

## Frustration-Aggression Hypothesis: Examination and Reformulation

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Examines the Dollard et al. (1939) frustration-aggression hypothesis. The original formulation's main proposition is limited to interference with an expected attainment of a desired goal on hostile (emotional) aggression. Although some studies have yielded negative results, others support the core proposition. Frustrations can create aggressive inclinations even when they are not arbitrary or aimed at the subject personally. Interpretations and attributions can be understood partly in terms of the original analysis but they can also influence the unpleasantness of the thwarting. A proposed revision of the 1939 model holds that frustrations generate aggressive inclinations to the degree that they arouse negative affect. Evidence regarding the aggressive consequences of aversive events is reviewed, and Berkowitz's cognitive-neoassociationistic model is summarized.

In 1939, researchers at the Yale University Institute of Human Relations published a small monograph that has had a tremendous impact, directly or indirectly, on almost all of the behavioral sciences. Led by John Dollard, Leonard Doob, Neal Miller, O. H. Mowrer, and Robert Sears (1939), the group attempted to account for virtually all of human aggression with a few basic ideas. Their book, *Frustration and Aggression*, quickly attracted considerable attention. Seven articles in one 1941 issue of *Psychological Review* were devoted to the controversy generated by the monograph, and excerpts from these papers as well as from other related articles were reprinted in a major section of the classic *Readings in Social Psychology* (Newcomb & Hartley, 1947). Most of the studies investigating the causes and consequences of aggression in the immediately following decades were oriented, to some extent at least, toward issues raised by the Yale group's analysis (see Berkowitz, 1958, 1962; Buss, 1961).

Almost 50 years have now gone by since the publication of *Frustration and Aggression*. Although the monograph's central argument is still well known, anyone who surveys the widely differing discussions of this formulation in introductory psychology and personality/social psychology books is bound to come away uncertain as to whether the Dollard et al. (1939) propositions are important for an understanding of human aggression or even valid at all. Readers of books specifically concerned with aggression are no better off because these works offer very different conclusions about the current status of the frustration-aggression thesis. Some writers have been altogether negative. Bandura (1973), for example, criticized the Yale formulation as a drive theory, holding that frustrations typically only create a general emotional arousal. From his perspective, social learning determines how the person will respond

to this arousal (see Bandura, 1973, p. 54). Zillmann (1979) was also dubious and attributed the occasional demonstrations of aggressive responses to frustration "to the involvement of supplementary factors such as personal attack or the instrumental value of aggressive reactions" (p. 138). Zillmann (1979) contended that "the blockage of a goal reaction, in and of itself . . . generally will not induce interpersonal hostility or aggression" (p. 139). Baron (1977), on the other hand, was more favorably disposed but maintained that frustration "is not a very common or important [antecedent of aggression] and is probably far less crucial in this respect than has widely—and persistently—been assumed" (p. 92). Baron suggested that barriers to goal attainment would produce aggressive reactions only when they were unexpected.<sup>1</sup>

Readers of these various discussions can also see that the basic reformulation has not been altered over the past 50 years. Most psychologists still think of the frustration-aggression hypothesis almost entirely as it was first spelled out by Dollard et al. As a consequence, many critiques take up the entire package of 1939 propositions, including the Yale group's ideas regarding hostility catharsis, thereby clouding the assessment of the postulated effects of thwartings on the instigation to aggression. This latter hypothesis should be evaluated on its own.<sup>2</sup>

<sup>1</sup> In fairness to the Yale group's analysis, it should be noted (as will be mentioned later) that they basically thought of a frustration as an unexpected blockage of an anticipated goal attainment.

<sup>2</sup> Some criticisms of the frustration-aggression hypothesis have focused on Dollard et al.'s (1939) implied contention that there was an innately determined connection between a thwarting and the resulting instigation to aggression. These objections seem to argue that any demonstration that learning can modify the likelihood of an aggressive response to a frustration invalidates the hypothesis. However, as I have noted elsewhere (Berkowitz, 1969, pp. 3-4), the Yale psychologists' general theoretical position holds that "built-in" behavior patterns can be modifiable by learning without being entirely learned. At any rate, for the time being one can ask if and when thwartings give rise to aggressive reactions without dealing with this issue.

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This article offers a new look at the possible connection between frustration and aggression, but rather than reviewing all of the studies bearing on this relationship, it focuses on the major theoretical issues that have been raised regarding the frustration-aggression hypothesis and cites only those investigations that seem most relevant to these particular questions. Thus, after summarizing the Dollard group's original conception, this article takes up some of the major criticisms that have been leveled against this formulation and attempts to demonstrate, by making use of an admittedly highly selective number of studies, that frustrations, properly defined, can contribute to human aggression under some conditions. Contrary to the widely held view that frustrations produce aggressive inclinations only when there is an "involvement of supplementary factors such as personal attack or the instrumental value of aggressive reactions" (Zillmann, 1979, p. 138), this article argues that the blocking of goal-directed activity can create an instigation to aggression in the absence of these particular factors. This is not to say, however, that various situational and personal conditions do not affect the chances that the thwarting will be followed by open aggression, and this review identifies some of these conditions that can either heighten or decrease the likelihood of overt aggression.

After this survey, I then go on to suggest how this hallowed and well-worn analysis should be revised to accommodate other considerations. This reformulation essentially addresses the question of why frustrations give rise to an instigation to aggression and proposes that the frustration-aggression relationship is basically only a special case of a more general connection between aversive stimulation and aggressive inclinations. More specifically, it is argued here that thwartings produce an instigation to aggression only to the degree that they generate negative affect. Many (but not all) of the factors affecting the probability of aggressive reactions to a goal blockage, such as the unexpectedness or impropriety of the interference, presumably have this moderating effect at least partly because they influence the experienced unpleasantness of the frustrating event. This broader proposition also provides an answer to yet another frequently mentioned criticism of the frustration-aggression thesis: Frustrations are not a very common or important antecedent of aggression. One cannot say in the abstract whether thwartings are weak or strong instigators to aggression. The likelihood that an unexpected barrier to goal attainment will give rise to an aggressive reaction depends on the aversiveness of this event.

Although this reformulation is intended as a substitute for the earlier version of the frustration-aggression hypothesis, it is worth reviewing the analysis propounded by Dollard and his associates for a number of reasons: the 1939 formulation's historical significance, the great number of studies that have sought to test or apply the original conception (some of which identify the conditions that can affect the likelihood of overt aggression after the thwarting), and of course, the possibility that frustrations in and of themselves do produce an instigation to aggression independently of how unpleasant these thwartings might be.

### Examination of Original Propositions

#### *Original Formulation*

Although slim in size and short in supporting research, the Dollard et al. (1939) monograph was highly ambitious in its

aspirations. It advanced a few basic propositions to explain the origin and consequences of virtually all human aggression. The principal postulates had to do with the effects of frustration, but other ideas dealt with the target of the resulting aggression, and still others with the possibility of a cathartic lessening of the instigation to aggression. Although many writers (e.g., Bandura, 1973; Zillmann, 1979) have discussed these propositions as a single interrelated package, as was noted earlier, this article focuses only on the notion of frustration as the single cause of aggression.

*Frustration and aggression.* Dollard et al. (1939) started their monograph with a sweeping generalization as their core assumption: "Aggression is always a consequence of frustration" (p. 1). This statement means, they were quick to note, that (a) "the occurrence of aggressive behavior always presupposes the existence of frustration" and (b) "the existence of frustration always leads to some form of aggression" (Dollard et al., 1939, p. 1). Before one can examine these ideas, however, it is necessary to understand how the Yale group defined the terms *frustration* and *aggression*.

*Definition of frustration.* The word *frustration* is one of the many psychological concepts originating in everyday speech that is all too susceptible to radically different meanings. Even psychologists have used the term in many different ways, sometimes referring to an external instigating condition and sometimes to the organism's reaction to this event.<sup>3</sup> Amsel's (1958) discussion of frustrative nonreward used this latter usage, whereas Dollard and his colleagues were careful to speak of frustrations only in the former sense, as external occurrences. For them, a frustration was "an interference with the occurrence of an instigated goal-response at its proper time in the behavior sequence" (Dollard et al., 1939, p. 7). It is important to spell out just what is involved in this definition, because a truly adequate test of the Yale group's thesis obviously requires establishing what they regarded as a frustration.

