtained using the CTS in two national surveys shows that there are from several times more physically abused children in the United States than receive help. The same point can also be expressed in the terminology used by epidemiologist, i.e., the discrepancy between the Child Protective Services rate and the CTS rates of child abuse occurs because each measures a somewhat different phenomena. The rate obtained by counting the number of cases known to Child Protective Services and other human service professionals is more a measures of intervention or treatment than an incidence rates (see Straus and Gelles, 1986 for further explanation).

Prediction Instruments. There have been a number of instruments developed to identify parents who have a higher than normal risk of abusing their children. These instruments differ from each other in a number of ways which cannot be discussed here because of lack of space. For example, the Adult-Adolescent Parenting Inventory (ASPI) of Bavoleck (1984) emphasizes the overt behavior of the parent toward the child and includes sub-scales for use of physical punishment, inappropriate expectations, lack of empathy, and role reversal. The Child Abuse Potential Inventory (CAP) of Milner, 1986) on the other hand emphasizes the personality of the parent and includes sub-scales for Distress, Rigidity, Unhappiness, Problems with child and self, Problems with family.and Problems from others. Other instruments are reviewed in Schneider, Helfer, and Hoffmeister (1980).

Despite occasional use of terminology which some might suggest otherwise, these instrument do not measure the occurrence of acts of physical abuse. For example, Milner's CAP results in an overall measure called the "Abuse Scale." However, none of the items refer to physical abuse, nor should they. This is because the instrument is a tool for prevention work, and is intended to identify parents at risk of being abusive before it actually occurs.

There is a certain irony in the fact that these instruments were developed for use in programs designed to provide services which can aid high risk parents avoid having the risk becoming a reality. The irony is that these instruments are more appropriate for research than for prevention programs. The problem is not deficiencies in the instruments per se. The CAP, for example, exemplifies sound psychometric techniques, including validity studies presented with commendable clarity in the test manual. The problem is that these instruments run up against the bed rock of the high incidence of "false positives" inherent in predicting any phenomenon with a low incidence rate (Light, 1973). For example, Milner administered the CAP to abusing parents and to a comparison group. The discriminant analysis correctly classified 93% of parents. Assuming 93% accuracy and an incidence of clinically identifiable child abuse of 2%, application of the CAP to all parents in a community would correctly identify two out of every 100 children as at high risk of abuse and incorrectly identify seven. Thus, 78% of the cases assessed would be falsely labelled (cf. Light 1973, p.571 for estimation procedures).

Parenting Behavior Inventories. A somewhat related type of measure are instrument designed to identify parents who use child rearing techniques which are known or believed to be antecedents of physical abuse

Medical Diagnosis. The paper of C. Henry Kempe et al (1962), which helped mobilize medical and public attention on child abuse described the use of x ray and other medical diagnostic techniques to distinguish between children who are the victims of accidental injury and those who are the victims of inflicted injuries. Studies of children admitted to emergency departments of urban hospitals for accidental injury suggest that about 10% of such children are abuse victims. However, other studies (reviewed in Pless et al, 1987) have produced far lower figures. Regardless of which rate is correct, protocols for evaluating children admitted to emergency rooms (such as the SCAN Sheet described in Pless et al, 1987) are extremely important because they can identify children who are in the greatest need for protective services. Unfortunately, 30 years after Kempe's paper, only a minority of hospitals consistency uses such protocols.

On the other hand, even if all hospitals were to use a child abuse detection protocol, it would still leave undetected more than 95% of physically abused children. This is because, as noted in the previous discussion of why the CTS is based on assaults rather than injuries, less than five percent of child abuse cases known to Child Protective Services involve an injury that is serious enough to need medical attention. Most physically abused children (as contrasted to the cases which make front page headlines) involve repeated severe beatings, but not injuries. These are children and parents in dire need of assistance, but not medical assistance. Consequently, hospital based detection methods are not a substitute for an instrument such as the CTS. Instruments such as the

CTS are essential for epidemiological surveys, for testing causal theories, and for program evaluation research.

Spouse Abuse Measures

The CTS has been most widely used and most widely criticized as an instrument to measure violence between spouses. However, as in the case of instruments to measure child abuse, no satisfactory alternative has as yet been developed.

Alford (1982), for example developed an instrument to measure "dispute styles" and which he describes as "similar in some respects" to the CTS. This instrument has some useful features, such as measuring the degree of intimacy of the relationship and the frequency of contact with the other person in the relationship. However, as explained above, it confounds verbal aggression and physical aggression in a way which makes it impossible to determine a violence rate or violence score.

The Index of Spouse Abuse (Hudson and McIntosh, 1981) was developed with commendable use of appropriate statistical techniques, such as factor analysis, and each of the two sub-scales (Physical Abuse and Non-Physical Abuse) have high reliabilities. However, this instrument suffers from the same fundamental problem as Alford's measure of dispute styles: it confounds physical aggression with other variables. Inspection of the items in the Physical Aggression scale of the Index of Spouse Abuse (as given in the footnote to Appendix 1 in Hudson and McIntosh) shows that only four of the eleven items are acts of physical aggression. The remaining items are certainly abhorrent behavior (e.g. "My partner becomes surly and angry if I tell him he is drinking too much"), but are not acts of physical aggression. Thus, if the instrument is scored according to Hudson and McIntosh's directions, there is no way of differentiating a violent spouse from one who is verbally abusive, but not violent.

National Crime Survey. This survey provides the most extensive data available on assaults between members of the same household because it is based on a sample of approximately 60,000 households and is repeated annually. It is also an extremely carefully conducted survey. Nevertheless, the National Crime Survey rate is drastically lower rate of spouse abuse found by the National Family Violence Resurvey: two tenths of a percent (Gaquin, 1977-78). By comparison, the CTS rate of 16.1 percent is more than 50 times higher.

The huge discrepancy between the National Crime Survey (NCS) rate of .2 and the CTS rate of 16.1 raises the question of why the NCS rate is so low. The most likely reason for the tremendous discrepancy lies in differences between the context of the NCS versus the other studies. The NCS is presented to respondents as a study of crime, whereas the others are presented as studies of family problems. The difficulty with a "crime survey" as the context for determining incidence rates of intra-family violence is that most people think of being kicked by their spouse as wrong, but not a "crime" in the legal sense. Thus, only a minute proportion of assaults by spouses are reported in the National Crime Survey.

Emergency Room Protocols. Many victims of family violence present to a hospital emergency room for treatment. However, the fact that the injury was intentional is usually not divulged. Moreover, even when it is divulged, or there are indications of intentional injury, it tends to be ignored (Stark, Flitcraft, Zuckerman, and Gray, 1981). Protocols have there fore been developed to identify battered women so that more appropriate treatment and referral can be provided (McGrath, et al., 1980). One such protocol was used to examine case records at Yale-New Haven hospital and concluded that about 20% of female trauma cases were the result of intentional injuries (Stark et al. 1981). These findings indicate that emergency room protocols are important procedures for purposes of being able to provide treatment and referrals and should be much more widely used.

Emergency room protocols can also be used to identify cases for research, particularly, in-depth analyses and longitudinal analyses. However, since only a small fraction of battered women are injured seriously enough to require medical attention (see discussion of injury earlier in the chapter), incidence rates based on such cases will seriously underestimate the prevalence of wife-beating. Nevertheless, if one is careful to define the phenomenon being measured as "women who are beaten seriously enough to require medical treatment" and if the fact that this level of injury is rare even among severely assaulted women is made clear, this would be an extremely useful figure in any community.

Randomized Response Technique. This technique has been highly touted for use in surveys on sensitive subjects (Kolata, 1987), but has not yet been extensively tested in measuring physical assault within the family. The technique was first developed by Warner (1965) and later modified by others. In its most commonly used format, respondents are asked two unrelated questions, one sensitive and the other not, and then given some randomizing device (like flipping a coin) for deciding which question to answer. The researcher does not know which question the respondent is actually replying to but does know the overall odds with which each question will be answered. If the researcher also knows the prevalence of the non-sensitive characteristic (because it is fixed in the population,like being born in September, or because it can be determined from other sources), then the prevalence of the sensitive characteristic can be readily calculated. The theory, the technique is attractive because the researcher can promise the respondent complete anonymity of response. (Detailed guides to use of the technique is Tracy & Fox, 1986.)

The technique has been used at least twice in regard to child abuse. Zdep and Rhodes (1976) estimated that 15% of a national probability sample of 2000 responded "yes" to the question, "Have you or your spouse ever intentionally used physical force on any of your children in an effort specifically meant to hurt or cause injury to that child?" Finkelhor & Lewis (1987) obtained estimates of 17% and 4% to split samples of 1313 in a national probability survey in response to the question "Have you ever sexually abused a child at any time in your life" However, the divergence of their two estimates and the absence of associations with any other expected characteristics of sexual abusers led Finkelhor & Lewis to conclude that the estimates probably were not valid. Randomized response technique does offer some intriguing possibilities for family violence researchers, but more testing is required before concluding that it can produce valid and reliable results.

RELIABILITY AND VALIDITY

Reliability

Six studies assessing the internal consistency reliability of the CTS have been located and are summarized in Table 2. Comparison of the columns for the scales measuring the three tactics shows that the Alpha coefficients are low for the Reasoning scale, higher for Verbal Aggression, and highest for the Violence scale. The differences are largely a function of the number of items in each scale. The reasoning scale in Forms N and R have only three items. Consequently, as suggested in the earlier article on the CTS (reprinted as Chapter 3), for research in which measurement of reasoning is an important focus, the reasoning items dropped from Form A (because of the interview length limitations of the studies using Forms N and R) should be restored to the version used in any such studies. In fact, still other items can be added to both the Reasoning and the Verbal Aggression scales to the extent that they figure importantly in the study for which the CTS is used.

