From Murray A. Straus and Richard J. Gelles. Physical Violence In American Families: Risk Factors and Adaptations To Violence In 8,145 Families. New Brunswick, NJ: Transaction Publishers, 1990. This book contains several chapters that are important for users of the CTS, including normative tables. Those chapters and certain other materials era reprinted in the CTS Manual available from the Family Research Laboratory, University of Neu Hampshire, Durham, NH 03824.

CTS4

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

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The first study reporting data on intrafamily physical violence obtained by means of the Conflict Tactics Scales (CTS) was published in 1973 (Straus, 1973). By January 1989 this instrument had been employed in more than two hundred papers and five books. It is also being used for assessment in clinical work. As might be expected, the largest number of publications are by scholars associated with the Family Research Laboratory at the University of New Hampshire, where the instrument was developed. However, almost 100 empirical studies by other investigators have been located. There is also a substantial literature criticizing the CTS, including at least nine books and articles that devote major sections to the CTS. Feminists have been particularly critical of the instrument for allegedly understating victimization of women and overslating violence by women.'

Despite these long-standing criticisms, the CTS continues to be the most widely used instrument for research on intrafamily 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 criticism of the CTS, it is important to have a comprehensive assessment of this instrument. Researchers need lo 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.[2] To achieve this, the chapter

1. Brings together and evaluates criticisms of the CTS as a measure of violence between couples so that users are alerted to 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 that 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 B is an extension of this chapter for readers who use the CTS in their own research or clinical practice. It describes and evaluates alternative methods of scoring the violence items of the CTS that have been developed since the original publication of Chapter 3 in 1979. Appendix B also presents comprehensive normative tables for tactics used in the parent-to-child and spouse-to-spouse roles.

Two important issues are not covered in this chapter because they are so important that they warrant separate treatment. One of these is whether wife beating and child abuse should be measured by the occurrence of assaults, by whether injuries result, or by both. This is covered in Chapter 5. Another issue not covered in this chapter is use of the CTS to measure child abuse. Although much of this chapter is also relevant for measuring child abuse, there are enough unique issues that a separate paper was written specifically about child abuse (Straus, 1988).

Description of the CTS

Readers unfamiliar with the CTS should first read Chapter 3, which is the basic methodological and theoretical source on the CTS. A very brief summary is given in Chapter 1.

There have been three versions of the CTS: The first ***(Form A)*** was developed as a self-administered questionnaire and was used with a sample of college students in 1971–1972 (Straus, 1973, 1974). Form N expanded

the list of violent acts and was used in face-to-face interviews with the 1975 Family Violence Survey. *Form R* was used in the 1985 Family Violence Resurvey, with additional items for choking and burning or scalding and slightly different response categories (see Appendix B).

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 question (e.g., Gelles and Straus, 1988) and some have used more.[3]

Criticisms of the CTS Violence Measures[4]

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 that underlie each instrument in choosing 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 intrafamily violence. These criticisms described below informed the design of the 1985 survey. Chapter 9 on gender and violence presents findings that address many of these criticisms empirically.

Restricted to Conflict-Related Violence

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 intrafamily 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 responses" (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.

Informal discussion with some respondents, however, revealed that the danger of missing violence that was not conflict-related was small. A number of respondents ignored the literal instructions and reported acts 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."

Although the introductory statement specifically includes expressive violence in the phrase "or just have spats or fights because they're in a bad mood or tired or for some other reasons," it continues to emphasize behavior in response to specific conflicts. The possihility therefore remains that the CTS underestimates 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

The use of a fixed response category may force respondents to deal with concepts that 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 have been determined to be almost universally meaningful in in-depth interviews. Moreover, other investigators, including strident critics of the 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 lo overt acts, rather than to opinions, attitudes, or beliefs. In the case of overt acts, although it may also be important to determine the subjective meaning of the acts, the primary problem is completeness arid accuracy of recall. A checklist of acts, such as the CTS, tends to remind respondents of things that might otherwise be forgotten and therefore results in a higher incidence of violence than open-ended questions (Smith, 1987).

