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# Predicting Attitudes toward Violence

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Violence has been a conspicuous part of American life during the last few years (1). Assassinations (2), riots (3), student disruption (4), and violent crime, which is increasing in proportion to the population (5), have all contributed to the aura of violence in this decade. Moreover, there has historically been a great deal of violence in American life (6). Indeed, some authors contend that most major social movements in the United States have been accompanied by violence. When violence is considered in its historical perspective, it is clearly of the utmost importance to develop and test a theoretical model capable of predicting violent behaviors.

As a first step in this quest, a model designed to predict attitudes toward violence was developed and tested. It was assumed that attitudes are likely to be reflected by behaviors, and that a model capable of predicting attitudes toward violence could later be modified to explain part of the variance in predicting behavior. To test this model, a survey was taken of attitudes toward violence in a representative random sample of 1374 American men between the ages of 16 and 64 (7). The men were interviewed in the coterminous United States in the summer of 1969, and the final response rate was 80 per-

cent. Black men were sampled at a higher rate than others, thus the final sample included 303 blacks.

Measuring attitudes toward violence is an important venture in its own right. One of the characteristics of contemporary American life is the extent to which the mass media expose us to violence. For example, the question of whether or not television increases aggressive and violent behaviors was considered so crucial by the surgeon general that he established a major committee to investigate the problem (8), even though the staff of the National Commission on the Causes and Prevention of Violence had already published an extensive monograph on the subject (9). If the mass media can influence people to act more aggressively and violently, as may be the case, one must ask how such influence is exerted. Do the media simply serve as a model for imitation (10), or do the messages they project modify fundamental social values that inhibit or facilitate violent behaviors?

Many people think of violence as primarily expressive actions generated by frustration and fueled by anger, possibly because much of the work on aggression by social psychologists has developed along this line, beginning with the studies of Dollard *et al.* (11). These studies served as the foundation for the work of many others (12). However, as Berkowitz (13) points out, violence may be primarily instru-

mental—neither directly related to frustration, nor accompanied by anger. Instrumental violence can be used as a tool for achieving a variety of goals, some of which are political (14). For example, it may be used to force a change in the distribution of power in situations where persuasion and influence cannot be used successfully (15), or it may be used as a tool to maintain the status quo. Instrumental violence can also be used for purely individual purposes, such as gaining money by committing robbery.

Clearly, individuals might hold quite different attitudes toward different kinds of violence. One would not expect the same person to approve of both violence to maintain the status quo and violence to produce revolutionary change. Consequently, the model developed to explain attitudes toward violence specified that types of violence must be differentiated. The survey focused mainly on measuring attitudes toward violence for social change and violence for social control.

## The Model

For any particular set of circumstances and for any particular person, the level of violence considered to be justifiable may be regarded as the resultant of opposing forces, some of which tend to drive the level down until no violent act is perceived as justifiable and others of which tend to drive the level up until acts of extreme violence become justifiable. Among these forces are the following.

1) *Basic cultural values against violence.* The Judeo-Christian ethic, which is widely espoused in this country, states that "Thou shalt not kill." In addition, a prominent theme in the New Testament is the notion of the golden rule—that is, that one ought to treat one's neighbors as one would like to be treated oneself. Both of these

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injunctions seem directly related to the problem of violence, and both should act to mitigate the justification of violent behaviors.

2) *Basic cultural values in favor of violence.* The Bible, in addition to its gentler moods, also provides the basis for the development of values that are more sanguineous than loving. "Eye for eye, tooth for tooth, hand for hand, foot for foot" provides grounds for a good deal of violence of one kind or another. Moreover, this country has traditionally glorified the hard-riding, straight-shooting frontiersman, who settled arguments with the action end of his gun in calm disregard of legal prescriptions and processes (16). This aspect of our heritage has been widely popularized by the mass media (9). In addition, some concepts of masculinity imply positive attitudes toward violence, not to mention the positive attitudes that are implicit in long-established traditions of self-defense. To the extent that an individual cleaves to such values, he should be likely to justify the higher levels of violence.