*Goal-directed behavior and expectations.* In particular, an impediment to a goal is not a frustration in the Yale psychologists' sense unless the organism is striving, implicitly or explicitly, to reach this objective. Mowrer, one of the Yale group, made this very point in 1949 when he observed that a frustration was possible only when there was an "intent to gratify the primary drive" (cited in Yates, 1962, p. 110). But more than goal-directedness is involved here; the last part of the Dollard et al. (1939) definition quoted earlier implies that the person/organism had also been making anticipatory goal-consuming (i.e., goal enjoying) responses. A brief quotation in the monograph shows how this behavior theory language can readily be translated into cognitive terminology (while still keeping to the spirit of the Dollard et al. concept). Dollard et al. (1939) referred to a couplet from the English poet Matthew Prior to illustrate their thesis: "Say, what can more our tortured souls annoy/ Than to behold, admire, and lose our joy?" (p. 19). If one takes these two lines

<sup>3</sup> A few criticisms of the frustration-aggression hypothesis have objected to the many different meanings of the term *frustration*. Although these different usages of the word are a problem in many discussions, it should be recognized that Dollard and his colleagues were clear and consistent in their definition.

seriously, it would seem that Dollard and his colleagues had basically thought of a frustration as an obstacle blocking the attainment of an expected gratification.

In other words, although some psychologists have viewed a frustration only as the omission of a customary reward (e.g., Azrin, Hutchinson, & Hake, 1966) or as a deprivation, this was not precisely what Dollard and his colleagues had in mind. For them, strictly speaking, deprivation is not necessarily the same as frustration. Poor people lacking the good things of life need not be frustrated in Dollard et al.'s (1939) sense of this term. Nor would Dollard et al. have fully agreed with Buss's (1961, pp. 17-20) conception of a frustration as the blocking of any action typically leading to a reinforcer. The Yale group would have said that keeping people from some attractive goal was a frustration only to the extent that these persons had been anticipating the satisfactions they would have obtained at reaching this objective (see Berkowitz, 1968, 1969, 1978, for a further discussion of this point). This expectancy conception is used throughout this article even though Dollard et al. avoided using cognitive language.

*Other parameters.* Dollard et al. (1939) identified several aspects of the thwarting that presumably affected the strength of the resulting instigation to aggression, giving special attention to (a) the strength of the drive whose gratification was blocked, (b) the degree of interference with this drive satisfaction, and (c) the number of frustrated response sequences. Taking these up in order, the analysis proposed that (a) the greater the satisfaction anticipated on attaining their objective, the more aggressively inclined people will become when kept from reaching their goal; (b) the strength of the resulting instigation to aggression will be reduced by whatever partial gratifications are obtained; and (c) the frustration-generated aggressive inclinations will summate over repeated instances of unsatisfied expectations. In regard to the latter proposition, the Yale group suggested that each thwarting might well leave some residual instigation to aggression, although they also recognized that the leftover aggressive inclinations probably subside to some degree with the passage of time (Dollard et al., 1939, pp. 31-32). But when these residuals are present, they presumably become added together, so that prior frustrations can intensify the aggressive reaction evoked in the immediate situation.<sup>4</sup>

*Definition of aggression.* Dollard et al.'s (1939) definition of aggression is fairly straightforward: The term referred to any "sequence of behavior, the goal-response to which is the injury of the person toward whom it is directed" (p. 9). Thus, for all of their 1939 behavior theory language, Dollard and his colleagues regarded aggression as not merely the delivery of noxious stimuli but as an action having a fairly definite objective: the infliction of injury. Of course, the exact nature of this response is not always the same from one occasion to the next. Anticipations of punishment could lead to indirect forms of aggression rather than a direct attack on the target (Dollard et al., 1939, p. 45). But just how the aggressor hurt the target was not especially important, according to Dollard et al.; different aggressive forms theoretically were interchangeable in that the performance of any aggressive act presumably would lessen the thwarting-generated instigation to aggression (Dollard et al., 1939, p. 50).

*When frustration leads to open aggression.* Every thwarting obviously does not lead to overt aggression. In their work, Dollard et al. (1939) seemed to say that the major reason frustrated people do not always attack some available target openly is that they anticipate that such behavior may bring punishment (pp. 32-34). Thwarted persons presumably will restrain themselves to the degree that they believe their aggression will cause either themselves or loved ones to be harmed or if they think they will be unable to carry out an aggressive act (Dollard et al., 1939, p. 34). They also suggested that any interference with the instigated aggression is also a frustration and thus would strengthen the thwarted persons' aggressive inclinations (Dollard et al., 1939, p. 40).

Two years after the publication of the Yale monograph, one of the group, N. E. Miller (1941), offered an important clarification. The original statement should not have implied, he said, that the absence of overt aggression after a frustration was only due to inhibitions evoked by the threat of punishment. The inability to attain a desired goal obviously can have nonaggressive as well as aggressive consequences. Other responses can occur, he noted, that may inhibit aggressive reactions. He and his colleagues actually believed, said N. E. Miller (1941), that "frustration produces instigations to a number of different types of response, one of which is an instigation to some form of aggression" (p. 338). However, even when aggression is not initially the dominant response, he argued, if the person persists in trying to reach the goal but the thwarting continues, the nonaggressive reactions will extinguish and there will be an increasingly greater "probability that the instigation to aggression eventually will become dominant" (N. E. Miller, 1941, p. 339).

*Target of aggression.* Dollard et al.'s discussion of the form of the frustration-induced aggression was linked to a consideration of the target of this aggression. "The strongest instigation aroused by a frustration," they held, was to "acts of aggression directed against the agent perceived to be the source of the frustration . . ." (Dollard et al., 1939, p. 39). They also suggested, however, that the threat of punishment could lead to a displacement of this aggression to substitute targets (Dollard et al., 1939, pp. 41-44) as well as to changes in the form of the aggression. Although nothing was said about the factors governing just what target would be attacked or the strength of this displaced aggression, N. E. Miller (1948) later advanced an important theoretical analysis of displacement in behavior theory terms that addressed this particular problem. This formulation is, in my opinion, a tour de force, but space limitations keep me from discussing the model's complexities in this article (see Berkowitz, 1962, Chap. 5, for a detailed examination of Miller's anal-

<sup>4</sup> Although my revision has little to say about this particular proposition, I would prefer to avoid Dollard et al.'s implication that repeated frustrations result in an accumulating aggressive drive even though these occurrences are widely separated in time. When frustrations are far apart, it probably is better to suggest that prior thwartings somehow sensitize the person to later frustrations (perhaps through lowering a response threshold) so that these later events can activate aggressive reactions more readily.

ysis).<sup>5</sup> All that needs to be said here is that precise tests of the entire frustration-aggression thesis should provide the thwarted individuals with appropriate targets having theoretically suitable stimulus characteristics.

### *Initial Modification of Frustration-Aggression Hypothesis*

At this point, before I go on to the major criticisms, I would like to offer two "friendly amendments" to the 1939 conception, essentially narrowing the scope of this thesis. As was mentioned earlier, Dollard and his associates believed that all aggression could be traced to one or more prior frustrations, although they did not specify how this previous influence would operate. This supposition seems to neglect the possibility that aggression can be learned instrumental behavior. People at times attack others, not because they have been thwarted in the past, but because they think this action will bring them some other benefits (other than the infliction of injury).

Moreover, in maintaining that every aggressive action ultimately stems from some earlier thwarting, Dollard et al. also appeared to assume that aggression was always primarily aimed at doing harm. Such an assumption fails to recognize the important distinction between instrumental and hostile aggression first made by Feshbach (1964) and now widely accepted by most social psychological investigators of aggression (e.g., Baron, 1977; Rule, 1974). Where all aggression is a deliberate attempt to injure someone, in *hostile* (or emotional) aggression, the primary goal is to do harm, whereas *instrumental* aggression is oriented mainly to the attainment of some other objective such as money, social status, or territory. The Yale group apparently was thinking only of hostile aggression, forgetting that instrumental aggression can be learned much as other instrumental behaviors are learned. Throughout this article, then, I am concerned only with the relatively immediate effects of frustrations on what seems to be largely hostile aggression.<sup>6</sup>

### Criticisms and Defense

The publication of the frustration-aggression monograph was soon followed by a series of objections from other social scientists, most of whom argued that only some kinds of thwartings produce aggressive inclinations. As an example, in his contribution to the previously mentioned *Psychological Review* symposium, Maslow (1941) maintained that the Dollard et al. thesis held only for those frustrations seen by the afflicted individuals as a "threat to their personalities." (Although, of course, from the Yale group's perspective, these frustrations would be regarded as involving the blocking of relatively strong instigations.) Nowadays, this type of objection states that people prevented from reaching a desired goal become aggressively inclined only when the interference is thought to be illegitimate (i.e., a violation of socially accepted rules) or is viewed as a personal attack.<sup>7</sup> Although both of these latter points can be combined into one proposition (thus, an attack on the self is usually regarded as socially improper), some writers have emphasized one of these ideas more than the other, and it is convenient to look at them separately.