(Table 2 about here)

Factor Structure Of the CTS

At the time the CTS was developed, the three tactics which served as the basis for designing items to be included were hypothesized dimensions. Several investigators have since confirmed the existence of these dimensions though the use of factor analysis. To the extent that factor analysis identifies these dimensions, it supports the original conceptualization. In addition, the identification of orthogonal factors provides evidence of the "discriminant validity" (Fisk and Campbell, 19??) of the three tactics.

Straus Analyses. Chapter 3 reports the results of a factor analyzed the data from Form A, completed by a sample of 385 college students with reference to the tactics used by their parents during the last year they lived at home. The results correspond with the theoretical grouping of the items: the analysis produced three factors which correspond to the three hypothesized dimension: reasoning, verbal aggression, and physical aggression (violence). The factor loadings for each item are given in Table 1 of that Chapter.

Chapter 3 also reports the results of a factor analysis of Form N for the 1975 national sample of 2,143 families. This analysis yielded the same three factors, and an additional factor. The items with the highest loadings on this factor are the use of a knife or gun. The factor loadings for the other violence items go down as the severity of the violence decreases. This suggests that the additional factor represents the Severe Violence index described in the section on scoring methods. It further suggests that the "minor violence" of family life is a somewhat distinct phenomenon from the repeated and severe assaults which characterize "wife-beating."

Jorgensen (1977) analyzed Form A data and found three factors which he labeled high medium and low intensity factors. The "high intensity" factor consists entirely of items involving physical assault, the "medium intensity" factor consists of acts of verbal or symbolic aggression (insulting, stomping out of the house, etc.) and the "low intensity" factor consists entirely of items from the reasoning group. Jorgensen's factor analysis therefore produced a factor structure which also confirms the originally hypothesized dimensions.

Gully et al. (1981) administered the Form N violence items K through SR to a sample of 335 undergraduates in order to measure violence in seven family role-relationships (e.g. parent-parent, parent-sibling, sibling-sibling). Since Gully et al. did not administer items from the Reasoning and Verbal Aggression scales, their factor analysis is not comparable to the other analyses reported in this section. Their analysis of the seven violence scores identified two factors: sibling violence and parent violence.

Hornung, McCullough, and Sugimoto (1981) analyzed the CTS responses of a random sample of 1,793 women in Kentucky (Schulman, 1979). They replicated the analysis for the woman's behavior, the man's behavior, and items which combined both. All three analyses yielded for factors: reasoning, "psychological abuse," "physical aggression," and "life-threatening violence." The differentiation of the violence items into minor and a severe violence factors is parallel to the findings from the analysis of Form N by Straus (1979) described above.

Sack, Keller and Howard (1982 carried out a factor analysis that is similar in some respects to the analysis described above in that they factored CTS indexes rather than the CTS items. The 12 variables in their analysis consist of the scores on the three CTS indexes for each of four family role-relationships. This procedure identified three factors: Non-Violent Conflict Tactics, Premarital Aggression, and Parental Aggression.

Eblen (1987) modified Form N to include more specific disciplinary techniques (such as "grounded you" and "sent you to your room") with a sample of 513 children in 5th through 8th grade. Separate factor analyses were computed for the behavior of the fathers and the mothers (as reported by the child). For fathers, the first factor consisted entirely of acts of physical violence, plus "threatened to hit or throw something." For mothers, the

first factor consisted of the violence items and also two acts of verbal aggression and "Threw you out of the house." The second factor for both parents was identified as measuring "normal discipline' because it "Sent you to your room," "Grounded you," "Yelled at you,"Slapped or spanked you." The third factor had high loadings on the four reasoning items for fathers. For mothers, the third factor included some reasoning items, plus "Cried" and two new items which also measured the mothers negative affect.

Barling et al.(1987) administered Form N as modified by Hornung et al. (1981) to 585 married couples. The factor analysis for the data from husbands found a physical aggression factor which loaded all violent items, and another factor for psychological aggression. The third factor consists of one of the reasoning items and "Cried" (which, according to Straus' scoring method, is not scored on any CTS scale); and the fourth factor consists of the remaining two reasoning items. It is possible that if Barling et al. had done the factor analysis without the "cried" item the third factor would consist of the reasoning items. The results of factoring data provided by the wives were similar.

Schumm et al. (1982) administered Form N to 181 adolescents and found three factors. The first factor consisted of all physical violence items (including "threw or smashed something"), the second factor measured verbal aggression (minus the "stomped out of room" item which loaded with the first factor), and a third factor included "discussed issue calmly" and "got information to back up your side" into a verbal reasoning measure.

Summary Of Factor Analyses. Eight factor analysis studies have been carried out. One of these Gully et al. (1981) and Sack, Keller and Howard (1982) address a different issue. Although there are some differences in the findings, the six comparable analyses all found a factor structure which approximates the three originally postulated tactics of reasoning, verbal aggression and violence. What differences there are probably reflect the fact that some studies used modifications of the CTS.

Concurrent Validity

Validity is the most important and the most difficult aspect of an instrument to ascertain. In part this is because of some inherent difficulties in obtaining data which is appropriate for measuring concurrent validity. Concurrent validity is estimated by the degree to which the new instrument is related to other presumably valid instruments. This association cannot be determined if the new measure is the only measure of the phenomenon, or if (rightly or wrongly) other measures are thought to be inaccurate or invalid.

Another difficulty in evaluating validity is that, despite a huge literature, the criteria for judging the validity of an instrument are far from precise. Remarkable as it may seem, there are no established standards for judging concurrent validity coefficients. Inspection of several psychometrics texts revealed that almost none give numerical figures, nor does the Standards For Educational and Psychological Tests and Manuals published by the American Psychological Association. Perhaps the reason is that the assessment of validity is a complex issue that is best approached multidimensionally (see for example, Brindberg and Kidder, 1982; Campbell and Fisk, 1959). Nevertheless, some numerical frame of reference can be helpful. Cronbach (1970) is one of the few authors who provides this. His Table 5.3 "Illustrative Validity Coefficients" includes 18 coefficients for widely used tests and sub-tests. My tabulation of these coefficients shows that the mean is .37. Cronbach comments "It is unusual for a validity coefficient to rise above 0.60...."

Standards for judging concurrent validity are even more elusive in sociology because sociological research reports rarely include any validity evidence at all (Straus, 1964; Straus and Brown, 1978). Sociologists place great importance on the representativeness of the sample, and seem to implicitly assume that if the sample is representative, the measures used in studying that sample are valid.*10
These problems should be kept in mind in evaluating the concurrent validity of the CTS.

Before turning to the formal evidence (in the form of validity coefficients) an elementary but basic point needs to be established: are subjects willing to report instances in which they verbally and physically assaulted other members of their family? At the time the Family Violence Research Program began, it was widely believed that this information, if obtainable at all, could only be gotten though in-depth interviews based on carefully establishing rapport with the respondent. Contrary to this belief, the CTS, whether administered in the form of a questionnaire, by face-to-fact interview, or by phone interview, has proven to be successful in obtaining high rates of occurrence for socially undesirable acts of verbal and physical aggression. These high rates are consistent with previous in-depth interview studies such as Gelles (1974) and much higher than the rates from any other currently available technique (see Chapter 5).*11

Another bit of evidence confirming the ability of the CTS to obtain data on violence is the consistency of the National Survey Rates with the rate obtained by the Randomized Response Technique described earlier and which is widely assumed to be able to elicit more complete reporting of deviant behavior. Zdep and Rhodes (1976) used this technique, which guarantees the anonymity of the respondent, to estimate the incidence of child abuse. Their estimate of 15% is almost identical to the rate obtained by the National Family Violence Survey using the CTS.

Concurrent Validity Evidence As Reported in Straus (1979). The first study reporting concurrent validity for the CTS was Bulcroft and Straus (1975). The CTS was completed by students in two sociology courses. The students responded for a referent period consisting of the last year they lived at home while in high school.1 They were asked to indicate, to the best of their knowledge, how often during that year their father and mother had done each of the items in the CTS.

Each student was also asked to fill in a separate form with the names and addresses of their parents so that a similar questionnaire could be sent to them. Participation was voluntary and students were assured that they would not be mentioned in the letter to the parents, and that as soon as the mailing was completed the names and addresses would be destroyed and all documents identified by a number only from then on. Of the 110 students present in these classes, 105 completed the questionnaire. Of the 168 questionnaires sent to the mothers and fathers (each was sent separately with its own return envelope) 121 or 72 percent returned the questionnaire. A comparison of parent reports with student reports in this study, and also with student reports from a previous study (Straus, 1974a), is given in Table 3.

(Table 3 about here)

The correlations shown in Table 3 are difficult to interpret. First, the pattern is varied. The correlations are low for the Reasoning scale and high (relative to typical concurrent validity results for most social psychological tests and scales) for the Verbal Aggression and Violence scales. An analysis by Bulcroft and Straus (1975) suggests that the higher correlations for the two aggressive modes of conflict are due to such acts being more dramatic and emotionally charged and, therefore, better remembered.

(Table 4 about here)

Another way of examining the concurrent validity of the CTS is to compare incidence rates for violence as reported by each spouse, and also as reported by students for their parents. The rates are shown in Table 4. For the Bulcroft and Straus (1975) study, the first two rows of the table show a tendency for the students to report somewhat more violence by husbands than the husbands themselves reported, but to report less violence by wives than the wives themselves reported. One does not know which data (the student report or the reports of the spouses themselves) is more accurate since each has its own potential source of bias. The last two rows of Table 4, however, suggest that these discrepancies

might be the result of the small size or other characteristics of the sample used in that study, since the results obtained by student report for the larger sample in the Straus (1974a) study (third row) are almost identical with the violence rates reported by the nationally representative sample of spouses shown in the last row of Table 4.