There must be hundreds of ways to be physically violent to another family member. Yet the violence scale of Form R lists a total of only 14 violent acts. For example, pushing a spouse down the stairs is a highly dangerous act that is not included in the CTS. The CTS was restricted to relatively few acts of violence because it was developed for use in survey research. Interview time must also be allocated for the Reasoning and Verbal Aggression scales, as well as to the other variables whose relationship to the violence measures are to be tested, such as data on possible causes or consequences of family violence. Further, the list of CTS items

nust be repealed for each of the family role-relationships of interest. In he 1975 survey. for example, conflict tactics in five separate roles were neasured: child-to-child, parent-to-child, child-to-parent, husband-to-wife, and wife-to-husband. That makes a total of 8 × 5 = 40 violent items, which was believed to be the limit of many respondents' patience.

There might also be objections lo the specific acts included in the CTS and to the omission of other acts. The acts were selected to enable the same items to be used to measure violence in each of the five role-relationships listed above. They therefore needed to be sufficiently general to be appropriate for each role-relationship. Thus placing someone on a hot radiator, although relevant for measuring child abuse, was not felt to be appropriate to measure violence between siblings or spouses. Time constraints are also the reason why several violent behaviors are combined in two of the CTS items (e.g., "Kicked, bit, or hit with fist" comprise item N). Kicking and biting are not necessarily equivalent acts, especially in regard to potential outcomes. However, even if separate items were given for each violent act, equivalence would still be problematic. Kicking a man in the shins, for instance, is not the same as kicking a man in the groin, and both of these instances are distinct from kicking a pregnant woman in the abdomen. Further, lack of exact equivalence applies to all the CTS items. "Throwing something" may refer to a pillow or a brick; "stabbing with a knife" may refer to a stab in the arm or in the chest. Questions that obtain data at this level of specificity are rarely possible in survey research; this is one of the many reasons why in-depth qualitative research is also needed.

The CTS was revised for the 1985 Resurvey to include "choked" for spouses and "burned or scalded" for violence by parents. Table 4.1 shows that the additional items resulted in increased rates, especially for severe violence. The one additional severe violence item increases the rate of severe assaults by 4 to 9%.

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. Waving done that makes more clear the distinction between threats

TABLE 4.1
Effect of Additional Severe Assault Items in Form R on Child Abuse and Spouse Abuse Rates

Type of Violence	Rate per 100		Increase
	Form N	Form R*	
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	4.5	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.

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.

Response distortion was investigated in the 1975 sample by asking each respondent about his reactions to the instrument, including whether he 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 ques-

tions accurately. But for what it is worth, only eight tenths of one percent (0.8%) 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 seasons given in 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.

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 parent 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 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). 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 the resulting data would be extremely skewed. (The distribution might be 1% versus 99% 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 an impossibly skewed distribution would not result from a three- or six-month, or perhaps even a one-month, referent period.

Equates Acts That DifferGreatly 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 was mentioned in the first publication on the CTS (Chapter 3), but its importance was not emphasized. Moreover, the only normative data presented in that publication combine all forms of violence in a simple sum index.

Consequently, two slaps are counted the same as two knife attacks. Subsequently, this omission was partly rectified by giving separate rates for "severe violence." However, even the Severe Violence index may not be satisfactory, because it also includes acts that differ greatly in their seriousness. A "Severity Weighted" scale has also been developed that weights each item by its relative severity and the frequency with which it occurred. The specific method of computing this index is given in Appendix B.

Context Is Ignored

One of the most frequent criticisms of the CTS as a measure of spouse abuse 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 of (or disagreement withj the approach to research design that underlies the CTS. Our approach assumes that "context" *is* extremely important but that it is usually desirable 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; Steinmetz, 1977 for examples). The view that research using the CTS ignores context is also based on the assumption that quantitative research does not and cannot take context variables into account. In actuality, quantitative measures of context are highly developed and widely used under such labels as "interaction effects" and "specification" (for examples see the chapters in Part III and Linsky and Straus, 1987).