3) *Identification with the person or group committing the aggression.* The extent to which the individual perceives himself to be allied with the membership, motives, and goals of the aggressor can act to determine the extent to which he will perceive a particular act of violence as justifiable. For example, if the individual perceives the aggressor in negative terms, he is less likely to justify the aggressor's violent behavior than that of a neutral party or an aggressor with whom he feels allied. Thus, negative identification with the aggressor will act as a force to make violence appear less justified.

4) *Identification with the victims of aggression.* The person or group that is a victim of violence is also the object of identification that can range from quite positive to negative. The more positively an individual identifies with the victim of a violent action, the less likely he is to justify violence committed against that group or person. Conversely, categorizing members of a group as aliens or out of the range of identification can be used as a justification for violence (17). For example, some Southerners have regarded blacks as a lower form of life, and other ethnic or social groups may be perceived similarly. Taylor (18) has suggested that thinking of Vietnamese citizens as "gooks" or "dinks" makes it easier to justify brutal treatment of both prisoners and civilians. Similarly,

Response	Almost always (%)	Sometimes (%)	Hardly ever (%)	Never (%)	Total (%)
The police should let it go, not do anything.	3	9	11	77	100
Police should make arrests without using clubs or guns.	30	51	10	9	100
Police should use clubs, but not guns.	15	65	12	8	100
The police should shoot, but not kill.	14	47	22	17	100
The police should shoot to kill.	4	26	19	51	100

during World War II, Americans were horrified when Hitler killed several thousand Allied civilians by bombing Rotterdam, but expressed little concern when over 100,000 enemy civilians were killed in the Allied fire bombing of Dresden (19). In short, it seems reasonable to suggest that negative identification with the victim of a violent action serves to increase the level of violence that is seen as justifiable.

5) *Definition of violent behavior.* To the extent that a behavior, however forceful and destructive, is not regarded as violence, it will not be necessary for the individual to justify the action in the terms listed above.

#### Attitudes toward Violence

One of the first tasks in the survey was to develop scales to measure attitudes justifying violence for social control and attitudes justifying violence for social change. The former scale was developed from a set of five questions, repeated three times during the interview. Each time the respondent was asked how much force the police should use. The first scenario was one in which hoodlum gangs destroyed property and terrified citizens; the second specified a campus disturbance in which there

was "a lot of property damage"; the third was a ghetto disturbance. In each case the respondent was asked whether the police should "let it go," "make arrests without using clubs or guns," "use clubs but not guns," "shoot but not to kill," or "shoot to kill." For every item the recommendation could be made to use a given method "almost always," "sometimes," "hardly ever," or "never."

Tables 1 and 2 give the percentage distribution of responses to the questions asking how the respondents felt the police should handle ghetto riots and campus disturbances. There are interesting patterns in these statistics. The respondents' "center of gravity" is toward minimal rather than maximal force, arrest, or use of clubs without guns. But a substantial majority support the use of guns at least sometimes. The largest break is between the percentage of respondents who felt that shooting but not killing is appropriate and the percentage who felt the police should shoot to kill "almost always" or "sometimes." It is known that the use of firearms in any kind of assault greatly increases the probability of death (20); it may be that respondents who felt that the police should shoot but not kill anyone in the process might have a somewhat optimistic notion about the accuracy with which guns can be used.

Response	Almost always (%)	Sometimes (%)	Hardly ever (%)	Never (%)	Total (%)
The police should let it go, not do anything.	4	12	14	70	100
Police should make arrests without using clubs or guns.	38	49	6	7	100
Police should use clubs, but not guns.	16	60	15	9	100
The police should shoot, but not to kill.	16	32	25	27	100
The police should shoot to kill.	3	16	19	62	100

Table 3. How much violence is necessary to produce change needed by blacks? ( $N = 1374$ ).