Other Studies of Agreement Between Family Members.*12 Since Chapter 3 was written, other studies have been published which give the degree to which the reports of each spouse agree. One of these (Jouriles and O'Leary, 1985) presents the findings as a measure of "interspousal reliability." This usage seems to implicitly assume the validity of the CTS violence measure. Alternatively, such data can be regarded as a means of determining the extent of concurrent validity. The importance of viewing couple agreement as a measure of validity is stressed by Edleson and Brygger (1986) and Szinovacz (1983).

Edelson and Brygger (1986) note that if the CTS is used as a diagnostic and evaluation tool in a treatment program for assaultive men "reliance on men's self-reports, if not accurate, may lead to inappropriate treatment decisions and have grave implications for the safety of victims [and]...overestimate...the success of a treatment program" (page 377). Consequently, they tested the hypothesis that the 29 barterers in their sample will report less violence and less severe violence than their female partners. They found higher rates of reporting by women on all 13 violent acts in their version of the CTS, including four which were statistically significant. In a six month follow up administration of the CTS, violence had greatly decreased and the gender difference in reporting was no longer present except for the "pushed, gabbed, shoved.." item.

Jouriles and O'Leary (1985) compared the responses to the violence items and the violence index for 65 couples beginning marital therapy and for a "community sample" of 37 couples. In the therapy sample, they found 72% agreement between the reports of the two spouses for violence by the husband and the same percentage agreement for violence by the wife. For the community sample the percentage agreement was 77% for violence by the husband and 80% for violence by the wife. However, these high agreement scores largely reflect consensus on the nonoccurrence of violence in an extremely skewed distribution. Consequently, they also reported a better measure of agreement -- kappa coefficient. The coefficients for husband's violence were .43 for the therapy sample and .40 for the community sample; and for wife's violence, .40 for the therapy sample and .41 for the community sample.

Szinovacz (1983) analysis of data from 103 couples is the most detailed and thorough analysis of agreement between spouses in response to the CTS. At the aggregate level, Szinovacz like other investigators, found almost identical violence index rates regardless of whose responses were considered. However, when comparing the report of one spouse with the report of the other spouse, she found that only 40% agreement for use of violence by the wife, and 27% agreement on the use of violence by the husband. The lack of agreement on the wife's violence was mainly due to "a considerable number of women [who] report at least one incidence of violence against the husband that is not acknowledged by their spouse" (page 638). Szinovacz also found that when the violence index is based on events reported by either spouse, the rate is about 50% higher than rates based on the report of only one spouse.

Browning and Dutton (1986) compared responses to Form N for 30 couples where the husband was undergoing treatment for wife assault. The mean violence index for the husbands was 9.3 as reported by the husband, but almost twice as high (17.3) as reported by the wives. The mean index score for violence by wives was 6.7 as reported by the husbands, but only 3.9 as reported by the wives. Each partner therefore tended to under report their own violence. The correlation between spouses for husband's violence was .65, but only .26 for violence by the wife.

Winkler & Doherty

Summary of Agreement Studies. The studies reviewed are consistent in finding large discrepancies between the reports of husbands and wives. These often take the form of under-reporting by the perpetrator. It is therefore important to obtain data from both spouses, particularly if CTS scores are used for treatment decisions or program evaluation. When the CTS is used for basic research, where the issue is not the absolute level of violence, but the relationship between variables, the similarity in overall (i.e. aggregate) the rates based on male and female subjects, together with the similarity in findings regardless of gender of respondent (see Chapter 9) makes data from both spouses less crucial.

Bring in differential reporting for minor and severe violence

Gender of Respondent and Relationships Between Variables
(Section to be completed)

Relationships between variables are parallel when aggregate data are used, regardless of who is the respondent. Szinovacz Figure 1 shows this, and also shows that regardless of how the couple data are used, the results are essentially parallel.

Difference between single person and source of data and as object of study

Discrepancy as a meaningful variable

Social Desirability Response Set As A Threat To Validity

Since the first paper describing the CTS, the fact that not every respondent will be willing to describe instances in which he or she kicked or punched a child or a spouse has been emphasized. This has typically been followed by statements that the true rate is probably much higher than the measured rate (Straus, Gelles, and Steinmetz, 1980: ??). The degree to which the true rates are greater than the rate obtained by using the CTS is not known. Consequently, the best that can be said about the accuracy of the CTS is that it probably closer to the true incidence rate than other methods because it produces a higher incidence rate than any other method.

For research on family violence (as compared to clinical use), a more serious problem than underestimating the amount of violence is the possibility that the degree of underestimate varies from subject to subject and that this is correlated with other characteristics of the subject. This problem, which is referred to as "correlated error" rather than random error, can produce erroneous findings. For example, the correlation between having been the victim of violence by a spouse and depression (Gelles and Straus, 1987) might be spurious if both reflect person-to-person differences in willingness to tell an interviewer about such socially stigmatized behavior. This possibility has been investigated using measures of "social desirability response set."

Arias and Beach (1987) used the Marlowe-Crown Social Desirability Scale with a sample of 90 couples and found correlations with the CTS violence index of -.23 for violence by husbands and -.32 for violence by wives. Both correlations are statistically significant, but in the light of the stigmatizing behavior measured by the CTS violence index are much lower than might be expected. In addition, among subjects who reported engaging in violence, social desirability was not related to their reports of frequency and/or severity of the violence; and no relationship was found between reports of being a victim and tendency to respond in a socially desirable manner. The most important finding was that controlling for social desirability did not eliminate the relationship between the CTS and other demographic, personality, and marital relationships variables.

Saunders (1986) administered the Marlowe-Crown SD scale

Saunders and Hanusa (1986)

Gender Similarity As Evidence Of Validity For Research Purposes

Summary of Concurrent Validity.

Construct Validity

Construct validity refers to the association between the measure in question and other variables. The extent that these associations are consistent with theoretical or empirical knowledge is used to evaluate construct validity (Cronbach, 1970; Nunnally, 1978; Straus, 1964). Thus, a measure of the caloric intake should be correlated with feeling hungry, based on the theory that the subjective experience of hunger is caused by lack of food intake. Of course, the correlation will be less than 1.00 because there are other factors which also influence subjective feelings of hunger.

There is even more ambiguity as to the size of the coefficient which will be taken as evidence of construct validity than there is for concurrent validity. This is inherent in the process. If the theory being tested with the new measure specifies a close linkage between the independent and dependent variable, then a large correlation is needed; but if (as in most theories) only a weak bivariate relation is posited because of the numerous other factors which are involved, then low correlations, provided they are statistically significant, support the construct validity of the measures used to test the theory.

It follows from the above that the construct validity of the CTS can be assessed by the degree to which the CTS measures produce findings which are consistent with theoretical or empirical propositions about the variable which the instrument purports to measure. Chapter 3 gives a summary of the concurrent validity evidence which was available even ten years ago, Since then, a large number of studies using the CTS have been published which provide much more evidence. In fact, the number is so great that not all can be mentioned, and even those only briefly.

* The CTS data on the extent to which patterns of violence are correlated from one generation to the next, first reported by (1977a,b) and by Straus (1983, Straus et al., 1980) is consistent with many other empirical findings and social learning theory and has also been confirmed by many other investigators (see meta analysis by Hotaling and Sugarman, 1986).

* Use of the CTS in the two National Family Violence Surveys have confirmed the existence of many hypothesized "risk factors" for family violence (Straus, Gelles and Steinmetz, 1980), including:

  Inequality between spouses, and especially male-dominance
  Poverty
  Unemployment
  Stress
  Youthfulness
  Heavy drinking
  Lack of community tie

* Comparisons of women who experienced relatively minor violence and women who experienced severe violence in 1985 with women who had not been attacked by their husbands (Gelles and Straus, 1987, 1988) show that:

  Seriously assaulted women averaged almost double the days in bed due to illness than did other women.
  A third fewer severely assaulted wives reported being in excellent health, and three times as many reported being in poor health.
  Seriously assaulted women had much higher rates of psychological distress, including:

  - Double the incidence of headaches
  - Four times the rate of feeling depressed
  - Five and a half times more suicide attempts

* Gelles and Straus (1987, 1988) also compared children who had been severely assaulted by a parent with the other children in the sample and found that the abused children consistently experienced more behavior problems. For example, the child victims of severe violence had 2 to 4 times higher rates of:

  Trouble making friends
  Temper tantrums
  Failing grades in school
  Disciplinary problems in school and at home
  Physically assaultive behavior at home and elsewhere
  Vandalism and theft
  Drinking and drug use
  Arrests

Relationships such as the above, and many others indicative of the construct validity of the CTS violence scores have been found by a number of investigators, for example:

* The less affection between the parents of a respondent, the higher the incidence of violence against a martial partner (Szinovacz, 1983).

* Violent couples identified with the CTS, compared to non-violent couples matched on Marlowe-Crown Social Desirability Scale, are characterized by asymmetry in power, high conflict, lack or organization, and low sharing of pleasurable activities (Resick and Reese, 1986)

* Physically abusive men identified by the CTS have lower self-esteem (Neidig, Friedman, and Collins, 1986)

* Theoretical propositions tested using CTS data tend to hold regardless of the gender of the respondent (see Chapter 9)

SUMMARY AND CONCLUSIONS

Every instrument has its limitations and the CTS is no exception. This chapter alerts readers to as many of the possible limitations as I or critics of the CTS have been able to identify. In some cases the concerns are groundless or erroneous, in other cases they point to possible but not empirically demonstrated problems, and in still other cases they are problems and limitations which are inherent in the instrument as it is currently structured must therefore be kept in mind when interpreting the results of research using CTS data.