Why *context should be assessed separately.* There are several reasons for separating the measurement of the acts of violence and other tactics from the measurement of the context of those acts. One reason is that there are so many context variables that including all would make an impossibly long and cumbersome instrument. More important, combining the CTS acts with the context variables assumes a relationship, rather than testing whether such a relationship exists. For example, if injury were part of the CTS violence measure, it would preclude investigating the extent to which the assaults that are measured by the present version of the CTS result in injuries. Chapter 5 presents a number of other reasons

why it is usually desirable to measure injury separately from the assaults that cause the injury.

Methods of combining context measures with the CTS. Although the CTS deliberately measures the occurrence of so-called context variables separately from the occurrence of the violent acts, as mentioned above, the CTS is intended to provide the framework for obiaining information on whatever context measures are needed for a specific study or clinical purpose. Almost any context issue can be investigated by adding questions that 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 ask if the respondent and his or her partner had been drinking at the lime, how much they had drunk, etc., when the violence occurred as was done in the study reported in Chapter 12. The interview can ask the context questions in relation to each violent act or just the most recent occurrence of the most severe type of assault that was reported in response to the CTS Violence items. Chapters 9 and 12 are examples of such analyses using the 1985 Resurvey data.

ignores Who Initiates 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 rare of wife-to-partner violence that has since been confirmed by many studies (see Chapter 6). Straus (1980) attempted to determine how much of this was self-defense from assaults initiated by men. Among those couples reporting one or more violent incidents, about halt' of them reported both partners had engaged in assaultive behavior, about one quarter of them the husband had committed the only violent acts, and in the remaining 25% the wife had committed the oniy violent acts. Data from the 1985 Resurvey (reported in Chapter 9) suggest that about half of all marital violence is initiated by wives.

"Minor" Versus "Severe" Classification Has No Empirical Basis and Distorts Gender Differences

As indicated in Chapters I and 3 (also Appendix B), the Physical Violence items in the CTS are classified into two levels of severity on the basis of their presumed risk of injury, The occurrence of items classified as "Severe Violence," such as kicking, punching, and attacks with ob-

jects, is used to estimate the extent of "child abuse" and "wife beating" in the United States'and to identify such cases for further analysis.

The need to distinguish between minor and severe violence 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 that 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 public still seems to make the distinction between "only" slapping or shoving a wife and "wife beating." Consequently, the distinction between minor and severe violence is also useful in identifying cases that approximate the concept of wife beating.

The distinction between minor and severe assaults is roughly parallel to the legal distinction between "simple assault" and "aggravated assault." An aggravated assault is an attack that is likely to cause grave bodily harm, such as an attack with a knife or gun, regardless of whether the object of the attack was actually injured.

Although the distinction between minor violence and severe violence is important and probably necessary, it is not without problems. One problem is that the classification of some acts as "minor" and some as "severe" was based on the ***assumption*** that the latter entail a greater risk of injury and this has never been demonstrated by empirical data. Egley (1988), however, found that the Severe Violence items characterized men in a treatment program and concluded that "most men don't enter treatment until violence has reached the severity of Straus' Wife Beating Index."

Another problem occurs because of gender differences in relative size and strength. Men, on average, are 3 inches taller, weigh 28 pounds more, and have better developed muscles than women. Therefore, the distinction between minor and severe violence may serve to understate male "minor" violence and overstate female "severe" violence. A frequent scenario in marital violence is that the husband is "only" slapping or shoving his wife. Then the wife, out of fear or anger, attempts to even the odds by kicking, punching, or using an object. In the CTS classification of violent acts, 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.

A related problem is that a slap or a punch by a 190 pound man is likely to be much more damaging 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 that correct the underestimation of minor

violence by males. For example, to correct for differences in the height and weight of each spouse, CTS scores 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. The latter procedure was used, for example, in Chapter 25 in an attempt to refine the identification of child abuse cases. The results, however, were almost identical to those obtained by simply classifying any occurrence of one of the Severe Violence acts as "child abuse." It seems unlikely that much is to be gained from such weighting systems. Moreover, as argued in Chapter 5, kicking, punching, and hitting with objects are abusive acts regardless of whether an injury occurs.

Does Mot Measure Process and Sequence

The CTS is basically intended to measure the extent lo 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 that 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 that led up to the most coercive act that was reported to have occurred and to provide further information about the nature of the conflict and how it was ultimately resolved.