Response	Agree a great deal (%)	Agree some- what (%)	Disagree some- what (%)	Disagree a great deal (%)	Total (%)
Changes can be made fast enough without action involving property damage or injury.	58	24	12	6	100
Protest in which some people are hurt is necessary for changes to come fast enough.	6	17	22	55	100
Protest in which there is some property damage is necessary for changes to be brought about fast enough.	6	19	22	53	100
Protest in which there is much property damage is necessary before changes can be brought about fast enough.	4	6	16	74	100
Protest in which some people are killed is necessary before changes will take place fast enough.	4	5	7	84	100

Opinions referring to how much force the police should use in the three scenarios were combined into a scale—the violence for social control index. The higher the score on this index, the more police force the respondent justifies.

Also developed in the survey were scales measuring attitudes toward how much property damage and personal injury the respondents felt was necessary to bring about social change. Specifically, the respondents were asked how much violence is necessary to bring about changes of the type needed by students, needed by blacks, and needed in general. Table 3, which shows the amount of violence American men typically think necessary to produce social change, gives the responses to the question of how much violence is necessary to bring about changes needed by blacks. By far the majority of Americans agree that changes can be made fast enough without property damage or injury, but sizable minorities think some violence is necessary to bring about changes fast enough.

Responses to the three sets of questions about how much property damage and personal injury are necessary to bring about social changes "fast enough" were combined into a scale—the violence for social change index. The higher the score on this index, the more the respondent thinks property damage and personal injury are necessary to bring about change fast enough.

It should be noted that the phrasing of the question is such that agreement

with the statement does not necessarily mean that the respondent himself endorses or would participate in violence to bring about social change, merely that the respondent feels changes will not occur at a reasonably rapid rate without violence. One interpretation of the violence for social change index is that it is a measure of the cynicism with which American men regard the ability or willingness of the society to remedy its problems.

Violence for social control, as reflected in the index, appears to be everybody's business. Although there were some differences associated with the demographic characteristics of the respondents, no one group had a corner on justifying such attitudes. There is a tendency for the more educated and the young to recommend less stringent measures, but differences in attitudes associated with demographic characteristics tend to be small. Race is the one exception to this dictum; black men recommend lower levels of violence on the violence for social control index than do white men.

In the case of the violence for social change index, there is also a slight tendency for the better educated to see less necessity for the use of violence. However, there is a substantial difference between blacks and whites, black men agreeing more often that protest involving property damage or bodily injury is necessary to bring about changes fast enough. In contrast to 25 percent of American men generally, 49 percent of black men think some property damage is necessary to bring about

social change for blacks fast enough, and 27 percent of black men, in contrast to 9 percent of men generally, think protest involving some deaths is necessary to bring about change of this type.

#### Values in Relation to Attitudes toward Violence

The following analysis documents the extent to which the postulated model is capable of predicting the justification of violence. For this purpose, relations between the independent variables (those that measure identification, values, and rhetoric, including all of the scales that fall into those categories) and attitudes toward violence are analyzed in a restricted subset of the sample. In the case of the violence for social control index, only those data obtained from respondents whose answers to the questions adhered to a strict set of logical criteria are used. These data are referred to as consistent data. An analysis of attitudes toward violence, as expressed on the violence for social change index, reveals significant interactions between attitudes justifying violence and other variables because of race; therefore, only the data for black men are presented.

In studying the tendencies of American men to justify violence, it is important to understand the effects of values, both those that condone and those that condemn violent acts. Specifically, five values were studied: retributive justice, kindness, self-defense, the worth of people relative to property, and humanistic ideals relative to more conservative-materialistic attitudes. All of these values are related to the justification of violence, although two of them are more strongly related than the others. These two values, both of which have a great deal of support among American men, are retributive justice and self-defense. The exact items presented to the respondents and the percentage distribution of the responses are given in Tables 4 and 5. The five items shown in Table 4 were combined into the retributive justice index; the higher the score on this index, the more retributive the individual. The three items shown in Table 5 were combined into the self-defense index. The higher the score on this index, the more the respondent believed in the right to defend himself.