### *Illegitimate Thwartings and What People Say They Would Do*

Pastore (1952) was among the first to suggest that only illegitimate frustrations produce aggressive reactions. In his study the subjects were asked how they would respond to various hypothetical situations such as a city bus's failure to pick them up at a regular bus stop. Not surprisingly, the students typically answered that they would not become angry if the thwarting seemed reasonable or proper. And so, in the bus example they said they would not have been bothered at the bus's passing them by if it had displayed a sign showing it was on the way to the garage. Cohen (1955) conducted a similar investigation in which university women were asked to indicate what would be the ideal reaction to a variety of incidents and also what would be the likely actual response. The subjects believed that people were less apt to be aggressive in response to a nonarbitrary frustration in comparison with an arbitrary frustration. Interestingly, Cohen also found that although only about 6% of the women said that aggression was an ideal reaction to a nonarbitrary thwarting, over half of the participants in the study

<sup>5</sup> The interested reader should note that several aggression experiments have obtained results consistent with N. E. Miller's conflict theory (e.g., Fitz, 1976; Pigg & Geen, 1971).

<sup>6</sup> It is theoretically possible to distinguish between hostile and instrumental aggression independently of frustration in terms of the events that reinforce the aggressive reactions following the goal blockage. Thus, when people are engaged in hostile aggression, information that their attacks on the target have hurt that person should have a reinforcement value even when no extrinsic rewards are obtained. Furthermore, especially in the case of hostile aggression, this information about the target's suffering, when provided shortly after the aggressor starts attacking the intended target, can also serve as an incentive to even stronger acts of aggression. Several experiments have demonstrated that deliberately provoked subjects are spurred to stronger attacks on their tormentor when they receive indications that their initial punishment of that person is hurting him (see Baron's, 1977, discussion of "pain cues"; see also Berkowitz, 1981, and Rule, 1974). Frustrations should have much the same effect as the deliberate provocations in creating this susceptibility to the pain cues. However, one should also recognize that many aggressive actions have both hostile and instrumental components. In many laboratory experiments, as a case in point, the subjects have to punish the target to some extent in order to fulfill their obligations as research participants and thus are engaged in instrumental aggression. But at the same time, they may also inflict far more intense punishment than is minimally necessary because they also want to hurt the target; this hostile component is combined with the instrumental aspect of the aggressive performance.

<sup>7</sup> A statement made by Bandura (1983), who is by no means a doctrinaire adherent of attribution theory, provides a good example of how widespread this view is. Discussing what he regarded as the shortcomings of frustration-aggression theory, he maintained that "when thwarting provokes aggression, it is probably attributable more to personal affront than to blocking of behavior. Consistent with this interpretation, people report more aggression to thwartings that appear unwarranted or suggest hostile intent than to those for which excusable reasons exist, even though both involve identical blocking of goal-directed behavior" (Bandura, 1983, p. 17). This article attempts to demonstrate that even frustrations "for which excusable reasons exist" can activate an instigation to aggression.

thought that even a socially justified goal interference could actually provoke aggression. At any rate, taking the subjects' self-reports at face value, and oversimplifying and overgeneralizing the actual results (as well as neglecting the aforementioned finding regarding what the participants believed was actually likely to happen), many critics of the frustration-aggression hypothesis have cited these studies as supposedly demonstrating that only those thwartings that violate generally accepted rules of conduct give rise to aggression.

There can be little doubt that persons unfairly prevented from reaching a desired objective are often more angry and aggressive than are those exposed to socially approved barriers to goal attainment (see, e.g., Kulik & Brown, 1979; Rule, Dyck, & Nesdale, 1978; also see Bandura, 1973; Ferguson & Rule, 1983; Zillmann, 1979). But just what is involved here? Generally speaking, when researchers have manipulated the arbitrariness or illegitimacy of a barrier to goal attainment, they have varied either or both of two components: how unexpected this interference is and the degree to which it violates widely accepted rules of conduct. Kregarman and Worchel (1961) argued that the unexpectedness of the thwarting is the feature most likely to provoke aggressive reactions, and it may be that surprise is also involved, to some extent at least, in socially unwarranted frustrations; most rule-violating events are somewhat unexpected. If this assumption can be made, the fact that arbitrary or illegitimate obstacles to goal attainment are more likely to produce aggressive reactions than are reasonable, justified, or legitimate frustrations is totally compatible with the Yale group's formulation. And of course, people may also be inclined to restrain whatever aggressive inclinations arise from socially proper thwartings, believing that aggression would be socially inappropriate under these circumstances. Thus, there is no argument regarding the frequently reported difference between these two kinds of frustrations. What is at issue is whether supposedly legitimate thwartings engender any aggressive tendencies at all. The critics probably have been too quick to dismiss such a possibility, partly because they have drawn oversimplified conclusions from the Pastore (1952) and Cohen (1955) experiments. A few words about these two studies are in order.

It should be obvious that the Pastore (1952) and Cohen (1955) findings are actually highly equivocal. To begin with, at least some of the hypothetical incidents described in these studies do not meet the Yale group's definition of a frustration. Such a condition exists, remember, only when people are kept from reaching a goal they expect to attain. In the bus stop situation used by Pastore, for example, persons waiting for a bus who see that the approaching vehicle is clearly on its way to a garage do not expect to be picked up. Theoretically, then, they are not frustrated when it passes by, and Dollard and his associates would not have predicted much, if any, aggression to occur. Then, too, as Pastore himself recognized and as Cohen's data suggest, the subjects may have given only socially desirable answers to the hypothetical situations described to them. They could well have believed it was unreasonable to become angry, or to say they would be angry, at reasonable barriers to their goals, whether they had expected to attain these goals or not. (Actual behavior need not conform to ideal modes of conduct, as we all know and as Cohen's [1955] subjects acknowledged.

This discrepancy exists for bus riding as well as for other modes of conduct. McKellar [1950] asked his subjects about the situations that made them angry and found that some of these people reported that they had become angry at missing a bus.)

#### *Attributions: Only Personally Directed Thwartings*

Attributional interpretations of aggression- or anger-provoking situations are the most recent variation on the only-some-kinds-of-frustration theme. These analyses maintain that people become angry and aggressive on being kept from reaching a desired goal to the extent that they think that someone had intentionally and unfairly produced this interference or had deliberately and wrongly tried to hurt them (e.g., Averill, 1982, 1983; Dodge, 1986; Ferguson & Rule, 1983; Weiner, 1985). Again, there is no question that the attributions made for a failure to satisfy one's expectations can affect the emotional reactions to this occurrence (e.g., Smith & Ellsworth, 1985; Weiner, 1985). To cite only some of the research supporting attributional theorizing, Younger and Doob (1978) demonstrated that people were comparatively nonaggressive after being provoked if they could attribute their aroused feelings to a pill they had just taken, and Zillmann (1978) showed that attributions can influence the extent to which residual excitation arising from a neutral source contributes to the intensity of the aggression that is subsequently exhibited. Nor can one doubt that frustrations viewed as having been intentionally produced are more likely to create aggressive reactions than are thwartings regarded as having been only inadvertent, apparently because the former are apt to be taken as a personal attack (Averill, 1982; Kulik & Brown, 1979; Rule & Nesdale, 1976; Zillmann, 1978). Thus, a series of clever experiments by Zillmann and his students (see Zillmann, 1978, pp. 357-359) showed that mitigating information, essentially telling subjects that another individual's mistreatment of them was not a deliberate personal attack on them, can reduce the provoked subjects' subsequent hostility toward the instigator. Indeed, if the subjects know beforehand that any mistreatment they receive would not be aimed at them personally, they are apt to be physiologically less aroused by a subsequent insult than are other persons not receiving this preparatory mitigating information (Zillmann & Cantor, 1976). However, and this is important, the mitigating information has much less of a meliorating effect when it comes after rather than before the provocation or when the afflicted persons are already extremely aroused. Kremer and Stephens (1983) and Johnson and Rule (1986) confirmed Zillmann's findings regarding the weaker meliorating effects of postprovocation mitigating information. I shall return to this matter later.