Alternative Measures

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 intrafamily violence, a number of modifications as well as completely different methods may be used to measure family violence.

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 refers to the entire period of the marriage, not to the immediately preceding 12 months, it cannot be compared directly to the 12% 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.

The CTS has been administered 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 identity of 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. Alford (1982) used a modification of the CTS to obtain information on conflict tactics used in 26 different role-relationships, both within and outside the family.

It is clear that the CTS can be modified anti 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 are extremely important, but Chapter 10 shows they are far from the same thing as actual violence. Therefore, they should be measured by a separate scale, such as the one developed by Saunders *et al.* (1987). (2) Do not mix tactics, either in the phrasing of an item or in combining items to compute a scale. Alford's measure of "dispute styles," for example, combines "yell, scream, push, shove, hit, throw things, and make extremely insulting references" (Alford, 1982). Such a measure cannot differentiate between parents or spouses who "only" use verbal aggression from those who are both verbally and physically aggressive.

Alternative Abuse Measures

The CTS has been most widely used and most widely criticized as an instrument to measure violence between spouses. However, no satisfactory alternative has as yet been developed. The CTS has been less often used to measure child abuse, in part because more alternative child abuse measures are available.

The Index of Spouse Abuse (Hudson and McIntosh, 1981). This 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) has 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. Only four of the eleven items in the Physical Aggression scale (as given in the footnote to Appendix 1 in Hudson and McIntosh) are actual acts of physical aggression. The remaining items may be abusive in a broader sense (e.g., "My partner becomes surly and angry if I tell him he is drinking too much"), but are not physical acts of violence.

National crime survey. This is a carefully conducted survey that provides the most extensive data available on assaults between members of the same household because it is based on a sample of approximately sixty thousand households and is repeated annually. Nevertheless, the National Crime Survey (NCS) spouse abuse rate is only 0.2% (Gaquin, 1977–1978), compared to the raie of 16.1% found in the 1985 Resurvey using the CTS. The most likely reason for this tremendous discrepancy lies in differences between the context of the NCS vs. the Family Violence surveys. The NCS is presented to respondents as a study of crime, whereas our surveys are presented as studies of family problems. Only a minute proportion of assaults by spouses may be reported in the National Crime Survey, because most people think of being kicked by their spouse as wrong, but not a "crime" in the legal sense. See Chaprer 27, footnote I for additional information on use of the NCS to measure wife abuse.

National incidence study of child abuse and official reports, Child abuse cases that come to the attention of Child Protective Service (CPS) agencies under mandatory reporting laws form the basis for widely known and widely accepted statistics on child abuse in the United States (American Association for Protecting Children, 1986). However, many cases of child abuse may never be reported to CPS (Hampton and Newberger, 1985). The National Incidence Study (NIS) attempts to find unreported cases of child abuse, interviewing community professionals directly about abused children they are aware of. While the physical child abuse rate from the NIS was 26% higher than the rate indicated by CPS reports, the NIS rate is still much lower than the rate from surveys using the CTS. This is true because the CPS and NIS rates are best thought of as *intervention* rates, rather than true incidence rates, because the respondents were entirely service providers or law enforcement personnel (see Chapter 7 for other explanations for the discrepancies in these rates).

Emergency room protocols. While some victims of family violence do present to hospital emergency rooms for treatment, the intentional origin

of the injury is usually not divulged (Stark et al., 1981). Protocols have therefore been developed to identify abuse victims so that more appropriate treatment and referral can be provided (McGrath, et al., 1980; Pleck et al., 1987). The efficacy of such protocols was demonstrated in a study of hospital records that identified about 20% of female trauma cases as victims of intentional injury (Stark, et al., 1981).

However, for research purposes such protocols must be used with caution, since only a small fraction of abuse victims receive medical attention for injuries (bee discussion of injury earlier in the chapter). Nevertheless, emergency room data can be extremely useful if one is careful to define the subjects under study as "abuse victims who are beaten seriously enough to require medical treatment" and to make clear that this level of injury is rare even among severely assaulted victims.