The retributive justice index is re-

lated to how much force an individual feels the police should use. The more retributive the individual, the higher the levels of police force he is likely to recommend. Among black men, the retributive justice index is related to opinions about how much property damage and personal injury are necessary to bring about social change fast enough. The more retributive the black man, the more likely he is to consider violence necessary for producing social change (Table 6).

Similarly, the greater the belief in self-defense, the more positively the respondent views violence. Among the consistent respondents, such beliefs are associated with recommendations for higher levels of police force. Among black men, such attitudes are associated with higher scores on the violence for social change index (Table 6).

Three other values were measured in the survey: the extent to which the individual ranks freedom, equality, and human dignity above respect for law, respect for property, and financial security (the humanism index); the extent to which the individual values people over property (the person-property index); and the degree to which the individual agrees with the principle of the golden rule (the kindness index).

The more the respondents value freedom, equality, and human dignity over respect for law, respect for poverty, and financial security, the less likely they are to advocate high levels of violence on the violence for social control index. Among blacks, there is no clear relation between the humanism index and the violence for social change index. The more the individual values property over persons, the more likely he is to advocate high levels of police force. Among blacks, the more the individual values persons over property, the more likely he is to justify high levels of violence on the violence for social change index. At first glance this may appear to be a contradiction. If human life is seen as valuable, then it would seem to follow that one would be less likely to advocate anything that might injure or destroy people. However, it is not difficult to imagine that a black man who is concerned with the value of people, particularly black people, might be inclined to view problems such as poverty and discrimination as issues requiring urgent action. Such individuals might be more inclined to feel that social change will not take place fast enough without vio-

Table 4. Responses to items measuring retributive justice ( $N = 1374$ ).

Response	Strongly agree (%)	Agree somewhat (%)	Disagree somewhat (%)	Strongly disagree (%)	Total (%)
People who commit murder deserve capital punishment.	43	28	14	15	100
When someone does wrong, he should be paid back for it.	23	44	22	11	100
It is often necessary to use violence to prevent it.	19	45	20	16	100
Violence deserves violence.	17	27	26	30	100
"An eye for an eye and a tooth for a tooth" is a good rule for living.	9	15	29	47	100

Table 5. Responses to items measuring self-defense ( $N = 1374$ ).

Response	Strongly agree (%)	Agree somewhat (%)	Disagree somewhat (%)	Strongly disagree (%)	Total (%)
A man has a right to kill another man in a case of self-defense.	60	29	6	5	100
A man has a right to kill a person to defend his family.	69	24	4	3	100
A man has a right to kill a person to defend his house.	23	35	25	17	100

lence. Hence the apparent contradiction is resolved.

Altogether, these values account for about a fifth of the variance in attitudes on the violence for social control index among the consistent respondents, as well as a comparable amount of the variance in attitudes on the violence for social change index among blacks

(Table 6). Obviously, the variance explained by each of the values is not entirely independent; nevertheless, each value does contribute uniquely to the variation.

Of the five values studied, the kindness index showed the least relation with the violence for social control index—not because there was lack of

Table 6. Values in relation to attitudes toward violence.

Values*	Violence for social control (consistent respondents) ( $N = 747$ )		Violence for social change (black men) ( $N = 303$ )	
	$\eta$	Variation explained (%)	$\eta$	Variation explained (%)
Retributive justice	.32	10	.38	14
Self-defense	.33	11	.23	5
Humanism	.26	7	.14	2
Person-property	.16	3	.17	3
Kindness	.14	2	.30	9
Multiple $R$ (population estimate)	.45 (.43)		.49 (.43)	
Joint variation explained ( $R^2$ ) (population estimate)		21 (19)		24 (19)

\* This table is based on a Multiple Classification Analysis (MCA) (22), which is an analytic technique designed to examine interrelations between several predictor variables and a dependent variable, within the framework of an additive model. The statistics show how each independent variable relates to the dependent variable (by means of  $\eta$ , the single correlation coefficient) and how much of the variation can be explained by each independent variable ( $\eta^2$ ). The analysis also shows how strongly the independent variables taken together relate to the dependent variable (by means of the multiple  $R$ , the multiple correlation coefficient);  $R^2$  expresses the relation as the percentage of joint variance explained. In addition, the technique provides an estimate of what multiple  $R$  might be expected in the population as a whole if the analysis were repeated (the population estimate of the multiple  $R$ ). The analysis also supplies an estimate of what the independent contribution of the predictor variables is in respect to  $R^2$ —that is,  $\beta^2$ —although this statistic is not included in the tables.