The deficiencies of the CTS are most serious as a measure of physical abuse of children, and several suggestions for revision were presented. Although revisions of the CTS for use in measuring spouse abuse are also possible, one must weigh the potential gains against the loss of comparability with previous studies using the CTS as it now stands, and the loss of ability to use the comprehensive normative tables in Appendix 2.

The chapter also reviews the evidence on factor structure, reliability and validity. The factor structure is remarkably consistent across studies using widely varying populations and conducted by different investigators. The internal consistency reliability, is at best moderate, mainly as a result of the small number of items in each scale which was necessitated by the decision to make the CTS a brief instrument which is suitable for survey research. The concurrent validity, as measured by agreement between spouses or between parents and children is more difficult to evaluate because there are no established standards for validity coefficients. However, the coefficients are within the range of validity coefficients typically reported. The strongest evidence concerns the construct validity of the CTS. It has been used in a large number of studies have produced findings which tend to be consistent with previous research when that is available, consistent regardless of gender of respondent, and theoretically meaningful.

Ironically, the weakest aspect of the CTS are the scales which have received the least criticism: the Reasoning and the Verbal Aggression. The number of items used to measure reasoning scale is clearly inadequate and neither scale has been used sufficiently to be able to reach conclusions about validity. The low usage of the reasoning and verbal aggression scales reflects the fact that the major attraction of the CTS has been the measure of physical violence. However, on both theoretical and methodological grounds, it is almost certain that more will be learned about violence if it is studied in the context of other tactics for resolving conflicts, as was done by Straus (1974) and Steinmetz (1978).*13

Although far from a perfect instrument, the comparison presented in this chapter of the CTS with the available alternatives, together with the evidence on stable factor structure, moderate reliability and concurrent validity, and the strong evidence of construct validity, all suggest that the CTS is the best available instrument to measure intra-family violence.

ENDNOTES

1. See Gelles and Straus (1979) for a detailed theoretical analysis of this definition and an analysis of alternative definitions. As pointed out in that article, the fact of a

physical assault having taken place is not sufficient for understanding violence. Several other dimensions also needed to be considered. However, it is also important that each of these other dimensions be measured separately so that their causes and consequences and joint effects can be investigated. Among the other dimensions are the seriousness of the assault (which can range from a slap to stabbing and shooting); whether a physical injury was produced (which can range from none to death); the motivation (which might range from a concern for a person's safety, as when a child is spanked for going into the street, to hostility so intense that the death of the person is desired); and whether the act of violence is normatively legitimate (as in the case of slapping a child) or illegitimate (as in the case of slapping a spouse), and which set of norms are applicable (legal, ethnic or class norms, couple norms, etc.).

2. It is ironic that the main criticism of the CTS has come from feminists. There are actually three ironies. First, I consider myself a feminist, and published the first empirical research showing the relation of male dominance to violence (Straus, 1973). A year earlier I presented a paper on "Sexual Inequality, Cultural Norms, and Wife-Beating" (Straus, 1976). That paper was widely distributed by women's groups until I became persona non grata for publishing data on violence by women. The second irony is that the CTS has provided, and continues to provide, the most powerful "hard data" on the extent of wife-beating. This data has been used in countless communities to help build the case for shelters and other services needed by battered women, and has also figured in state and national legislative hearings. Third, the two most specific feminist criticisms of the CTS (not indicating who originates the violence and the extent to which women are physically injured) turn out to be "defects" which strengthen the case for women because it turns out that women initiate as often as men and because the injury rate is actually very low. See the sections on initiation and injury later in this chapter.

3. This is an appropriate place to clear up a misunderstanding about who may use the CTS. Although the article which serves as a manual for the CTS (Straus, 1979) is copyright, the instrument itself is not. Anyone may therefore use the CTS in its original form or modify it without permission of either the author or the journal in which it was published. However, I would appreciate copies of any reports using the CTS so that the bibliography can be updated for the benefit of other scholars.

4. For convenience and economy of wording the terms spouse, partner, husband, wife, couple, marital, etc are used to refer to couples, irrespective of whether they are a married or a non-married cohabiting couple. For an analysis of differences and similarities between married and cohabiting couples see Stets and Straus, 1987; Yllo 1978; Yllo and Straus, 1981.

5. By "incompatible" I am referring to what is possible within the score of a particular instrument. However, within the scope of a research project more than one approach can be, and where possible, should be used. Within the scope of a field or research issue, it is essential that this type of triangulation occur because each approach brings into focus aspects of a phenomenon which are hidden to other approaches. This perspective is the opposite of that taken by extreme partisans of a particular method who state or imply that only their method can provide an adequate understanding of the phenomenon.

6. These conclusions hold regardless of whether the information is obtained from the victim or the offender or from a male respondent or a female respondent. At the same time, victims do report more injuries than offenders, and this is most pronounced for female victims. But it does not change the point made in this section: that measuring family violence on the basis of injuries vastly understates the problem, not from a medical perspective, but from the perspective of a civil society. Thus, according to female victims of male violence, the injury rate is 7.3%, whereas according to male perpetrators of severe assaults, the injury rate is 2.3%, i.e., the rate as reported by women victims is three times greater. Nevertheless, this same statistics means that 92.7% of severe

assaults would not be included in the statistics if the injury rate as reported by women victims of severe violence were used as the measure of spouse abuse, and 98.4 percent of minor assaults on women would not be counted if injury were the criteria.

7. Those interested in using the CTS in their own research should also consult Appendix 2, and particularly the section on the differences between rates and scales.

8. It should be recognized that in most instances, the outcome from being kicked, although painful, does not result in an injury. However, absence of injury does not make it less of an abusive act. Our distinction between minor and severe violence parallels the legal distinction between a "simple assault" and an "aggravated assault" An aggravated assault is an attack which is likely to cause grave bodily harm, such as an attack with a knife or gun, irrespective of whether the object of the attack was actually injured. See the discussion of injury as a criterion of abuse previous section.

9. That is correct from a clinical perspective because the only real cases are those which are known and treated. However, from an epidemiological perspective, the former is a measure of interventions rather than of incidence. There is some evidence that the Child Protective Services rate, which have been increasing at a rate of about 10% per year, has a negative correlation with the child abuse rate as measured by the CTS (see Straus and Gelles, 1986 for a discussion of the possible reasons).

10. The situation is almost the opposite in psychology. Relative to sociologists, psychologists pay much more attention to the validity of the measures and seem to implicitly assume that if the measure is valid, the sample is not crucial.

11. Although the major response distortion may be under-reporting, exaggeration may sometimes occur. Some victims may exaggerate to gain sympathy for their plight, and some macho type males may exaggerate to show that they "know how to handle a woman."

12. In reviewing these studies, the focus will be on the violence index scores as computed from the responses of husbands and wives, not on differences between spouses in respect to the individual items which are combined to create the index. This was done because the space to present results at the item level is not justifiable in the context of this paper and, more importantly, because the key question is the validity of the composite scores or indexes, not the separate items making up the instrument. The reliability and validity of separate items is always lower than that of the overall instrument, which of course is the reason for using multi-item tests rather than single items.

13. To take this suggestion seriously, one needs to go beyond the CTS and also use an instrument which measures a broader range of non-punitive methods of resolving conflicts than can be accomplished with even an expanded set of reasoning items.

Appendix 2
(There is no Appendix 2)

NEW SCORING METHODS FOR VIOLENCE AND NEW NORMS FOR THE CONFLICT TACTICS SCALES

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Contents

In the ten years between the writing of Chapter 3 and the writing of this Appendix, a great deal has been learned about the psychometric characteristics of the Conflict Tactics Scales (CTS) and about the limitations of the original methods of scoring the violence items of the CTS. In response to these limitations, alternative methods of using the violence items to create measure of intra-family violence were developed. The first part of this appendix describes the different versions of the CTS and gives the rational for these new measures and also scoring instructions.

Within that same time span, a second and much larger nationally representative sample of families was tested. This new data makes possible more current and more reliable norms. The last section of this appendix therefore provides new normative data, and also presents this data in a form which is better fits the needs of both researchers and clinicians.

FORMS A, N, AND R

The three versions of the CTS, forms S, N, and R, are fundamentally the same, but differ in respect to the number of items for each scale and the response categories presented to the subjects. Form A was administered as a written questionnaire, Form N as an in-person interview, and form N as part of a telephone interview. However, any of these forms can be administered as a questionnaire, in-person, or by telephone. Table 1 summarizes the differences between the thee versions:

(Table 1 about here)

Form A. The first version of the CTS was administered in questionnaire format to college student subjects. The subjects were asked to respond by indicating what happened in their family of orientation during the last year they lived at home when they were in high school. In most cases this was when they were seniors in high school (Straus, 1973, 1974). This version of the CTS was also used for the validity study in which the responses of students concerning the conflict tactics used by their parents and the response of the parents themselves were compared. The results are summarized in Chapter 3 and presented in detail in Bulcroft and Straus (1975).

Form N. Form N was developed for use in the 1975-76 National Family Violence Survey, as reported in the book Behind Closed Doors: Violence In the American Family (Straus, Gelles and Steinmetz, 1980) and in many of the chapters in this book. Form N differs from Form A in having additional violence items and fewer reasoning items, and the response categories were expanded (see Table 1).

Form R. Form R is the version used in the 1985 National Family Violence Resurvey, as reported in the book Intimate Violence (Gelles and Straus, 1988) in several chapters in this book, and in the panel study based on reinterviews of a sub-sample in 1986 and 1987. The difference between form N and R is that form R has an additional parent-child item "Burned or scalded him/her" inserted after "Beat him/her up," and an additional spouse item "Choked him/her/you" inserted after "Beat him/her/you up." In addition, with Form R the interviewer read the response categories, starting with "once" and continuing to "more than 20 times." Using this format, respondents must volunteer "never" or "don't know." This change was made because it tends to increase the rate of reporting sensitive or deviant behavior (see for example, Kinsey, Pomeroy, and Martin, 1948).