*Randomized **response** technique.* This technique has been highly touted for use in surveys on sensitive subjects (Kolata, 1987; Warner, 3965). In its most commonly used format, respondents are given some randomizing device (like Hipping a coin) for selecting one of two unrelated questions, one sensitive and the other not, to answer. Respondents are thought to be more likely to give honest answers to the sensitive question because the researcher does not know which of the two questions was randomly selected. (Detailed guidelines for use of this technique are in Fox and Tracy, 1986). In theory, the technique is attractive because the researcher can promise the respondent complete anonymity of response.

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 two thousand 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 and Lewis (1987) asked "Have you ever sexually abused a child at any time in your life?" and obtained estimates of 17% and 4% in split samples of 1,313 in a national probability survey. The divergence of their two estiniates and the absence of associations with any other expected characteristics of sexual abusers led Finkelhor and Lewis lo 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 4.2. 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 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.

Factor Structure of the CTS

At the time the CTS was developed, the three taciics that 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 "discrirninant validity" (Campbell and Fisk, 1959) of the three tactics.

Straus analyses. Chapter 3 reports the results of a factor analysis of data using 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 reveal three factors that correspond to the three hypothesized dimensions: reasoning, verbal aggression, and physical aggression (violence). The factor loadings for each item are given in Table I 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 additional factor is represented by the Severe Violence index and suggests that the "minor violence" within the family is a somewhat distinct phenomenon from the repeated and severe assaults that characterize child abuse and wife beating.

Replications by others. Five studies have been located that report factor analyses on the CTS items. Although there are some differences in the findings, these analyses all found a factor structure that approximates the three originally postulated tactics of reasoning, verbal aggression, and physical violence.

TABLE 4.2
Alpha Reliability Coefficients for the Conflict Tactics Scales

Study	Perpetrator - Victim Relationship	Reason-ing	Verbal Aggr.	Physical Aggr.
Barling et al. 1987	Husband-to-Wife	.50	.62	.88
Mitchell & Hodon, 1983* (sample of battered women)	Husband-to-Wife	--	--	69
Schumm et al. 1982	Rural			
	Husband/Father**	--	.80	.96
	Wife/Mother	--	.78	.93
	Urban			
	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 how much violence occurs, whereas far 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.

Three of these studies analyze the CTS as a measure of marital violence. Two of them (Barling et al., 1987; Jorgensen, 1977) derived three component factors: reasoning, verbal aggression, and a single physical aggression factor. Hornung et al. (1981) derived four: the same reasoning and verbal aggression factors, one for physical aggression, and a separate factor for life-threatening violence (the threat or use of a weapon). The differentia-

ion of the Violence items into minor and severe violence factors is parallel to the findings from the analysis presented in Chapter 3 (summarized above).

The other two studies examine the CTS as a measure of parent-to-child or child-to-parent violence. Schumm et al. (1982) found the three basic Factors (physical violence, verbal aggression, and reasoning) in the self-reported behavior of 181 adolescents toward their parents. Eblen (1987) found that Verbal Aggression items mixed with Severe or Minor Violence items in parental behavior as reported by children from grades 5 through 8. The factor structure in Eblen's study also varied slightly by sex of parent. For fathers, it combined "*threatened* to hit or throw something" with the Severe Violence items; for mothers, Severe Violence combined with two acts of verbal aggression and "Threw you out of the house." The second factor for both parents combined other acts of verbal aggression with minor violence, plus "Sent you to your room" and "Grounded you." The third factor consisted solely of Reasoning items for fathers, but also included "cried" and two other items of negative affect among mothers.

Concurrent Validity

Validity is the most important and the most difficult aspect of an instrument to ascertain. In part this is true because of inherent difficulties in obtaining data that are 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 subtests. 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. 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.[6]

Studies of agreement between family members.[7] One approach taken to investigate the concurrent validity of the CTS has been to examine the level of agreement between CTS scores as reported by more than one family member. The importance of viewing couple agreement as an indication of the validity of the CTS as a measure of spouse abuse is stressed by Edelson and Brygger (1986) and Szinovacz (1983).