variance in the measure, but simply because belief in the golden rule is not greatly related to beliefs about whether police should beat, shoot, and kill. This finding is not true for blacks. Among black men, the more the individual professes to believe in the golden rule, the less likely he is to feel violence is necessary to produce social change. Nevertheless, one must ask why a value that ought to say so much about how people treat each other has so little relation to attitudes toward violence.

## Identification with Groups

### Involved in Violence

In order to test the hypothesis that violence was more likely to be justified by those who identified with the protagonists in violent actions, a series of questions was asked of each respondent. These questions were designed to gauge the extent of his identification with three of the groups (white student demonstrators, black protesters, and police) involved in the scenarios measuring respondent's attitudes toward violence (see Table 7).

Table 7 shows that, in general,

American men are inclined to view the police positively, while regarding white student demonstrators and black protesters negatively. Such feelings about the contenders in the violent scenarios relate to attitudes toward violence in substantial ways (Table 8). In each case, attitudes toward the contenders are related to attitudes toward violence, as predicted by the model specified earlier. In the case of the violence for social control index, the police may be regarded as the protagonists or the aggressors in the action, while white student demonstrators and black protesters are the opponents. According to the model, one would expect that the more the individual identified with the police and the less the individual identified with the dissidents, the higher the level of violence he would justify on the violence for social control index. The data demonstrate that such is the case. The more the respondent finds student demonstrators and black protesters looking for trouble, untrustworthy, hostile, and likely to change life for the worse, the higher the level of violence he advocates on the violence for social control index. On the other hand, the more the individual finds the police untrust-

worthy, hostile, looking for trouble, and likely to change life for the worse, the lower the level of violence he justifies on the violence for social control index.

As one would expect, diametrically opposite relations hold in the case of the violence for social change index. Here the respondent was asked how much property damage and personal injury were necessary to bring about changes needed by blacks and students. Such questions place the white student demonstrator and the black protester in the position of protagonist or aggressor, while placing the police, by implication, in the position of opponent. The more the individual finds white student demonstrators and black protesters untrustworthy, looking for trouble, hostile, and likely to change life for the worse, the lower the level of violence he justifies on the violence for social change index. The more the police are seen as having these undesirable characteristics, the higher the level of violence seen as necessary to produce social change.

### Rhetoric and Attitudes toward Violence

The last topic to be discussed is the relation between the rhetoric of violence and attitudes toward violence. During the course of the interview the respondent was told: "Here is a list of nine things that have been in the news. Tell me if you think about these as violence. I don't mean if they lead to violence, but if you think about them *as violence in themselves*. Do you think of *student protest* as violence?" The respondent was then asked each of the items shown in Table 9. (The table is arranged according to the frequency with which the respondents labeled these acts as violence.)

It is interesting that 58 percent of American men think that burning a draft card is violence, in and of itself; 38 percent think student protest is violence; and 22 percent feel sit-ins are violence. Clearly, many Americans consider acts of dissent, per se, to be violent.

According to Webster (21), violence is the exertion of physical force so as to injure or abuse. If one has something like this definition in mind, one must conclude that acts such as "police beating students" or "shooting looters" are violent. After all, even if one does not consider a beaten student or a shot

Table 7. Responses to items measuring identification ( $N = 1374$ ).