Attributions probably affect aggressive reactions to a thwarting through both restraining and instigating processes (Ferguson & Rule, 1983). The inhibitions undoubtedly are regulated to a considerable degree; because people often follow social rules that dictate how one should act and feel under particular circumstances, they might well deny (to themselves as well as to others) that they have been provoked by some accidental misadventure but would be less likely to inhibit their aggressive reactions when they believe they have been intentionally wronged because societal norms do not strongly condemn such a retaliation.

tion. And then, too, whether one restrains one's self or not, it is especially unpleasant to think that someone has deliberately and wrongly blocked one's progress to the goal. The displeasure produced by the perception of such a personal affront undoubtedly adds to whatever negative affect is generated by the frustration itself. What is really at issue here is not whether attributions have an effect but whether the perception of a deliberate and controllable misdeed is necessary for anger and aggression to arise.

### Some Evidence That Legitimate and Nonpersonally Directed Frustrations Can Produce Aggression

Space limitations preclude reference to the many experimental results obtained with nonhuman subjects that are in accord with the frustration-aggression hypothesis (e.g., Azrin et al., 1966; Gallup, 1965). I also cannot take the time to review the great number of relevant human studies bearing on this question or even discuss all of the ins and outs of the pertinent research. This article will have to be confined to only a few selective investigations demonstrating that, at least under the conditions sampled by these studies, frustrations can create hostility and aggression even when they are not viewed as arbitrary, illegitimate, or intentional.

### *Reports of Reactions in Everyday Situations*

Dollard and his associates were by no means the first observers of human behavior to propose that frustrations frequently lead to anger and aggression. Years before the publication of Dollard et al.'s monograph, other psychologists had investigated the conditions producing angry feelings and aggressive actions, generally by asking people to record when they or others had these emotional reactions in their daily lives. In two of these early naturalistic studies (Gates, 1926, and Meltzer, 1933, cited in Averill, 1982, pp. 169-170), a substantial minority of the respondents reported being angered by a thwarting of their routine activities. Other observations obtained by Goodenough (1931), who had questioned mothers about their young children's anger experiences, suggest that personal attacks are not necessarily involved in these thwartings of routine activities. Essentially duplicating Gates's somewhat similar findings with much older subjects, Goodenough noted that even youngsters less than 2 years of age were particularly likely to become angry just before meal time. It seems improbable that these very young children had interpreted the failure to obtain their customary food as an illegitimate and personal attack on them. Finally, to mention only one more self-report investigation, in Averill's (1982) study of the incidents angering community residents and university students, 11% of the sample said they were angered by some voluntarily undertaken action even though the instigator had behaved legitimately, and another 7% admitted being provoked by an admittedly unavoidable accident or event (Averill, 1982, p. 172). In this sample, "frustration, or the interruption of some ongoing or planned activity," was the single most frequently mentioned anger-precipitating event and often involved the "violation of important personal expectations or wishes" (Averill, 1982, p. 173).

The exact percentages just given obviously should not be generalized to other samples. For purposes here, what is important about these figures is that they are not zero. At least some people said they had become angry or aggressive on being frustrated even though they believed they had not been improperly kept from reaching their goal. For one reason or another, only a minority of the population may be strongly affected in this way, but one cannot say from the percentages reported in these studies how often such a reaction actually does occur in daily life; there is a possibility that at least some of the respondents in these investigations had not wanted to admit that they had been angered by reasonable and socially justified frustrations.

### *Laboratory Results*

It was noted earlier that a number of experiments have failed to find indications of aggressive reactions to nonarbitrary thwartings (e.g., Gentry, 1970; Rule et al., 1978; Rule & Hewitt, 1971). Clearly, an interference with the attainment of an expected goal does not always lead to open aggression. Nevertheless, other laboratory investigations have obtained a significant increment in aggression after a frustration. Because this article is primarily interested in demonstrating that the failure to reach a desired goal can produce an instigation to aggression under the right conditions even when this failure is not "improperly" imposed, and does not intend merely to "count votes" to see how often such an effect has been reported, it is worth looking at some of these relatively successful studies. In all of these experiments the goal blocking seemed not to be directed against the subjects personally and did not appear to be a clear threat to their self-esteem.

*Direct tests varying drive strength.* Some experiments tested the Dollard et al. (1939) formulation by varying the strength of the instigation whose gratification was blocked. Dollard and his associates had held that the strength of the resulting aggressive inclination would be in direct proportion to the strength of the nonfulfilled desires. Arnold Buss (1963), who voiced strong reservations about the frustration-aggression hypothesis (Buss, 1961), was one of the researchers taking this approach and provided some of the supporting evidence. In Buss's (1963) first experiment along these lines, the frustrated male and female university students were kept from attaining a desired prize (better grades or a monetary prize) because their partner in the study was too slow in learning a specified concept. These people subsequently gave the learner stronger punishment than did other subjects not anticipating an attractive reward and who expected their partner to take a long time to learn the concept. The inability to achieve the desired and expected goal had intensified the participants' aggressive tendencies, Buss concluded, even though the thwarting was not an arbitrary one and the aggression was not instrumental to the attainment of other goals. However, he also noted that the level of aggression displayed by the subjects was not very great in relation to the level that was possible in the situation. A later experiment (Buss, 1966) using the same paradigm shows how weak the frustration-produced aggressive instigation can be on many occasions.

In this study, frustration did not significantly affect the level of punishment given to the target.<sup>8</sup>

*Expectation violations.* As was suggested earlier, any precise test of the Dollard et al. (1939) frustration-aggression hypothesis should establish a violation of a goal expectation rather than just a deprivation. People presumably are apt to become aggressive on not attaining their desired objective only to the extent that they have been anticipating the pleasure this outcome would bring them. In Buss's (1963) previously cited experiment the goal expectation was not explicitly induced, but the thwarted subjects had probably anticipated some degree of success on their assigned task.<sup>9</sup> In other investigations also testifying to the aggressive consequences of a frustration (e.g., Kregarman & Worchel, 1961), the subjects' expectations were explicitly varied. As a noteworthy example, Worchel (1974) manipulated the extent to which his subjects had freely selected a particular prize as a reward to be given to them for serving in the study, their expectation of receiving this prize, and how attractive the actually obtained reward was to them. The participants expressed the strongest aggression toward the person who was responsible for providing the reward when they had freely chosen and expected to obtain a certain prize but had received another, and relatively unattractive, reward instead. Those who had selected and expected to obtain a particular reward probably had the strongest anticipations of the pleasure they would feel at receiving this prize, and these pleasant anticipations were not fulfilled when they were given the comparatively unattractive reward instead.

Other studies have varied the strength of the thwarted instigation by making use of the goal gradient principle: The intensity of the striving increases the closer the organism is to the desired objective. Thus, keeping people from reaching a goal almost within their reach (that they strongly expect to obtain) should evoke a stronger aggressive reaction than the same barrier established when the people are further from their objective. In one of these experiments, making use of the Buss "aggression machine" procedure, Thompson and Kolstoe (1973) reported that nonarbitrary as well as arbitrary frustrations led to a significant increment in aggression when the subjects had been close to their goal and their aggressive behavior could help overcome the frustration. Although the Thompson and Kolstoe investigation found no significant indications of a thwarting-engendered hostile aggression, such evidence was reported by Harris (1974). Using as subjects people who were standing in line at various stores, banks, restaurants, and ticket windows, the experimenter deliberately cut into the line in front of a previously selected person, with that individual being either close to the head of the line or at the rear. Technically speaking, there was a partial frustration in both cases, but the person closer to the front presumably had a stronger drive at that time. The thwarted individual's reaction was coded for the severity of the aggression exhibited (so that severe responses probably were a mixture of both instrumental and hostile aggression). In general, the subjects displayed more aggression if they had been exposed to the frustration when they were close to their objective rather than far away from it. This open aggression was relatively weak when the frustrater seemed to have high social status

or was a woman, presumably because the affronted persons restrained themselves on these occasions.