Treatment samples. Two of the studies examine spousal agreement in clinical samples of men who were in treatment for having assaulted their wives (Browning and Dutton, 1986; Edelson and Brygger, 1986). Edelson and Brygger (1986) urge caution in the use of the CTS as a diagnostic and evaluation tool in treatment programs for assaultive men, since these men's self-reports may be inaccurate (page 377). At the time of intake, they found women reported higher rates of all 13 violent acts in their version of the CTS, including 4 that 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, grabbed, or shoved" item.

Browning and Dutton (1986) found that each partner tended to under-report his or her own violence in his or her treatment sample. 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. The correlation between spouses for husband's violence was .65, but only .26 for violence by the wife.

Community samples. The first study reporting concurrent validity for the CTS compared college students' reports of family violence with reports by their parents (Bulcroft and Straus, 1975). The results, summarized in Chapter 3, indicated a moderate level of concurrent validity as measured by correlation coefficients, and rates of family violence as reported by students and their parents.

Jouriles and O'Leary (1985) present their findings as an indication of "interspousal reliability," seeming to implicitly assume the validity of the CTS violence measure. They compare husbands' and wives' responses on the CTS Violence items among 65 couples beginning marital therapy and

37 couples in a "community sample." For spouses in the therapy sample, they found 72% agreement with regard to both the husband's violence and the wife's violence. The percentage of agreement was only slightly higher in the community sample (77% for husband's violence and 80% for wife's violence). 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—the 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's (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 the sex of respondent. However, when comparing the report of one spouse with the report of the other spouse, she found 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 or both spouses, the rate is about 50% higher than rates based on the report of only one spouse alone.

Social Desirability 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, Celles, and Steinmetz, 1980:33). 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 is 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 be-

tween having been the victim of violence by a spouse and depression (Chapters 9 and 24) 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."

Treatment samples. In an analysis of a clinical sample of 52 battered women, Saunders (1986) found little evidence that social desirability response set is related to the CTS scores reported by these women. The only husband-to-wife violence item found to be related to social desirability ($r = -.28$) was slapping, and this correlation was not statistically significant in view of the experiment-wise error rate. The only wife-to-husband item related to social desirability was wife's severe violence in response to husband's severe assaults ($r = .36$), and this relationship was in the opposite direction than expected.

Saunders and Hanusa (1986) also utilized the Mariowe-Crown Social Desirability scale in a pre-test–post-test study of treatment outcomes in a sample of 90 abusive men. They found that after social desirability was partialed out, the measured outcome effects of the treatment program remained significant.

Community samples. Newberger (1987) examined the relationship of the social desirability response set to both the marital and parent-to-child CTS scores in a community sample of 34 mothers. The CTS scores were not found to be correlated with the Marlowe-Crown Social Desirability scale scores of these women. However, Arias and Beach (1987) did find social desirability to be correlated with the CTS scores reported by a community sample of 90 couples. The correlations of the MCSD to the CTS violence index were −.23 for violence by husbands and −.32 for violence by wives. Both correlations arc 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. Arias and Beach's most important finding was similar to that of Resick and Reese (1986): controlling for social desirability does not eliminate the relationship between the CTS and other demographic, personality, and marital relationships variables.

Summary of Concurrent Validity and Social Desirability Effects

While the research indicates that social desirability presents little threat to the validity of the CTS, most of the agreement studies reviewed found

arge discrepancies between the reports of violence given by husbands and by wives. These often take the form of under-reporting by the perpetrator. t is therefore important to obtain data from both spouses, particularly if CTS scores are used for treatment decisions or program evaluation. In particular, if the severity of violence is of interest to the researcher, separate analyses by gender of respondent are called for, since results given in Chapter 9 indicate that women are more likely to report severe assaults than are men.

However, when the CTS is used for basic research where the issue is not the absolute level of violence but the relationships between variables, obtaining data from both spouses becomes less crucial. This can be seen in the simiiarity in the overall (i.e., aggregate) rates based on male and female subjects and the way relationships between variables are parallel regardless of the gender of the respondent. Figure 1 in Szinovacz (1983) illustrates the relationships of demographic measures (e.g., education or income) to husband's or wife's violence, plotting the reports of husbands and wives separately. The figure shows essentially the same curves regardiess of which spouse's reports are plotted. Further, in data gathered from one spouse only (e.g., the two National Family Violence Surveys), Chapter 9 reveals that findings are typically replicated when female and male respondents are considered separately.