TERMINOLOGY

The three basic summative scales (for Reasoning, Verbal Aggression, and Violence) are described in Chapter 3. This appendix focuses on the additional ways to measure violence, including more sophisticated summative scales, rates, and typologies. Before describing each of these, the terminology to be used needs to be defined.

Indexes

For purposes of this book, the term "index" is a general term which is used to refer to a variable created by combining two or more of the "items" ("indicators") in the CTS. The index can be in the form of a summative scale, a Guttman Scale, a rate, or a typology. There are summative scale indexes to measure Reasoning, Verbal Aggression, and Physical Aggression or Violence. In addition, for violence, there are several summative scales, rates, and typologies.

Scales Versus Rates

The violence indexes can be expressed as either scales or rates. The difference between the CTS violence scales and CTS violence rates is that the scales are continuous variables and the rates are binary variables, usually coded 0 versus 1. Thus an ANOVA using the scale version of the Husband-to-Wife Violence index will give the mean number of assaults which occurred during the year. If the same ANOVA is repeated with the rate version of the Husband-to-Wife Violence index, the results will show the proportion of couples (which can be converted to a rate per 100 couples or per 1,000 couples by moving the decimal) who reported one or more violent incidents during the year.

Types of Scales

Several different methods have been used to compute violence index scales, including scales weighted by the frequency of occurrence of each violent act in the index, scales weighted by the product of the frequency times a weight for the severity (injury producing potential) of each violent act, and Guttman scales.

The original CTS indexes described in Chapter 3 are frequency weighted scales because each consists of the sum of the number of times each act occurred. Thus, if a respondent indicated that pushing or shoving occurred once, throwing things occurred four times, and slapping occurred once, the scale on Overall Violence Index scale would be six.

Violence Types

Several different typologies have been developed to classify families according to the severity of the violence, and according to which member of the couple engaged in assaults against the other.

NEW VIOLENCE MEASURES

Chapter 3 provides the conceptual and theoretical rational for the Conflict Tactics Scales (CTS) and information on how to score the items dealing with physical violence to obtain an "Overall Violence Index." It also suggests, but does not detail methods of creating what we have come to call "Severe Violence" indexes which can be used to measure the occurrence of child abuse and wife-beating.

Most of the analyses in this book and most research by others using the CTS makes use of the Overall Violence and Severe Violence indexes, either in the form of a frequency weighted scale, or (more usually) in the form of a rate (see above for the difference between a scale and a rate as used in this chapter). However, as noted in chapter 4, reliance on these two indexes has certain drawbacks. They do not fully reflect the differences in severity of violence inherent in the hierarchical structure of the violent acts. Moreover, the somewhat arbitrary distinction between "minor" and "severe" violence can, under some circumstances, distort the data. In addition, measuring the assaultive behavior of one person in the family, without taking into account whether the victim of those assaults was also violent, may also be misleading. For these and other reasons, additional methods of scoring the CTS violence items were developed, These additional measures may be more appropriate for certain purposes. This section describes the rationale and scoring method for several of these alternative violence measures and gives descriptive statistics for each measure.

Rates

An annual incidence rate has the advantages of unambiguous meaning and ease of understanding by the general public. In addition, since incidence rates are so frequently used in criminology and epidemiology, expressing family violence as incidence rates permits comparisons with other related phenomena. For this reason almost all the statistics in Straus, Gelles, and Steinmetz (1980) are in the form of rates.

There are also certain statistical advantages to using rates rather than scales. This is because the distribution of the violence scores is extremely skewed (85 versus 16 percent at best for spouses). This causes problems when violence is used as the dependent variable. The skewed distribution problem becomes even worse if the measure is in the form of a score which indicates how much violence occurs, i.e. if the violent 15% of the distribution is further extended by weighting those cases according to how often the violence occurred.. Regression parameters can be seriously distorted by such a skewed distribution. Ironically, the situation is improved slightly if the score is transformed into a rate by dichotomizing into 1 = any violence of the type measured (e.g. parent-child, husband-wife, minor, severe, etc.) versus 0 = no violence.

Although rates are better than scales for most analyses using the CTS violence indexes, because (as explained above) it does not exacerbate the skewness problem, and also because rates are a statistic that more people can understand, there are circumstances where the scores are preferable. One situation in which scale scores rather than rates are needed is when the analysis focuses on a group, all of whom are known to be or have been violent, and the issue is not whether there is violence, but how much. This will occur in research on "clinical" groups, such as the husbands of women in a shelter, or person in a treatment program. The how much issue is also relevant to analyses of violent groups identified by the CTS itself, as illustrated in the latter part of Chapter 7, where the issue is how often do abusing parents assault the child.

To transform a violence index scale into a rate, it is only necessary to dichotomize the violence items or any of the violence indexes as 0 versus 1. Users of SPSS can do this with the recode command, for example to recode the eight CTS violence items (items k through r): RECODE Q78K TO Q78R (1 thru 6 = 1)

Minor And Severe Violence Scales and Rates

It is often important to distinguish between assaults which are "minor" (in the sense that they are less dangerous and less the focus of moral condemnation) and "severe"

violence, which are acts that have a greater likelihood of causing an injury, and which make up what the public thinks of as "child abuse" and "wife-beating".

Severe Violence. The severe violence scales are computed by summing items N through R in Form N, and N though S in form R. If the items are first recoded from the 0 to 6 format to the midpoints of the approximate frequency designated by each response category (0, 1, 2, 4, 8, 15, and 25) the resulting scale scores will be a measure of the number of assaults which occurred. The following SPSS commands can be used to create the Severe Violence Scale:

```
COMPUTE   SEVERV = ITEMN + ITEMO + ITEMP + ITEMQ + ITEMR + ITEMS
```

The rate version of this index (see above for the way in which the term rate is used here), can be created with the following SPSS commands:

```
COMPUTE     SEVEREVR = SEVEREV
RECODE      SEVEREVR  (1 THRU HI = 1)
```

Very Severe Violence. When the CTS is used to measure physical abuse of children older than infants, there is widespread reluctance to including hitting a child with an object (such as a hair brush or belt) as necessarily abusive. To meet this criticism, we developed a measure of physical abuse for children, the Very Severe Violence index, which omits item O (hit with something) and is therefore restricted to items N, P, Q, R, and S, all of which are almost universally accepted as "abusive" acts.
This measure and the rational behind it are described in more detail in Chapter ???.

Minor Violence. For some purposes it may also be desirable to have separate measure of "minor violence" which measures how often assaults of this type occurred (see for example, chapters 7, 9, 10, 13, 19, 21). Since the minor violence acts are items K, L, and M, the following SPSS commands can be used to compute this scale:

```
COMPUTE     MINORV = ITEMK + ITEML + ITEMM
```

The rate version of this index (see above for the way in which the term rate is used here), can be created with the following SPSS commands:

```
COMPUTE     MINORVR = MINORV
RECODE      MINORVR (1 THRU HI = 1)
```

A difficulty with this measure of minor violence is that, since most persons who have committed severe assaults also engaged in minor violence, this measure mixes people who have committed only minor violence with those who have also severely assaulted. At first glance one might think that this problem can be avoided by a "conditional transformation), i.e. one which computes the minor violence index only if the scale on the severe violence index is zero. However, this is not satisfactory because it does not deal with the cases where there was both severe and minor violence. If they are scored as zero on minor violence, this is misleading in the extreme. If they are assigned the "missing value" code, then these critically important cases are lost from the analysis. One solution is to create a typology or nominal variable to identify the "level" of violence, as explained below in the section on violence types

Wife-Beating.

Severity Weighted Scales

The Overall Violence Index, the Severe Violence Index, and the Minor Violence Index reflect differences in how often (1) any acts of violence, (2) severe acts of violence, or (3) acts of minor violence occurred. One then has to choose between these three indexes. If it is desirable to take into account different degrees of severity of violence as well as the frequency of violence, two sets of statistics must be computed and presented. A less cumbersome method of taking into account both the severity and the frequency of violence is possible with a "Severity Weighted Scale." This multiplies the frequency of each violent act in Form N by the following weights (chosen on the basis of consultation with colleagues concerning the injury producing potential of each act): Items K, L, and M (the minor violence acts) are unweighted, i.e. they have a weight of 1. The weights for the other items are: kick, bit, punch = 2; hit with object = 3; beat up, chocked, burned, scalded = 5, threatened with a knife or gun = 6, used knife or gun = 8. The response categories for must first be recoded from the codes of 1 through 6 (Form N) or 0 through 5 (Form R) to the approximate midpoints of these categories: 0, 1, 2, 4, 8, 15, and 25.

Although the Severity Weighted Scale results in a continuous variable, it has the same problems with extreme skewness as the other violence scales. The skewness problem may actually be worsened because the severity weighting creates even more extreme outliers than occur when only the items are weighted only by their frequency of occurrence. Consequently, as with the frequency weighted scales, the severity weighted index should not be used with statistical techniques (such as ordinary least square regression) which assume at least a moderately normal distribution. Instead, the scores can be used to divide the sample into nominal categories, or non-parametric regression techniques such as TOBIT can be used.

Wife-Beating. The problem of terminology and norms is even greater for violence between spouses than for violence by parents. Although occasionally slapping a child is not usually considered abuse (or even "violence"), the same act is typically considered to be violet if done to a spouse. Thus, since any assault on a spouse tends to be considered as abusive, in the case of violence between spouses, the "overall violence" index is important. This is in contrast to the situation for parent-to-child violence, where (as noted in Chapter 4) the overall violence index is not a meaningful measure because it the acts of minor violence which are included in the overall violence index are rarely considered to be abuse.