*Aggression-facilitating cues.* The aforementioned finding is one example of how social cues in the immediate situation can influence the strength of the aggression that is revealed after a frustration. These cues can either (a) facilitate the open expression of the thwarting-engendered aggression (e.g., see Harris, 1976), by intensifying the instigation to aggression or by lowering restraints against this behavior, or (b) inhibit the overt display of aggression. Because I have long proposed that situational cues can affect the likelihood of overtly aggressive reactions after a thwarting, I would like to offer a few additional comments about this particular matter.

More than just noting that the aggressive consequences of frustration might not be apparent unless aggression-facilitating cues were also present in the immediate situation, several of my earlier analyses of the frustration-aggression hypothesis (Berkowitz, 1962, 1964) took the strong position that these aggressive cues are necessary if open aggression is actually to occur after a thwarting. It soon became clear, however, mainly from the findings in experiments with animals, that these cues only heighten the aggressive reaction and are not necessary (see Berkowitz, 1969, 1978). A better statement, therefore, is to suggest that appropriate situational stimuli—stimuli that are associated with either reinforcements for aggression (Berkowitz, 1974) or aversive events (Berkowitz, 1982)—can intensify the aggressive reactions resulting from a barrier to goal attainment.

In any event, several studies have introduced such aggression-facilitating cues by showing violent movies to frustrated people. In one of these studies, by Worchel, Hardy, and Hurley (1976), male and female university students watched one of two different full-length aggressive movies or an equally long comedy, and the film was seen either without interruption or with four 2-

<sup>8</sup> In my view it is unfortunate that no independent measures were obtained of how much the subjects desired the possible reward or how unhappy they were at not being able to get this outcome. At least some of the difference between Buss's 1963 and 1966 experiments might conceivably be due to cohort differences in the attractiveness of the rewards that might have been obtained; for some reason, the later subjects might have been somewhat less interested than their earlier counterparts in getting the money prize or the better grades. Similarly, some other studies that also failed to find increased aggression after a frustration have also not demonstrated that their subjects had strongly desired the possible goal or were bothered by their inability to reach the goal. In Gentry's (1970) experiment, as a case in point, there is no independent evidence that the subjects cared that they were unable to complete their assigned "intelligence test" within the allotted time. As a matter of fact, the results for the only possible independent measure in this study, blood pressure changes, suggest that the supposedly frustrated subjects might have been somewhat indifferent to this failure to complete their assignment; although the deliberate insult manipulation used in the experiment did lead to a significant increase in blood pressure, there was no such increase due to the frustration manipulation.

<sup>9</sup> Somewhat similarly, in an experiment by Holmes (1972) the subjects who had to wait quite a while for their session to begin, supposedly because another student was late, expressed relatively strong aggression toward the latecomer in a pseudo-learning task soon afterward. The other student's tardiness presumably was frustrating at least partly because, in not showing up on time, he violated the subjects' expectations.

min-long breaks for an irrelevant commercial. In accord with the results of other movie violence studies, the subjects expressed more hostility to the specified target (one of the experimenter's assistants) after seeing either of the violent movies than after watching the comedy. What is more interesting, the commercial interruptions apparently were somewhat frustrating so that the greatest hostility of all was displayed by the people in the violent movie condition who had to sit through the commercial breaks. This finding did not appear to be due to differences in how interesting the movie was to the subjects. Rather, the investigators suggested the results were consistent with Berkowitz's (1962) notion of how aggression-associated cues in the surrounding situation (in this case, cues provided by the violent film) can facilitate the occurrence of frustration-produced aggression.

This possibility is supported by another movie violence experiment conducted by Geen and Berkowitz (1967). Here, too, subjects who were frustrated by their inability to complete an assigned puzzle were more openly aggressive toward the available target than were the nonthwarted controls only if they had seen an aggressive movie just before. Although the task frustration in this particular study might have been ego deflating to the subjects, the frustration used in yet another experiment, by Geen (1968), was unlikely to have been regarded this way. In this later study some of the participants could not complete their assigned task because of another person's bumbling interference which that individual acknowledged. Those subjects whose aggressive behavior had been verbally reinforced beforehand exhibited the strongest physical attacks on a fellow student after the failure to complete the task. However, even though the frustration was not a "threat to the personality," the nonreinforced participants were also more aggressive than their controls after all of these persons had seen a violent movie.

*Susceptibility to aggressive cues.* Other research suggests that the thwarting-engendered instigation to aggression heightens the frustrated individuals' susceptibility to aggression-related cues in the nearby environment so that they are easily influenced by these aggression stimuli. One such study was reported by Hanratty, O'Neal, and Sulzer (1972). The experimentally treated children in this investigation were unable to win a prize because of their partner's poor performance, whereas the remaining participants were not frustrated at all. Immediately afterward, half of the subjects watched a film showing one adult attack another in a particular manner, and then all of the youngsters had an opportunity to display aggressive behavior. In comparison to their nonthwarted peers, the previously frustrated children were much more likely to copy the aggressive model in their attacks on the available target. Their frustration-generated aggressive inclinations evidently had increased their readiness to imitate other nearby aggressive persons.

Parker and Rogers (1981) obtained comparable results with young boys exposed to an arbitrary thwarting. Some of the frustrated schoolchildren in the Parker and Rogers experiment were shown a brief TV scene in which one youngster acted aggressively, whereas another child behaved in a cooperative manner. In this "multiple-model" condition, the previously frustrated children watched the aggressive character longer than they watched the nonaggressive one, whereas the nonfrustrated con-

trols tended to look at the cooperative character somewhat more. Furthermore, soon afterward, the frustrated boys imitated the aggressive model's actions more than did their nonfrustrated counterparts.

*Competition as frustration.* The many reports of competition-engendered hostility should be added to the aforementioned indications of legitimately produced aggressive tendencies. Competitive encounters are at least partly frustrating as the contestants block each other's attempts to reach the disputed goal and threaten each other with a total loss (Berkowitz, 1962). But equally important for present purposes, in many instances the competition follows accepted rules so that whatever frustration occurs is largely justified. Nevertheless, even though the competitors often thwart each other legitimately, not infrequently they also become somewhat hostile to each other, disparaging each other and even at times trying to hurt each other. Space limitations do not allow a review of all the studies (e.g., Deutsch, 1949) showing such an effect or those not finding any aggressive consequences (e.g., Gaebelein & Taylor, 1971), but it is helpful to look at a few successful investigations.

The "Robbers Cave" study carried out by Sherif, Harvey, White, Hood, and Sherif (1961) is perhaps the best known demonstration of competition-produced hostility. The young boys in the competing groups expressed negative opinions of their rivals and even exhibited relatively high levels of hostile aggression toward them. Worchel, Andreoli, and Folger (1977) replicated the main features of this study in a much better controlled experiment and obtained comparable results. Nelson, Gelfand, and Hartmann (1969) also reported supporting observations in an experiment with 5- and 6-year-old children. Each youngster played either (a) competitively, winning or losing most of the contests, or (b) noncompetitively, and then all were allowed to play alone with all of the toys in the room, including a large Bobo doll. Presumably because of their aggressive inclinations, the subjects who had failed in the competition displayed the highest level of aggressive acts in this free-play session, but even those who had succeeded showed a somewhat higher level of aggression than did their counterparts in the noncompetitive condition, especially in the case of boys.<sup>10</sup>

In summary, many of the studies of the effects of competitive games suggest that competition is more likely to arouse aggressive tendencies than to provide a cathartic discharge of supposedly pent-up hostile urges (Berkowitz, 1962). Rocha and Rogers (1976) came to a similar conclusion and maintained that their findings "support Katz and Schanck's (1938) position that

<sup>10</sup> It is not surprising, of course, that the success in the competition resulted in a lower level of aggressiveness: The successful contestants had reached their goal, and this goal attainment was probably pleasant enough to decrease the negative affect that had been generated during the competition. Nonetheless, in this case, and in other instances as well, there apparently was still some residual ill will remaining from the competition itself; the contestants had threatened each other with failure during the contest and could even have impeded each other's progress toward victory. The happiness arising from the success evidently had not completely eliminated the negative affect produced by the struggle or the negative attitude toward the rivals that had developed at that time.

competitive situations frequently arouse feelings of rivalry that . . . involve going out of one's way to hurt the other person" (p. 592).