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 correiated 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 that also influence subjective feelings of hunger.

There is even more ambiguity as to the size of the coefficient that 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; if (as in most theories) only a weak bivariate relation is posited because of the numerous other factors that are involved, then low but statistically significant correlations support the construct validity of the measures used to test that theory.

11 follows from the above that the construct validity of the CTS can be assessed hy the degree to which the CTS measures produce findings that

are consistent with theoretical or empirical propositions about the variable that the instrument purports to measure. Chapter 3 gives a summary of the construct validity evidence that was available ten years ago. Since then, a large number of studies using the CTS have been published and they provide much more evidence. In fact, the number is so great that only some can he 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 (see Chapter 3 and Carroll, 1977; Straus, Gelles, and Steinmetz, 1980) are consistent with many other empirical findings and social learning theory and have 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 has 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 and unemployment
    - Stress and lack of community ties
    - Youthfulness
    - Heavy drinking
- Comparisons in Chapter 9 of women who experienced relatively minor violence and women who experienced severe violence in 1985 with women who had nor been attacked by their husbands show that the more severe the assault, the greater the probability of physical and mental health problems.
- Gelles and Straus (Chapter 24) 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 two to four times higher rates of:
    - Temper tantrums and troublemaking friends
    - Failing grades in school
    - Disciplinary problems in school and at home
    - Physically assaultive behavior at home and elsewhere
    - Vandalism, theft, and arrest
    - Drinking and drug abuse

Many relationships indicative of the construct validity of the CTS Violence scores have been found by other investigators, for example:

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

- Violent couples identified with the CTS, compared to non-violent couples matched on the Marlowe-Crown Social Desirability scale. are characterized by asymmetry in power, high conflict, lack of 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).

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 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. In still other cases, real problems and limitations that are inherent in the instrument as it is currently structured are identified and must therefore be kept in mind when interpreting the results uf research using CTS data.

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, due to the srnall number of items in each scale. Selection of these few items was necessary for the CTS to be sufficiently brief so as to be suitable for survey research. The concurrent validity measures of agreement between family members 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 producing findings that tend to be consistent with previous research (when available), consistent regardless of gender of respondent, and theoretically meaningful.

Ironically, the weakest aspect of the CTS is the scales that have received the least criticism: Reasoning and 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 tacrics for resolving conflicts, as was done by Straus (1974) and Steinmetz (1978).[3]

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, inoderate reliability and concurrent

validity, and the strong evidence of construct validity, suggests that the CTS is the best available instrument to measure intrafamily violence.

Notes

It is a pleasure to express appreciation to Michael Martin, David M. Klein, and Maximiliane Szinovacz for comments and suggestions that aided in the revision of this chapter.

1. 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 pear 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 nnn grata for publishing data on violence by women. The second irony is that the CTS has provided and continues lo provide the most powerful "hard data" on the extent of wife beating. These data have been used in countless communities to help build the case for shelters and other services needed by battered women and have 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) are "defects" that strengthen the case for women because when this information is obtained, it turns out that women initiate as often as men and the injury rate is actually very low. See the sections on initiation in Chapter 6 and on injury in Chapters 5 and 9.
2. This is an appropriate place to clear up a misunderstanding about who may use the CTS. Although the article that serves as a manual for the CTS (Straus, 1979) is copyrighted, 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 the CTS 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.
3. 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 Chapter 13, Yllo 1978, and Yllo and Straus, 1981.
4. The analysis in this section focuses mainly on criticisms of the CTS as a measure of spouse abuse. However, many points apply regardless of whether the application is to spouse abuse or child abuse.
5. By "incompatible" I am referring to what is possible within the scope 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 afield or research issue, it is essential that this type of triangulation occur, because each approach brings into focus aspects of a phenomenon that 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. 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.

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* that 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 chapter and, more important, 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 thal of the overall instrument, which of course is the reason for using multi-item tests rather than single items.

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

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