Identification items	White student demonstrators (%)	Black protesters (%)	Police (%)
On the whole, would you say that most _____ are <i>trying to be helpful</i> , or that they are <i>looking for trouble</i> , or that they aren't one way or the other?			
Looking for trouble	40	45	4
Not one way or the other	30	23	13
Trying to be helpful	30	32	83
	100	100	100
Think of how _____ think of people like yourself. Do you think that <i>none</i> dislike people like yourself, <i>only a few</i> , <i>many</i> , or <i>almost all</i> dislike people like yourself?			
Almost all	14	17	4
Many	18	29	5
A few	58	49	52
None	10	5	39
	100	100	100
Would you say that most _____ can be <i>trusted</i> , or that you <i>can't be too careful in dealing with them</i> ?			
Can't be too careful dealing with them	54	68	14
Don't know	12	9	2
Can be trusted	34	23	84
	100	100	100
If _____ get the things they want, do you think your life will change? If "WILL CHANGE": Do you think <i>your</i> life will change for <i>better</i> or <i>worse</i> ?			
Worse	23	34	7
Won't change	60	41	58
Better	17	25	35
	100	100	100

looter abused, both are likely to be injured. In view of the dictionary definition of the word, it is curious that only 35 percent of American men define "police shooting looters" as violence, and only 56 percent define "police beating students" in this manner. Of the behaviors inquired about, these two involve the most force and are most likely to lead to injury, yet they are not the acts most likely to be called violence.

Since agreement on what acts are considered violence is far from universal, one can ask whether the way in which language is used is related to attitudes toward violence. To facilitate answering this question, responses to the three items involving dissent were combined into the "Is protest violence?" index, and the responses to the three items dealing with police acts were combined into the "Are police acts violence?" index. The higher the score on an index, the more the respondent believes those items to be violence. Table 10 shows the relation between what acts the respondents believe to be violence, and their attitudes toward violence.

The more the respondent considers dissent to be violence, the more likely he is to favor the use of maximal force by the police. On the other hand, the less he considers police actions such as shooting looters and beating students to be violence, the less likely he is to advocate high levels of police force. It is as if, by labeling dissent "violence" and violent police actions "not violence," the American man is able to rationalize police behaviors that might not be so easily justified if the language were used differently.

Whether or not dissent is called violence relates only minimally to attitudes on the violence for social change index. One might speculate that those who think violence necessary to produce social change hold such beliefs consciously and therefore are not much affected by the rhetoric. On the other hand, those who believe violence for social control is necessary have not consciously recognized that it is violence which they advocate—hence the necessity of "bending" the language a bit to allow them to deny the nature of the acts they advocate. If such were the case, it would account for the strong relation between what acts a person defines as violence and his attitudes on the violence for social control index.

Table 11 shows how the three groups of independent variables—values, iden-

tification, and what the respondent defines as violence—relate jointly to attitudes toward violence. The three sets of variables acting jointly account for the variance in black attitudes on the violence for social change index, as well as for the variance in attitudes on the violence for social control index.

## Discussion

The data presented indicate that, to a very substantial degree, attitudes toward violence are related to values and attitudes toward the contenders in the violence. Moreover, the same values that enable one to justify the use of

Table 8. Identification in relation to attitudes toward violence.

Identification items	Violence for social control (consistent respondents) (N = 747)		Violence for social change (black respondents) (N = 303)	
	$\eta$	Variation explained (%)	$\eta$	Variation explained (%)
Students helpful	.28	8	.17	3
No students dislike respondent	.16	3	.18	3
Students trustworthy	.27	7	.13	2
Students better life	.28	8	.18	3
Blacks helpful	.27	7	.19	3
No blacks dislike respondent	.17	3	.08	1
Blacks trustworthy	.28	8	.13	2
Blacks better life	.34	12	.18	3
Police helpful	.25	6	.21	4
No police dislike respondent	.22	5	.29	8
Police trustworthy	.10	1	.10	1
Police better life	.22	5	.21	4
Multiple R (population estimate)	.52 (.48)		.51 (.34)	
Joint variation explained ( $R^2$ ) (population estimate)		27 (23)		26 (12)

Table 9. Acts defined as violence (responses to the question of whether a given act is violent) (N = 1374).