### *Exceptions: Frustrations Do Not Always Lead To Overt Aggression*

The evidence presented in the preceding section certainly does not mean that frustrations invariably lead to open attacks on an available target, even when the interference with goal attainment meets the specifications spelled out by Dollard and his colleagues. There are many occasions during which the people prevented from obtaining an expected and desired outcome do not exhibit overt aggression (Bandura, 1973; Baron, 1977; Zillmann, 1979), and it is clear that a variety of psychological processes can intervene to determine whether a given thwarting will be followed by aggressive acts. In my view, many, but not all, of these factors can readily be understood within the behavior theory perspective used by the Yale group. I will now look at these intervening processes, beginning with those that seem to be most compatible with the Dollard et al. (1939) conception, and then turn to some that apparently were not considered by Dollard and his colleagues. Again, this article is highly selective in citing research on these matters and makes no effort to present an exhaustive review of all the pertinent studies.

*Social rules and inhibitions against aggressive reactions to nonarbitrary frustrations.* Dollard et al. pointed out that expectations of punishment can evoke inhibitions against the open display of aggression. As was suggested earlier, many persons in our society undoubtedly believe that other people would disapprove if they acted aggressively, especially in response to a thwarting that appears justified by social rules or that is not directed against them personally (Cohen, 1955). Anticipating such a disapproval, they might well inhibit whatever overt aggression they are disposed to show at that time. Nevertheless, even though the frustration-generated aggressive inclinations are restrained by expectations of punishment (or by previously acquired and self-imposed rules of conduct), the instigation to aggression might still be operative.

The well-known (and frequently misunderstood) experiment by Burnstein and Worchel (1962) is a case in point. Groups of male undergraduates were prevented from achieving their goal because one of the participants (the experimenter's confederate) persisted in interrupting and asking questions. In the nonarbitrary frustration condition the questioner's task interference was readily attributable to his obvious hearing defect, whereas there was no such legitimate excuse for his interfering behavior in the other, supposedly arbitrary frustration condition. When the subjects evaluated their fellow group members at the end of the session, none of the men exposed to the nonarbitrary frustration were willing to reject the legitimately interfering confederate publicly in their open statements to the group. However, they were more likely to give the confederate very low ratings privately in a questionnaire (e.g., on an item tapping their liking for him) in both frustration conditions than in the nonthwarted control condition. The subjects evaluated harshly the person who frustrated them but did not express

these opinions openly when these judgments might have seemed improper.

*Prior learning and individual differences.* N. E. Miller (1941) explicitly noted that frustrations produce instigations to several different kinds of behavior including aggression. Although Dollard et al. were silent as to whether humans were innately disposed to become aggressive on failing to achieve their desired objective (see Berkowitz, 1969, for a discussion of this issue), their general interest in learning suggests that they probably would have expected the connection between frustration and aggression to be modifiable by experience. Indeed, as Bandura (1973) emphasized, there is ample evidence that learning can alter the readiness to respond aggressively to a thwarting. Frustrated persons may not display their aggressive inclinations openly if they have been taught to think that it is improper or dangerous to attack the available target or if they have acquired other modes of response to frustration that are stronger than their aggressive tendencies. Furthermore, a history of frequent exposures to frustrating events could increase the likelihood of aggressive reactions (see Berkowitz, 1962), perhaps in a variety of ways, such as by decreasing the probability of alternative nonaggressive responses, weakening restraints against aggression, or heightening the intensity of the frustration-engendered instigation to aggression.

Whatever the specific processes operating here, and whether through prior learning or through genetic influences, there clearly are individual differences in the likelihood that a frustration will lead to an open attack on some available target. More than 30 years ago, thinking in terms of the then-dominant concepts of that period, Block and Martin (1955) suggested that ego strength can mediate the effects of a frustration. The young children in their experiment who had been previously assessed as having low ego strength were much more likely than their peers with stronger egos to react aggressively to a barrier to goal attainment. The former evidently were less able to restrain and regulate their emotional responses to the frustration. More recently, Strube, Turner, Cerro, Stevens, and Hinchey (1984) identified another set of individual qualities that can also affect the probability of aggressive reactions, apparently also by influencing the strength of self-restraints. On thwarting half of their subjects by giving them an insoluble puzzle, the researchers found that the participants in this condition who had a Type A personality punished an innocent target more severely than did the nonfrustrated Type As. Thwarted Type Bs were somewhat (but not significantly) more aggressive than their nonfrustrated counterparts. On the basis of all their findings the investigators suggested that the frustration effect was most readily seen in the Type A subjects because these people were less able to control themselves than were the Type Bs. Interestingly, the interaction of personality type and frustration was apparent only when the subjects were engaged in hostile (i.e., emotional) rather than instrumental aggression.

*Thoughts about the goal.* One can readily interpret the effects of the aforementioned personality differences in the behavioristic language used by Dollard et al. if one cares to do so. However, because of the core assumptions involved in their behavior theory approach, the Yale group did not adequately recognize the extent to which cognitive processes can mediate the emotional

reactions to frustrations. These intervening processes can be of various sorts. For one thing, according to research carried out since 1939, thoughts about the goal itself can play a role. As an example, Thibaut and Kelley (1959) argued that how people react on not attaining a desired outcome depends in part on what other, alternative goals they believe are available to them. Folger's (1986) referent cognitions theory is another variation on this theme. It states that individuals will become especially resentful at not reaching their objective if they can readily imagine attaining this outcome under other circumstances, especially if they are unjustifiably blocked from reaching their goal. Of course, it is possible that the thoughts about getting the desired outcome under other circumstances activate thoughts about the pleasures that would have been experienced had the objective been reached. If so, the resulting resentment could be due to the failure to obtain these activated and expected pleasures.

*Thoughts about the reason for the frustration.* As was noted previously, there is now good evidence showing that the reasons people develop to explain why they failed to get what they want can greatly affect their responses to the frustration (Averill, 1982; Ferguson & Rule, 1983; Rule & Nesdale, 1976; Zillmann, 1978). They are much more likely to become openly aggressive at someone's blocking their goal attainment if they believe their frustrater had deliberately and unjustifiably attempted to keep them from reaching their goal than if they think the thwarting had not been intentional or had not been directed at them personally. It was also mentioned before that the timing of this attribution can also be important (Johnson & Rule, 1986; Kremer & Stephens, 1983; Zillmann, 1978; Zillmann & Cantor, 1976). All of this brings up two related questions: Just why do the individuals' interpretations of their frustration affect their emotional reactions? And more particularly, why are they more aggressive when they learn about the frustrater's nonmalevolent intentions after they experience the unhappy event rather than before?

A suggestion made earlier, that attributions regarding the frustrater's behavior exert their influence through both inhibitory and instigating processes, provides a possible answer. Restraints probably come into play when people think that they have not been deliberately mistreated and that the thwarting they suffered was legitimate. On the other hand, the instigation to aggression could well be heightened by the thought that the instigator had intentionally blocked their attempt to satisfy their desires; not only do the thwarted persons fail to get what they want but they have also been attacked personally. This latter attribution obviously would arouse relatively strong negative feelings: The unpleasant affect produced by the perception of an unfair treatment or a personal attack could add to the unhappiness generated by the thwarting itself. Following up on this line of reasoning, the mitigating information in Zillmann's research might also have operated through affecting the subjects' experienced unpleasantness. The participants were less bothered by the instigator's unwarranted behavior if they knew beforehand that this action was not directed at them personally; there was no perception of a personal attack to produce the additional negative affect. However, if the subjects were not told about the mitigating circumstances until after the emotion-pre-

cipitating behavior had occurred, strong negative feelings arose and apparently started generating aggressive inclinations. The late-arriving information evidently did not eliminate the unpleasant feelings altogether once they had been activated and thus did not stop these feelings from creating the instigation to aggression.