Although I consider any hitting of a spouse, including "only" slapping or throwing something at wife, to be abusive, such acts of minor violence are not "wife beating" as the public understands that term. For the public at large, wife-beating means severe assaults and probably also repeated severe assaults. Violence of less severity or less frequency may be considered abusive, but the public does not think of it as "wife-beating." Consequently, if the purpose at hand requires a measure which approximates the public conception of wife-beating, the Severe Violence index should be used. If one wants to measure the level of violence which approximates the level which tends to prevail among women who seek refuge in a "safe house" for battered women, then it is also necessary to require that such acts have occurred repeatedly, for example, four or more times during the past year.

Guttman Scales

The CTS items were selected and arranged in what was believed to be a hierarchical ordering. The main reason for this sequence was to increase the willingness of respondents to report acts of violence. The hierarchical sequence reduces the refusal rate because it takes into account the covert norms regarding the use of physical violence in the family. These norms justify violence if the parent or spouse has "tried everything" -- reasoned, pleaded, gotten help, gotten angry -- and, despite this, the conflict is still not resolved. For this reason, the violence items were selected and arranged in order or

increasing severity. This sequence is also what is required to make it possible to compute Guttman scales for violence.

To the extent that the items form a perfect hierarchy, Guttman scale versions of the violence indexes have the advantage of producing scales which indicate the specific degree of severity of the violence used. For example, a score of three means that the respondent used the three least severe acts but not any of the five more severe acts of violence included in the CTS. By contrast, an Overall Violence Index score of three can result from engaging in any one of the violent acts three times, from any three of them once, etc. Guttman scales avoid this problem, but at the price of having to dichotomize each item, i.e., of ignoring how often each act of violence occurred.

When computing the Guttman scales for violence, the "division point" for all items is 0 versus 1 or more occurrences of the act. However, since the marginals are so skewed for the most extreme items (beating up, threatening with a knife or gun, using a knife or gun), these items must be combined. This produces a composite item in which 0 is scored if the respondent did none of these, and 1 is scored if any one or more of them were done. In SPSS this can be done using: COUNT Q78PQR = Q78P, Q78Q, Q78R (1).

———> Sections still to be added:

Highest of Either

Szinovacz (1983) administered the CTS to both partners and found that when the violence index is based on events reported by either spouse, the rate is about 50% higher than the rate based on the report of only one spouse. This suggests that where data from both partners is available, the most complete measurement will be obtained by using the response of the spouse who reports the most violence on the grounds that the spouse reporting less violence has forgotten or is concealing violent incidents.

Ever Rates And Scales

Rates. The CTS items in Forms N and R are followed by a question for each item which asks whether that act had ever occurred. This supplemental question is asked only for those who indicated that the act did not occur during the one year referent period. By combining the main item and the "ever" question, one can determine a prevalence rate over the course of a marriage, or since the birth of a child. However, these rate must be used with considerable caution because recall errors are almost certain to be large.

Scale. It is also possible to create a continuous scale, starting with 0 for no violence ever, 1 for no violence in the referent year of the study but violence occurred at some point prior to that, and then scores of 2, 3, 4 etc. for varying amounts of violence during the referent year. However, as noted in the earlier section on rates, the distribution of violence is skewed so extremely that it is probably best to recode this scale into a trichotomy by recoding 2 and over as 2, or recode into a four category nominal scale.

Violence Types

Violence Level. If, as will often be the case, the objective is to identify people who used only minor violence, a typology rather than an index must be constructed. This is necessary because, as explained above most people who severely assault also engage in minor violence. One method is to create a three category typology: the non-violent, those who used only minor violence, and those who severely assaulted.*1 This type of variable can be computed for child-to-child, parent-to-child, child-to-parent, husband-to-wife, and wife-to husband violence.*2

Since the procedure to create these types is not entirely obvious, the SPSS commands used to create them for the National Family Violence Resurvey are given below. The first three commands are to create the type we labeled as "Husband Violence Level" and for which the SPSS variable name XC12L was used; the second three are for "Wife Violence Level" (XC15L), followed by "Couple Violence Level" (XC21L), and "Parental Violence Level" (XC6L). In the case of the Parent Violence Level, the Severe Violence category is divided into "Severe" and "Very Severe" (see ??? for an explanation).

```
IF (XC12W EQ 0) XC12L=0
IF (XC12N GE 1 AND XC12WS EQ 0) XC12L=1
IF (XC12WS GE 1) XC12L=2
VARIABLE LABELS     XC11L 'HUSBAND VIOLENCE LEVEL'

IF (XC15W EQ 0) XC15L=0
IF (XC15N GE 1 AND XC15WS EQ 0) XC15L=1
IF (XC15WS GE 1) XC15L=2
VARIABLE LABELS     XC15L 'WIFE VIOLENCE LEVEL'
IF (XC21W EQ 0) XC21L=0
IF (XC21N GE 1 AND XC21WS EQ 0) XC21L=1
IF (XC21WS GE 1) XC21L=2
VARIABLE LABELS     XC21L  'COUPLE VIOLENCE LEVEL'

IF      (XC6W EQ 0) XC6L=0
IF      (XC6N GE 1 AND XC6WS EQ 0 AND XC6AB EQ 0) XC6L=1
IF      (XC6WS GE 1 AND XC6AB EQ 0) XC6L=2
IF      (XC6AB GE 1) XC6L=3
VARIABLE LABELS     XC6L 'PARENT VIOLENCE LEVEL'

RECODE XC12L to XC6L (SYSMIS=-999)
MISSING VALUES XC121 TO XC6L (-999)
```

Couple Violence Types. The label "Couple Violence" applied to the CTS scales, rates, and types described up to this point is somewhat misleading. A more accurate label would be Couple Violence Sum because these variables are created by adding the score for husband-to-wife violence to the score for wife-to-husband violence. The misleading aspect occurs because a score of 6 can occur when the husband has a score of 3 and the wife a score of 3, when the husband has a score of 6 and the wife a score of zero, and when the husband has a score of zero and the wife a score of 6. In the second and third of these possibilities, only one person is violent, not both members of the couple as implied by the term "couple violence." This is not to say that the couple violence sums are invalid measures. They are valid when one wants to know the total amount of violence which occurred, regardless of who is the perpetrator and who is the victim. But when the issue is whether one or the other or both are violent, then the Couple Violence Types (CPLV) described in this section needs to be used. The SPSS commands to crate CPLV are:

When:

XC12WR = Overall Violence Scale for Husband-to-Wife violence
XC15WR = Overall Violence Scale for Wife-to-Husband violence

```
IF (XC12WR EQ 0 AND XC15WR EQ 0) CPLV=0
IF (XC12WR EQ 0 AND XC15WR EQ 1) CPLV=1
IF (XC12WR EQ 1 AND XC15WR EQ 0) CPLV=2
IF (XC12WR EQ 1 AND XC15WR EQ 1) CPLV=3
```

```
VALUE LABELS CPLV 0 "NEITHER SPOUSE VIOLENT"
                  1 "WIFE ONLY VIOLENT"
                  2 "HUSBAND ONLY VIOLENT"
                  3 "HUSB AND WIFE VIOLENT"
```

The Couple Violence Level types described above do not distinguish between minor and sever violence. Consequently, type 3 (both violent) does not identify couples where one partner uses minor violence and the other engages in more severe assaults. as was done in chapter ??. The typology used for the analysis in Chapter ?? was done using a variable called "Couple Violence 2" (CPLV2), created with the following SPSS commands.

```
IF (XC12L EQ 0 AND XC15L EQ 0) CPLV2=0
IF (XC12L EQ 1 AND XC15L EQ 0) CPLV2=1
IF (XC12L EQ 0 AND XC15L EQ 1) CPLV2=2
IF (XC12L EQ 1 AND XC15L EQ 1) CPLV2=3
IF (XC12L EQ 2 AND XC15L EQ 0) CPLV2=4
IF (XC12L EQ 0 AND XC15L EQ 2) CPLV2=5
IF (XC12L EQ 2 AND XC15L EQ 1) CPLV2=6
IF (XC12L EQ 1 AND XC15L EQ 2) CPLV2=7
IF (XC12L EQ 2 AND XC15L EQ 2) CPLV2=8

VARIABLE LABELS     CPLV2 'COUPLE VIOLENCE TYPES 2'
VALUE LABELS CPLV2 0 'NEITHER VIOLENT'
                   1 'H-MINOR, W-NONE'
                   2 'H-NONE, W-MINOR'
                   3 'BOTH MINOR'
                   4 'H-SEVERE, W-NONE'
                   5 'H-NONE, W-SEVERE'
                   6 'H-SEVERE, W-MINOR'
                   7 'H-MINOR, W-SEVERE'
                   8 'BOTH SEVERE'
```

Steinmetz Types. Suzanne Steinmetz (1977) developed a typology based on a cross classification of the verbal and physical aggression indexes. This permits investigation of the interaction of the two conflict tactics.

Which Violence Measure?

This appendix adds several new methods of indexing violence to the methods originally described. Which method to use depends mainly on the theoretical purpose and intended readership and -- because of the "robustness" of composite indexes (Straus and Kumagai, 1980) -- secondarily on statistical criteria.

A Guttman scale would be the choice only if the hierarchy of acts is central to the issue being investigated (as in Straus, 1980). This is because Guttman scales are, in other respects, typically less adequate instruments than ordinary linear additive indexes (Straus and Kumagai, 1980). Moreover, since the Guttman scales for violence, like almost all Guttman scales, have less than perfect coefficients of reproducibility, even the theoretical advantage of scores with a precise hierarchical meaning is only partly attained.