Items	Yes (%)	Both (%)	No (%)	Total (%)
Do you think of looting as violence?	85	3	12	100
Do you think of burglary as violence?	65	5	30	100
Do you think of draft-card burning as violence?	58	4	38	100
Do you think of police beating students as violence?	56	14	30	100
Do you think of not letting people have their civil rights as violence?	49	8	43	100
Do you think of student protest as violence?	38	15	47	100
Do you think of police shooting looters as violence?	35	8	57	100
Do you think of sit-ins as violence?	22	9	69	100
Do you think of police stopping to frisk people as violence?	16	10	74	100

Table 10. Definitional indexes in relation to attitudes toward violence.

Index	Violence for social control (consistent respondents) (N = 747)		Violence for social change (black respondents) (N = 303)	
	$\eta$	Variation explained (%)	$\eta$	Variation explained (%)
Is protest violence?	.31	10	.14	2
Are police acts violence?	.31	9	.18	3
Multiple R (population estimate)	.41 (.40)		.21 (.15)	
Joint variation explained ( $R^2$ ) (population estimate)		17 (16)		5 (2)

Table 11. Identification, values, and definitions in relation to attitudes toward violence. (The analyses in this table include all items shown in Tables 6, 8, and 10, unless  $\beta$  in the preliminary analysis indicated that the item made no independent contribution to explaining the variance in the dependent variable.)

Summary statistic	Violence for social control (consistent respondents) (N = 747)	Violence for social change (black respondents) (N = 303)
Multiple R (population estimate)	.61 (.57)	.63 (.54)
Joint variation explained ( $R^2$ ) (%) [population estimate (%)]	37 (32)	39 (29)

police force in an effort to maintain social control enable one to justify the use of violence as a means of producing social change. The two values that are most closely related to attitudes toward violence are retributive justice and self-defense. Both are positively oriented toward violence, and both are beliefs to which American men subscribe heavily. In addition, both have been greatly popularized by the mass media—it is not difficult to pick out the theme of retribution or self-defense in the average Western or other television adventure story. Nor is it difficult to identify these themes in the texts that are used to teach American history in many secondary school systems. The relation of these two values to attitudes toward violence and the ease with which they can apparently be used to justify violence of different types should raise some questions about the extent to which such values cause positive attitudes toward violence. In addition, one must ask to what extent such values are excessively reinforced by contemporary life.

Attitudes toward violence also vary directly with beliefs about the contenders in disturbances. The more negatively those against whom violence is directed are viewed, the higher the level of force likely to be justified against them. This is equally true of those situations in which the recipients of violence are student demonstrators or black protesters, and of those in which the recipients are police. It seems likely that further research will demonstrate that the level of force felt necessary to deal with a particular situation will be a direct function of the degree to which the recipient of that force is viewed negatively. If such is the case, serious questions must be raised.

It is clear that police and other law enforcement agents should use the minimum amount of force necessary to accomplish specific objectives. The President's Commission on Campus Unrest (4) commented on this point in

respect to the disaster at Kent State University. The commission reviewed the Ohio State Guard rules that apply to the use of lethal weapons. These rules state that rifles will be used only when all other means, including gun butt, bayonet, and chemicals have failed. In addition, the rules require that only single shots at confirmed targets (snipers) are to be fired unless human life is endangered by the forcible, violent acts of a rioter, or when rioters cannot be dispersed by any other reasonable means. These criteria are not predicated on notions of the trustworthiness or helpfulness of those at whom the force is directed; rather, they are based directly on the tactical requirements of the situation. Under the judicial system of this country, an individual is presumed innocent until proven guilty, is assured the right to a trial, and is protected from punishment without such a trial. To support the use of police force on the basis of the presumed attributes of the recipients of that force is to short-circuit the system of justice and to place the right to punish in the hands of the police on a spur-of-the-moment basis. The results of shooting often involve permanent injury, if not death, thus precluding the possibility of a fair trial and true justice.

It is, of course, equally unreasonable for radical proponents of social change, on the basis of negative beliefs about members of the "establishment," to resort to property damage and death to promulgate their cause. One cannot, however, control the actions of such people by policy statements. Serious legal sanctions against such behaviors already exist. What can be changed is the example set by the government, in terms of how much violence it is willing to condone in the pursuit of its proper purposes.