#### Revised Formulation: Frustrations as Aversive Events

This interpretation of the effects of attributions brings one to the core of the present proposed revision of the frustration-aggression hypothesis. Basically, I argue here, frustrations can give rise to aggressive inclinations because they are aversive (Berkowitz, 1978, 1983). They presumably produce an instigation to aggression only to the extent that they are unpleasant to those affected.<sup>11</sup>

This conception of frustrations as aversive occurrences, events people ordinarily seek to avoid, is not new. A number of psychologists have noted that a sudden failure to reach an anticipated goal has some of the characteristics of a punishment and that animals tend to respond to frustrations much as they react to other aversive situations (e.g., Ferster, 1957). What is relatively new about the present analysis is the proposal that thwartings, as aversive events, evoke negative affect (any feeling that people typically seek to lessen or eliminate), and it is this negative feeling that generates the aggressive inclinations. From this perspective, an unexpected interference is more apt to provoke an aggressive reaction than is an anticipated barrier to goal attainment because the former is usually much more unpleasant. Furthermore, the factors identified by Dollard and his colleagues as determining the strength of the frustration-produced instigation to aggression, such as the intensity of the drive that cannot be satisfied or the extent to which goal attainment is blocked (Dollard et al., 1939, p. 28), have this effect because they govern the magnitude of displeasure that is experienced. The present formulation also contends that the aggression-instigating effects of frustrations and insults cannot be compared in the abstract, as some psychologists have done (Baron, 1977; Buss, 1963, 1966). All frustrations are not equally bothersome, and all insults do not generate the same displeasure. One can be bitterly disappointed at not reaching an attractive and expected goal and regard another's insult as only mildly unpleasant. It is not the exact nature of the aversive incident that is important but how intense the resulting negative affect is.

#### Theoretical Model

*Evidence of aversively stimulated aggression.* A growing body of evidence demonstrates that many different aversive occurrences can produce aggressive reactions in humans as well as

<sup>11</sup> In 1962 I suggested that it might be helpful to think of the thwarting-generated instigation to aggression as "anger" (Berkowitz, 1962). The proposed reformulation, by contrast, prefers to regard anger as a perceptual experience that typically parallels the negative affect-produced inclination to aggression but is governed by somewhat different processes and, as a consequence, does not always accompany this instigation.

in lower animals (Baron, 1977; Berkowitz, 1982, 1983; Ulrich, 1966; Zillmann, 1979). This phenomenon is so widespread that it has been given different names, including "irritable," "annoyance-motivated," and "aversively stimulated" aggression, by various writers. This is not to say that unpleasant events always provoke open attacks. The afflicted animals frequently prefer to flee rather than fight, and the likelihood of aggression varies with prior learning, the presence of a suitable target, and the availability of alternative responses, among other things (Bandura, 1973; Berkowitz, 1983). Nevertheless, under the right conditions a wide variety of unpleasant events can promote hostility and even open attacks on an available target. Some of the human-based evidence supporting this contention has been cited elsewhere (Berkowitz, 1982, 1983): In laboratory experiments, irritable cigarette smoke, foul odors, high room temperatures, and even disgusting scenes have all been shown to heighten the hostility exhibited or punishment given to another person. Extending this phenomenon, naturalistic investigations have found that high temperatures tend to increase crimes of violence (Anderson & Anderson, 1984) and that high temperatures and atmospheric pollution can even contribute to family disorders (Rotton & Frey, 1985).

It is important to recognize here that many of the aggressive actions recorded in this research could not lessen the unpleasant condition to which the aggressors were exposed. Although several writers (e.g., Bandura, 1973; Zillmann, 1979) view aversively stimulated aggression as being largely instrumental aggression oriented toward the reduction of noxious stimulation, it is clear that this is not always the case. Much of the negative affect-produced aggression is hostile (or emotional or expressive) aggression and has little instrumental value. With this suggestion in mind, Azrin, Hutchinson, and McLaughlin (1965) conducted a study in which paired animals worked to obtain a target to attack, and I conducted two experiments at the human level, in which young adults feeling severe physical discomfort were more punitive to an innocent bystander when they believed the punishment would harm rather than help this individual (Berkowitz, Cochran, & Embree, 1981).

Other findings indicate that the hostility or aggression displayed is a direct result of negative affect. Baron (1984) reported that deliberately provoked subjects became less hostile toward their tormentor after they had an irrelevant pleasant experience, as if the pleasant incident had made the insulted subjects feel better, thus lessening their negative affect-generated aggressive inclinations.

*Theoretical analysis.* Other papers have advanced a cognitive neoassociation model to account for these and other observations (Berkowitz, 1983, 1988; Berkowitz & Heimer, 1989; Finman & Berkowitz, 1989). Simply stated, the analysis posits several stages in the formation of aversively engendered emotional experiences and behaviors. In the first stage the aversive event produces negative affect. This unpleasant feeling presumably then gives rise automatically to a variety of expressive-motor reactions, feelings, thoughts, and memories that are associated with both flight and fight tendencies, that is, with inclinations to escape/avoid and to attack. The experience of fear presumably accompanies the escape/avoidance tendencies and theoretically develops out of the ideas, memories, expressive-motor reac-

tions, and physiological sensations associated with escape/avoidance, whereas the experience of anger theoretically goes along with the aggressive tendencies and is built from aggression-related ideas, memories, expressive-motor responses, and bodily sensations. A variety of factors—genetic, learned, and situational—supposedly determine the relative strengths of the two tendencies and their associated feelings, thoughts, and memories.

In these early stages in the production of the emotional experience, which includes rudimentary feelings of anger and fear, cognitive processes theoretically have little influence beyond the appraisal of the emotional incident as aversive. However, cognitions other than the initial appraisal can go into operation and substantially influence the subsequent emotional reactions and experiences after the initial automatic, responses. It is in these later stages, in which higher order processing is occurring, that people make causal attributions about their unpleasant experiences, think about the exact nature of their feelings, try to control their feelings and their actions, and so on. The basic experiences and reactions are now enriched, differentiated, intensified, or suppressed. At this time, then, the earlier emotional experience is further constructed out of the various ideational, memorial, and sensory inputs that are salient to the person. This construction is presumably guided by the individual's schemas regarding the situational origins and experiential nature of particular emotions.<sup>12</sup>

As was indicated before, this model regards the later, more differentiated anger as a perceptual experience growing out of, and constructed from, awareness of the aggression-associated physiological changes, expressive-motor reactions, and ideas and memories activated by the aversive event, whereas the instigation to aggression is viewed as an inclination to do harm that may or may not be accompanied by a conscious anger experience. Hostility refers to an unfavorable judgment of another that often arises from the negative ideas and memories as well as the aggressive instigation arising from the negative affect.

In accord with other recent conceptions, the present cognitive neoassociation model also states that feelings, ideas, and memories are linked together in memory, thereby forming emotional networks. The activation of any one component in a network theoretically tends to activate the other components with which it is associated. Unhappy or depressive thoughts presumably activate other negative memories and feelings and thus should also promote something of an anger experience as well as aggressive inclinations (Berkowitz & Heimer, 1989).

*Physical pain.* Physical pain is the clearest example of negative affect, and a great many experiments have demonstrated that the infliction of pain frequently spurs a wide variety of organisms, humans as well as other species, to attack available targets (Berkowitz, 1983; Ulrich, 1966). This is not to say that

<sup>12</sup> The analysis summarized here is somewhat similar to the position recently taken by Mayer and Gaschke (1988) stating that mood (and emotions in my sense) can be experienced both directly, in terms of the pleasant-unpleasant and arousal-calm dimensions, and reflectively. According to Mayer and Gaschke, the latter reflective experience presumably grows out of higher order processing in which the mood is monitored, evaluated, and sometimes changed.

aggression is the likeliest response to pain; many animals would rather flee than fight. Genetic background, prior learning, and situational influences can all determine what is the preferred response to the aversive stimulus on any one occasion (Bandura, 1973; Zillmann, 1979). Nevertheless, the pain activates an instigation to aggression along with instigations to escape/avoid the noxious stimulus, and the aggressive inclination is apt to be revealed in overt attacks if a suitable target is close by, if the alternative reactions do not eliminate the aversive occurrence, and if restraints against aggression are relatively weak at the time (Berkowitz, 1983; Ulrich, Hutchinson, & Azrin, 1965).