Scales. The Minor Violence scale is obviously appropriate in research which focuses on the "ordinary" violence in American families and the Severe Violence scale for research on "child abuse" or "spouse abuse." The Severity Weighted Index is the most comprehensive

because it takes into account both the frequency and the severity of violence. It may also have statistical advantages because it produces an index with a greater range of scores.

Rates And Types. Expressing intra-family violence in the form of a rate or a percentage who fall into each type has a number of advantages which make it the preferred measure in most instances. First, percentages and rates are the most widely understood method of presenting statistics, and this is important to the extent that the intended readership is not statistically oriented. Second, an annual incidence rate allows for comparison with annual incidence rates from other data sources, and with rates for other behaviors (especially crime and mental illness). Finally, the Couple Violence Types allow for a key aspects of the context to be built into the measure of violence; specifically whether one or both are violent. The disadvantage of rates, and of the first of the couple violence types is that they do not measure the frequency of violence within a given family. However, whenever this is appropriate, it can be done by applying the violence scales to those cases in which one or more acts of violence occurred (see Chapter ?? for an example).

RECODING RESPONDENT-SPOUSE ITEMS INTO HUSBAND-WIFE FORMAT

This transformation is needed if only one member of a couple is interviewed and is asked to respond to each CTS item twice: once for what the respondent did, and then for what the spouse did. Unless this is done, SELECT IF specifications must be included as part of the commands for each statistical analysis. To avoid this the respondent/spouse items were transformed in into husband/wife items, as illustrated below. In this example:

Q35A to Q35SR are the CTS items A to SR for the respondent
Q36A to Q36SR are the CTS items A to SR for the spouse

Only the SPSS commands to transform Q35A and Q36A into CTAH and CTAW are shown since the identical procedures are used to transform Q35B and Q36B int CTBH and CTBW, to transform Q35C and Q36C into CTDH and CTDW, etc.

1. Create H and W versions of the items and initialize as 888:

```
COMPUTE   CTAH=888
COMPUTE   CTAW=888
```

2. Use IF statements to transform each pair of variables, e.g.:

```
IF    (SEXR EQ 1) CTAH = Q35A
IF    (SEXR EQ 1) CTAW = Q36A
IF    (SEXR EQ 2) CTAH = Q36A
IF    (SEXR EQ 2) CTAW = Q35A
MISSING VALUE  CTAH TO CTAW (-999)
VAR LABELS     CTAH 'CTS ITEM A: DISCUSSED ISSUE - HUSBAND'
               /CTAW 'CTS ITEM A: DISCUSSED ISSUE - WIFE'
```

Note that -999 is the missing value code for ALL variables in this example.

NORMS

The norms presented in this section differ from those published in the original article on the CTS (Straus, 1979) in several ways.

New Normative Sample

First and most obviously, the norms presented below are based on a sample interviewed in 1985 rather than 1975-76. Up to date norms are important because of the changes which are occurring in the incidence of child abuse and wife-beating (Straus and Gelles, 1986). In addition, the 1985 sample of 6,002 families is almost three times larger than the 1975 sample. Finally, the 1985 sample does not exclude children under three and single parent families as did the 1975 sample.

Improved Method Of Presentation

The original normative table for the violence index was not as useful as it could be because it combined in a single percentile distribution whether violence occurred at all and how often it occurred. The problem with that method of norming the scales is that the distribution is so highly skewed that variation within the violent group is obscured. In the present version, this is replaced by two tables: one giving the violence rate per 1,000 and the other giving percentiles for frequency of occurrence.

The violence rate can be used to compare the rate for a particular study population (for example, a particular community or occupational group) with the national rate. It is therefore primarily useful for epidemiological or sociological research.*2

The percentiles, on the other hand are particulary useful with a clinical sample of either victims or offenders. Since, by definition, all have experienced violence, the issue is how does the amount of violence experienced by a given person or clinical group compare with the national norms for violent (but mostly not in-treatment) couples?

New Violence Indexes and Typologies

Since Chapter 3 was written in 1978, the importance of differentiating various aspects of intra-family violence has become more apparent. Consequently, rather than presenting only norms for whether any assaults took place and how many such incidents occurred, separate norms are now presented for "Minor Violence" (pushed, grabbed, shoved, threw objects at other, slapped or spanked), "Severe Violence" (kicked, bit, punched, hit with object, beat up, burned or scaled [in parent-to-child version], chocked [in spouse versions], threatened with a knife or gun, used a knife or gun), and "Overall Violence" (i.e., whether any acts of violence occurred, regardless of severity. Finally, for parent-to-child violence, there are norms for "Very Severe Violence." This is the measure which comes closest to measuring clinical child abuse (see Gelles and Straus, 1986).

In addition to these normative tables, the percentage distributions given for each of the typologies described in the section on Methods Of Scoring the Violence Items are the norms for each of those types.

Gender and Age-Specific Norms

Gender-Specific Norms. To our surprise, the 1975 National Family Violence Survey did not find important "gender of respondent" differences in the reporting of violence by either partner (Straus, Gelles and Steinmetz, 1980: Appendix). In the 1985 survey this pattern was repeated for "minor violence." However, for "severe violence" women reported substantially higher rates of husband-to-wife assault than did male respondents. Consequently, this section includes separate norms for the CTS as reported by male and female respondents. Norms based on the total sample are also because, for on most of the

CTS scales there is little difference in the scores as reported by men and women. Consequently, norms based on roughly twice the number of cases are preferable because they are more reliable.

Age-Specific Norms For Parent-To-Child Violence. Minor violence by parents toward children, which is essentially a measure of use of physical punishment, is highly related to the age of the child. The Child Abuse-1 measure is also age-related, but not as clearly. The most severe types of assaults against children, the Child Abuse-2 measure occurs about equally often at all ages from birth through 17 (Wauchope and Straus, 1987). Where there are large age variations, norms based on children of all ages are not appropriate. Consequently, separate norms for parent-to-child violence are given for ages 0-2, 3-6, 7-14, and 15-17, with the exception of Child Abuse-2 which was not found to be age related.

Violence by the child is also linked to the age of the child. Consequently, age-specific norms are also presented for child-to-child and child-to-parent violence. These data are from the 1975 National Survey because, due to the shorter interview time available in the 1985 study, the CTS "cycle" for tactics used by the child had to be omitted.

Age Specific Norms For Spouse Violence.

ENDNOTES

1. In principle, one could add a category for those who used severe violence no minor violence. However, there is little point to this because almost everyone who severely assaults also engages in minor violence. In addition, there is no obvious conceptual reason for identifying those few people who seriously assault, but do not also slap or shove.

2. Previous reports on the 1975 study (and some reports on the 1985 study) expressed the violence rate as a percentage of husbands, wives, or children. However, in this paper and most others, we use rate per 1,000 couples or children. There are three reasons for this. (1) Comparability With Other Crime and Child Abuse Rates. The National Crime Survey (NCS), which has become the de facto standard for survey research on the incidence of crime and victimization, and the annual rates of child abuse cases reported to child protective services in the United States, both use rate per thousand. Adopting that standard facilitates comparison of rates from this survey with the rates for reported cases of child abuse, and with NCS rates for assault and other crime. Another alternative is the Uniform Crime Reports system of rates per 100,000. However, a rate per hundred thousand is not appropriate since our survey samples were in the thousands, not hundred thousands (2) Results are presented as integers. It is customary in demography, criminology, and medical sociology to use a rate which enables the data to be presented in integers. For example, the 1981 cancer death rate is given in the Vital Statistics as 184 per 100,000 population rather than 0.00184 per capita or 0.184% because most people find it easier to conceptualize integers. Thus, the difference between the cancer rate and the suicide rate is more easily perceived when presented as 184 versus 12 per 100,000, than as 0.184% versus 0.012%. (3) Avoids confusion with percent change. In the context of this paper, using "x per thousand" instead of "x percent" avoids confusion with "x percent change" or the awkwardness in spelling out the latter as "x percent change in the percent violent."

A2-2

Table 2. Alpha Reliability Coefficients for the Conflict Tactics Scales

Study	Perpetrator - Victim Relationship	Reasoning	Verbal Aggr.	Physical Aggr.
Barling & Rosenbaum, 1986	Husband-to-Wife	.50	.62	.88
Mitchell & Hodon, 1983* (sample of battered women)	Husband-to-Wife	--	--	.69
Schumm et al. 1982	<u>Rural</u>			
	Husband/Father**	--	.80	.96
	Wife/Mother	--	.78	.93
	<u>Urban</u>			
	Husband/Father	--	.76	.95
	Wife/Mother	--	.85	.95
Straus, 1979	Child-to-Child	.56	.79	.82
	Parent-to-Child	.69	.77	.62
	Child-to-Parent	.64	.77	.78
	Husband-to-Wife	.50	.80	.83
	Wife-to-Husband	.51	.79	.82
	Couple	.76	.88	.88
Straus, 1987	Parent-to-Child	.59	.62	.42
	Husband-to-Wife	.42	.77	.86
	Wife-to-Husband	.43	.76	.79
	Couple	.48	.83	.82
Winkler & Doherty, 1983	Couple	.61	.81	.83

-- Indicates that a reliability coefficient was not reported.

* The reliability data for this sample is not really comparable to the other studies because the entire sample experienced violence. Under these circumstances, the CTS is a measure of <u>how much</u> violence occurs, whereas for non-clinical samples the highly skewed distribution (i.e. the fact that most couples are not violent) makes the violence index primarily a measure of whether violence occurred at all.