The last set of attitudes discussed is what the respondent defines as violence. Many Americans believe that acts of dissent are violence in and of themselves. The right to dissent is guaran-

teed by the Constitution, and freedom of speech has been vigorously upheld by the presidential commissions that have investigated problems of violence. The President's Commission on Campus Unrest, for example, asserted that student protest, per se, is not a problem and that vigorous debate on current issues should be an integral part of the university's function. The commission clearly and repeatedly distinguished among protest, defined as organized expression of dissent; disruption, or interference with organized activities; and violence, defined as willful property damage and injury to persons.

A good many Americans, however, do not make such distinctions. As the data clearly show, large numbers are convinced that protest is violence in and of itself. This is not merely a semantic issue. When an action is labeled "violence," the level of police force recommended to control that action is escalated.

"Inflammatory rhetoric" is a cliché that contains a considerable amount of truth. Rhetoric does inflame. When an action is called violent, irrespective of its intrinsic harmfulness or lack of harmfulness, the public becomes more willing to control that action with measures that are literally violent—that is, with police acts that will lead to substantial injury or death. Although I do not have the data to prove the point, I can easily imagine that labeling non-violent actions of government officials and agencies violent would escalate the level of violence justified against them. One can argue from these data that the time has come for us to lower our voices and that it is irresponsible, especially for people in public life, to label behaviors that are not destructive of property or persons as violent. Such rhetoric escalates the level of violence that is justified as retaliation.

It appears from the data that attitudes toward violence are strongly related to basic values, attitudes toward others, and the language used to describe events. The fact that the levels of violence considered to be justified can be predicted (at least in the statistical sense) from a model based on values and beliefs about others implies that violence is not an aberrant or asocial phenomenon, but an integral part of the culture in which we live. If such is the case, positive attitudes toward violence will not be changed before reorientations in other areas of American life take place.



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# How Information Is Carried in Scientific Sub-Languages

Advances in linguistics may help improve communication between scientists speaking different sub-languages.

I. D. J. Bross, P. A. Shapiro, and B. B. Anderson

Our main purpose in this article is to consider how the linguistic structure of a given language reflects the language's function or functions and its related semantic, or information-carrying, properties.

The languages used by members of the scientific community in their jobs as practitioners or researchers can be especially useful for examining the relationships between structure and function since these highly specialized languages (or jargons) have evolved from the mother tongue in such ways as to better meet the specific functional needs

of their users. During this evolution, as in biological evolution, the process of adaptation to a specific linguistic function leads to an emphasis upon and elaboration of certain features of the original linguistic structure and a corresponding de-emphasis or elimination of other features of the mother tongue. The specialized language becomes more effective for performing certain linguistic tasks while its ability to perform other functions is reduced or completely lost.

By considering the linguistic structure of scientific jargons from the theoretical standpoint developed by Harris (1), it has become possible to get a much clearer picture of the relationship between syntactic structure and semantic function than has previously been possible. The picture obtained from studies of natural languages is

much more realistic and useful than the pictures obtained from semantic studies based upon artificial languages. At the same time, the scientific analysis of natural languages avoids the obscurity and circularity that has plagued the intuitive philosophical approaches to questions of meaning. We feel that the best currently available procedure for investigating the nature of language is to examine closely particular languages actually being used for a specific purpose. In this article we present some of the results of one such study.

## An Introduction to Linguistic Analysis

A language is basically a complex mechanism for encoding a message consisting of a set of information units into a form that can be both transmitted and received. It is the medium through which a particular set of users communicate about a particular universe of discourse. Within this mechanism, two important forces are at work.

First, the particular communication needs of the users of the language will determine a distinct semantic function that this mechanism must somehow satisfy. For example, some specialized languages function primarily to persuade or convince, such as the jargons of courtroom lawyers, advertisers, or editorialists. Other jargons function primarily to elicit emotional response, such as the language of poetry. The language discussed below is used solely for transmission of information.

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