*Psychological discomfort.* Psychological as well as physical discomfort can produce the aggression-activating negative affect. The participants in one investigation became hostile after being shown scenes they regarded as disgusting (Zillmann, Bryant, Comisky, & Medoff, 1981). Also, many people are hostile toward those who hold attitudes and values greatly different from their own, presumably because the challenge to their attitudes and values is unpleasant (Rosenbaum, 1986).

Even depression can arouse aggressive tendencies (Berkowitz, 1983). This last statement will not be surprising to many mental health specialists because the clinical literature abounds with reports of hostility displayed by adult and child depressives. But whereas psychoanalytic theory states that the hostility produces the depression (depression supposedly is aggression turned inward), an increasing number of experiments have shown that the experimental inculcation of depressive moods frequently gives rise to angry feelings and even attacks on an available target, especially if the subjects give little thought to what they are doing (Berkowitz, 1983; Finman & Berkowitz, 1989; Hynan & Grush, 1986; I. Miller & Norman, 1979). Depressives may often be apathetic and unwilling to exert themselves, as the learned helplessness formulation contends (W. Miller & Seligman, 1975), but their apathy tends to impede their instrumental behavior rather than their expressive behavior; they may be reluctant to carry out a deliberate and effortful attack on another and yet may reveal their underlying aggressive inclinations in impulsive bursts of temper (Berkowitz, 1983; Finman & Berkowitz, 1989).

### *Some Similarities in Effects of Discomfort and Frustration*

*Affect-activated thoughts and feelings.* In accord with the present model, studies have found that physical discomfort heightens the accessibility of hostile ideas. In one experiment (Monteith, Berkowitz, Kruglanski, & Blair, 1989), for example, the subjects were asked to imagine themselves in different kinds of incidents and were to talk about their reactions to these incidents. Half of the participants did their talking while they were under severe physical discomfort; the other half were under little discomfort when they talked. Those subjects who were suffering at the time tended to express more ideas related to annoyance, anger, and hostility, but only when they were talking about two emotional incidents rather than about a neutral event. The physical pain apparently primed these hostile thoughts, and the emotional incidents that were discussed then brought these thoughts to mind (or allowed them to be expressed). Rule, Tay-

lor, and Dobbs (1987) reported comparable findings in an experiment in which some of the subjects were exposed to unpleasantly high room temperatures. In this case the aversive stimulation increased the accessibility of aggressive thoughts, and these were revealed in the participants' stories about socially ambiguous rather than emotionally neutral incidents. Even the nature of people's recollections can be influenced by their physical discomfort at the time. Yet another experiment (Monteith et al., 1989, Study 2) demonstrated that women experiencing mild pain, in comparison with those in a relaxed condition, were more likely to recall incidents of tension, disagreement, and conflict when they thought about someone with whom they had an ambivalent relationship.

Somewhat parallel to these results, there are indications that frustrations also heighten the accessibility of aggressive ideas. An experiment with 8-year-old boys (Spielberg & Rutkin, 1974) found that the youngsters prevented from completing a competitive game because of another person's interference expressed more aggressive thoughts in response to the Rosenzweig Picture-Frustration Study than did a nonhindered control group. Also relevant to this point are findings in the previously mentioned Monteith, Berkowitz et al. (Note 1) research. In the first study in this series, the subjects were asked to talk about three different situations that were briefly sketched out for them. In one of these, a supposedly frustrating incident, the participants were to imagine themselves driving to an important job interview and then becoming tied up in a massive traffic jam so that they were in danger of missing their appointment. This frustration certainly had not been directed at them personally. However, when talking about this situation they expressed reliably more anger- and hostility-related ideas than when talking about any of the other incidents. Here, too, the thought of the frustrating event had apparently increased the accessibility of anger and hostility ideas.

*Associations with unpleasant conditions.* Mention was made earlier of the way in which appropriate environmental cues (stimuli associated with aggression or having an aggressive meaning) can strengthen the aggressive reactions produced by a frustration (Berkowitz, 1964). In a comparable manner, seemingly neutral stimuli in the surrounding situation can also intensify impulsive aggressive reactions because these stimuli are associated with aversive events or have a decidedly unpleasant meaning.

Several experiments, with animals and with humans, testify to the aggression-evoking effects of such stimuli. The mere presence of a stimulus associated with strong negative affect can lead to stronger attacks than would otherwise have occurred. In some of the studies dealing with this effect, the aversive stimulus was in the surrounding environment. Vernon and Ulrich (1966), among others, demonstrated that external stimuli can start animals fighting after these stimuli have been repeatedly paired with painful events. Fraczek (1974) obtained comparable results at the human level. His subjects were much more punitive toward their target when they saw a color that had previously been associated with the receipt of electric shocks.

Berkowitz and Frodi (1979) went on from here to suggest that many persons' reactions to disfigured or handicapped individuals display what is essentially the same kind of phenomenon.

Although people often sympathize with those who are afflicted or crippled, many also associate the handicapped with pain and suffering. The result is that one might be ambivalent toward them. On the one hand, one is sorry for them and might want to make them feel better. But at the same time, if one fails to monitor and restrain one's actions, one is apt to react in a hostile manner because of the aversive associations in one's mind. In the Berkowitz and Frodi experiment, university women who were engaged in a distracting task so that they were not fully aware of what they were doing were required to punish a child whenever the youngster made a mistake. In the researchers' second experiment along these lines, the child either stuttered or spoke normally and either was made to appear funny looking or had a normal appearance. Both of these unpleasant qualities independently influenced the intensity of the punishment received, and as a result, the distracted women punished the doubly afflicted boy much more severely for his mistakes than they punished the "normal" child. Presumably because of his association with aversive conditions (abnormal speech and appearance), this youngster drew stronger punishment from the women who were not fully monitoring their actions.

### Conclusions

The argument in this article is a fairly simple one. It essentially states that there is a good deal of evidence consistent with the classic frustration-aggression hypothesis first advanced by Dollard et al. (1939) when one, first, confines this thesis to (a) that part of the formulation dealing with frustration reactions and (b) those acts that are primarily hostile (emotional or expressive) aggression rather than instrumental aggression and, second, recognizes that the frustration involves the nonattainment of an expected gratification rather than a mere deprivation. A barrier keeping people from reaching an attractive goal they had expected to obtain can lead to open aggression. Contrary to the widespread contention that only arbitrary, illegitimate, or personally directed interferences give rise to aggression, aggression is at times displayed when the thwarting is socially justified or is not directed against the subjects personally. Illegitimately imposed barriers to goal attainment are more likely to produce aggressive responses than are those that seem to be socially proper, but even the latter can activate an instigation to aggression. It also appears that many of the published failures to confirm the Dollard et al. (1939) proposition can be explained in terms of their formulation. Thus, although the Yale group did not give adequate attention to the way in which thought processes can influence the reaction to the goal blocking, the effects of the frustrated persons' appraisals and attributions probably operate to a considerable extent through the instigatory and inhibitory processes that Dollard and his associates discussed. People are more strongly instigated to attack their frustrator when they think they have been deliberately and wrongly kept from reaching their goal than when they believe the interference has only been accidental, and they may be inclined to inhibit their aggressive reactions when they think the thwarting was socially proper.

Although I have argued for the essential validity of the core proposition in the Dollard et al. analysis, I have also offered a

major modification to this formulation: Frustrations are aversive events and generate aggressive inclinations only to the extent that they produce negative affect. An unanticipated failure to obtain an attractive goal is more unpleasant than an expected failure, and it is the greater displeasure in the former case that gives rise to the stronger instigation to aggression. Similarly, the thwarted persons' appraisals and attributions presumably determine how bad they feel at not getting what they had wanted so that they are most aggressively inclined when they experience strong negative affect.

In attempting to buttress this interpretation of the frustration-aggression relationship, this article points to the growing number of studies showing that aversive events frequently give rise to relatively high levels of aggression and to the indications of a parallel between the effects of frustrations and aversive stimulation. However, the reader might also want to consider a thought experiment. Imagine telling someone that frustrations produce aggressive reactions because they are unpleasant. Would your listener be at all surprised by such a statement? The present thesis is to a certain extent a matter of common sense, yet it also goes beyond common sense in at least one important respect: The formulation suggests, somewhat tentatively, that any kind of negative affect, sadness as well as depression and agitated irritability, will produce aggressive inclinations and the primitive experience of anger before the higher order processing goes into operation. Further research, not only common sense, is obviously needed to test this assumption.

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