** Husband/Father means acts of aggression by the husband toward his wife or toward the child who completed the questionnaire. The same procedure was used for the Wife/Mother data. See Schumm et al. footnote 2.

A2-4

Table 3. Correlation of Spouse Report CTS Scores with Student Report CTS Scores

Conflict Tactics Scale	Correlation (r) for: Husbands (N=57)	Wives (N=60)
Reasoning	.19	-.12
Verbal Aggression	.51	.43
Violence	.64	.33

A2-5

Table 4. Percentage of Respondents Reporting One or More Acts of Physical Violence

Source of Data	% Violent in Last Year Husbands	Wives
Spouses*	9.1	17.9
Students*	16.7	9.5
Students**	11.3	11.4

*From Bulcroft and Straus, 1975 (Husband N = 57, Wife N = 60).
**From Straus, 1974a (N = 385).

Note: Tables N1 to N4 are not yet complete

Table N1. Annual Incidence Rates For Assaults Against Spouses and Children

Type of Intra-Family Violence[1]	Rate Per 1,000 Couples or Children As Reported by: Total	Husbands	Wives
A. VIOLENCE BETWEEN HUSBAND AND WIFE			
MINOR assaults during the yr (slap, push, etc)	150	144	154
SEVERE assaults (kick, punch, stab, etc)	63	53	71
ANY assaults during the year	161	156	165
MINOR assaults by the HUSBAND	109	105	112
SEVERE assaults by the HUSBAND ("wife beating")	34	14	50
ANY assaults by the HUSBAND	116	108	123
MINOR assaults by the WIFE	116	114	118
SEVERE assaults by the WIFE	48	50	46
ANY assaults by the WIFE	124	125	124
B. VIOLENCE BY PARENTS	Total	Fathers	Mothers
ANY assaults against 0-2 year olds	575		
ANY assaults against 3-6 year olds	894		
ANY assaults against 7-10 year olds	777		
ANY assaults against 11-14 year olds	539		
ANY assaults against 15-17 year olds	287		
SEVERE assaults against 0-2 year olds	79		
SEVERE assaults against 3-6 year olds	143		
SEVERE assaults against 7-10 year olds	143		
SEVERE assaults against 11-14 year olds	107		
SEVERE assaults against 15-17 year olds	70		
VERY SEVERE assaults against 0-2 year olds	22		
VERY SEVERE assaults against 3-6 year olds	26		
VERY SEVERE assaults against 7-10 year olds	24		
VERY SEVERE assaults against 11-14 year olds	25		
VERY SEVERE assaults against 15-17 year olds	21		

Footnotes for Table N1

Section A rates are based a nationally representative sample of 6,002 currently married or cohabiting couples interviewed in 1985. Note: The rates in Section A differ from those in Straus and Gelles (1986) because the rates in that paper are computed in a way which enabled the 1985 rates to be compared with the more restricted sample and more restricted version of the Conflict Tactics Scale used in the 1975 study.

Section B rates are based on the 1985 sample of 3,232 households with a chil age 17 and under. Note: The rates shown in section B differ from those in Straus and Gelles (1986) for the reasons given in footnote 1.

Table N2. Annual Incidence Rates For Assaults Against Siblings and Parents, 1975*

Type of Intra-Family Violence[1]	Rate Per 1,000 Children As Reported by: Total	Fathers	Mothers
A. VIOLENCE AGAINST SIBLINGS			
ANY assaults on sibling by child 3-6	823		
ANY assaults on sibling by child 7-10	829		
ANY assaults on sibling by child 11-14	741		
ANY assaults on sibling by child 15-17	557		
SEVERE assaults on sibling by child 3-7	592		
SEVERE assaults on sibling by child 7-10	553		
SEVERE assaults on sibling by child 11-14	442		
SEVERE assaults on sibling by child 15-17	309		
B. Assaults AGAINST PARENTS			
ANY assaults on parent by child 3-6	327		
ANY assaults on parent by child 7-10	136		
ANY assaults on parent by child 11-14	92		
ANY assaults on parent by child 15-19	90		
SEVERE assaults on parent by child 3-6	213		
SEVERE assaults on parent by child 7-10	66		
SEVERE assaults on parent by child 11-14	28		
SEVERE assaults on parent by child 15-17	35		

* The rates in this table are based on the 1975-76 study because data on violence by children was not collected in the 1985 survey.

for Frequency of Violent Acts

Table N3. Percentile Norms Based On Responses of Husbands, National Family Violence Resurvey Sample, 1985

Centile	Couple					Husband-to-Wife					Wife-to-Husband					Centile
	RS	VB	MV*	SV*	AV*	RS	VB*	MV*	SV*	AV*	RS	VB	MV*	SV*	AV*	
1		1														
5		1														1
10		1														5
15		1														10
20		1			1											15
25		1														20
30		1		1											1	25
35		1										1	1			30
40		1			2				1	1						35
45		2					1									40
50		2			3											45
55		3	2												2	50
60		4	3	4								2	2	3		55
65		5	4	5			2			2		3	3			60
70		6	6	6				2		3			4	4		65
75		6	7	8			3	3				4	5	5		70
80		8	8	9				6				5	6	6		75
85		9	10	12			4	9		4		6	8	8		80
90		12	16	18			6	22		7		8	10	10		85
95		16	50	26			8	25		9		9	16	16		90
99		45	75	83			16			25		12	29	24		95
												46	75	83		99

RS = Reasoning, VB = Verbal Aggression, MV = Minor Violence, MV = Severe Violence, AV = Any Violence
The norms for Reasoning and Verbal Aggression cover all cases. The norms for the three violence indexes are for cases in which at least one violent incident occured. See text.

Table N4. Percentile Norms Based on Responses of Wives, National Family Violence Resurvey Sample, 1985

Centile	Couple					Husband-to-Wife					Wife-to-Husband					Centile
	RS	VB	MV*	SV*	AV*	RS	VB*	MV*	SV*	AV*	RS	VB	MV*	SV*	AV*	
C. RAW SCORES AS REPORTED BY WIVES																
1																1
5																5
10																10
15																15
20		1		1					1							20
25			1			1										25
30								1						1		30
35											1					35
40				2								1				40
45		2														45
50		3		3					2							50
55			2			2										55
60		4	3	4		3	2		3		2			2		60
65		5		6			3				3			3		65
70		6	4	7			4		4			2				70
75		8	8	8		4	5		5		4	3		4		75
80		8	10	11		6	8		7		5			6		80
85		10	12	14		7	12		9		6	4		7		85
90		18	17	22		9	14		16		8	6		9		90
95		34	33	45		24	22		35		9	8		12		95
99		79	80	120		43	80		88		15	23		20		99
											48	47		71		

RS = Reasoning, VB = Verbal Aggression, MV = Minor Violence, MV = Severe Violence, AV = Any Violence
The norms for Reasoning and Verbal Aggression cover all cases. The norms for the three violence indexes are for cases in which at least one violent incident occured. See text.

ASK IN SEQUENCE Q35a Q36a AND (IF NEVER ON BOTH Q35a AND Q36a) ASK Q37a. THEN ASK Q35b, Q36B AND (IF NEVER ON BOTH Q35b AND Q36b) ASK Q37B, ETC.

Q35. No matter how well a couple get along, there are times when they disagree, get annoyed with the other person, or just have spats or fights because they're in a bad mood or tired or for some other reason. They also use many different ways of trying to settle their differences. I'm going to read some things that you and your (spouse/partner) might do when you have an argument. I would like you to tell me how many times (Once, Twice, 3-5 times, 6-10 times, 11-20 times, or more than 20 times) in the past 12 months you (READ ITEM)

Q36. Thinking back over the last 12 months you've been together, was there ever an occasion when (your spouse/partner) (READ ITEM)? Tell me how often (he/she)...

Q37. (IF EITHER "NEVER" OR "DON'T KNOW" ON ITEM FOR BOTH Q35 AND Q36, ASK Q37 FOR THAT ITEM) Has it ever happened?

	Q35. Respondent In Past Year 1 = Once 2 = Twice 3 = 3-5 Times 4 = 6-10 Times 5 = 11-20 Times 6 = More than 20 0 = Never(don't read)	Q36. Spouse In Past Year 1 = Once 2 = Twice 3 = 3-5 Times 4 = 6-10 Times 5 = 11-20 Times 6 = More than 20 0 = Never(don't read)	Q37.For items marked "Never" on both Q35 and Q36: Has it Ever Happened? 1 = Yes 0 = No
A. Discussed an issue calmly	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
B. Got information to back up your/his/her side of things	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
C. Brought in, or tried to bring in, someone to help settle things	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
D. Insulted or swore at him/her/you	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
E. Sulked or refused to talk about an issue	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
F. Stomped out of the room or house or yard	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
G. Cried	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
H. Did or said something to spite him/her/you	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
I. Threatened to hit or throw something at him/her/you	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
J. Threw or smashed or hit or kicked something	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
K. Threw something at him /her/you	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
L. Pushed, Grabbed, or shoved him/her/you	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
M. Slapped him/her/you	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
N. Kicked, bit, or hit him/her /you with a fist	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
O. Hit or tried to hit him/her /you with something	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
P. Beat him/her/you up	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
Q. Choked him/her/you	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
R. Threatened him/her/you with a knife or gun	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0
S. Used a knife or fired a gun	1 2 3 4 5 6 0	1 2 3 4 5 6 0	1 0

1. The question numbers are from the 1985 National Family Violence Resurvey interview schedule as given in the appendix to Gelles and Straus, 1988. The CTS is not copyrighted. Anyone may therefore use or modify it without permission. However, if you are thinking of using the instrument, write for papers which might apply to your proposed use. In addition, I would appreciate copies of any reports using the CTS so that the bibliography can be updated for the benefit of other scholars.