

That's Easy For You to Say: Action Identification and Speech Fluency

Robin R. Vallacher
Florida Atlantic University

Daniel M. Wegner
Trinity University

Maria P. Somoza
Florida Atlantic University

Action identification theory holds that an action can be identified by the performer in different ways, and that these various act identities differ in their appropriateness for maintaining the action effectively. Optimal action identification exists when a personally easy action is identified in relatively high-level terms (i.e., the action's effects and implications) or a personally difficult action is identified in relatively low-level terms (i.e., the action's mechanical details). To test the optimality hypothesis with respect to speech fluency, subjects were asked to deliver a speech to either an easy-to-persuade audience or a difficult-to-persuade audience and induced to think about the action in either high-level or low-level terms. As predicted, subjects made fewer speech errors and felt more satisfied with their performance when the task was personally easy and identified at high level and when the task was personally difficult and identified at low level. Optimal action identification made things easier for them to say.

Communication is the most pervasive feature of social life, and it is arguably the most important as well. In virtually every type of social exchange, from intimacy to public presentations, successful attainment of one's goals hinges on how effectively one provides information, conveys sentiments, expresses opinions, or otherwise communicates to a target audience. Communication effectiveness, however, is hardly a foregone conclusion in most exchanges; information, sentiments, and opinions are all too frequently expressed awkwardly and with trepidation, leaving the target unimpressed and uninfluenced. Interestingly, such instances of communication failure often occur when the communicator is trying his or her best to be effective. The present research examines why this is the case and demonstrates how the effectiveness of communication attempts can be enhanced, even under conditions that normally serve as communication impediments.

Action Identification

The rationale for this research follows from action identification theory (Vallacher & Wegner, 1985, 1987; Wegner & Val-

lacher, 1986, 1987). This theory recognizes that any given action can be mentally represented or identified by the actor in many different ways (cf. Anscombe, 1957; Danto, 1963; Goldman, 1970; Wittgenstein, 1953), and goes on to suggest that at any given time only one of these possible identifications is likely to be prepotent for the actor. So although talking, for example, could be identified as *sharing information*, *expressing an opinion*, *influencing someone*, *passing time*, or *choosing words*, the actor is likely to have in mind only one of these identifications when he or she undertakes the act.

The prepotence of one act identity at the expense of others is said to reflect a compromise between a concern for comprehensive understanding of the action and a concern with performing the action effectively. The concern with comprehensive understanding sensitizes the actor to the action's socially conveyed meanings, causal effects, or self-evaluative implications. Because such identities are superordinate to more basic or molecular depictions (e.g., the physical movements involved in executing the action), they represent *high-level* identities in the actor's overall knowledge structure for the action. Thus, *influencing someone* is a high-level identity with respect to *talking* because one does the former identity by doing the latter identity. In a similar fashion, *talking* is a high-level identity with respect to *choosing words* (i.e., one *talks* by *choosing words*). The concern with effective performance, meanwhile, often requires the prepotency of far less meaningful, more molecular identities. Because such identities are subordinate to high-level effects and implications, they represent *lower-level* identities in the knowledge structure for the action. So, although there is a natural inclination to think about one's action in meaningful,

This research was supported in part by National Science Foundation Grant BNS 86-06035. We wish to thank David Mann, Kathy Larsen, Betty Tuller, and Al Vargas for their assistance in data collection and analysis. The helpful comments of Tom Monson, Harry Reis, and three anonymous reviewers on an earlier version of this article are greatly appreciated.

Correspondence concerning this article should be addressed to Robin R. Vallacher, Department of Psychology, Florida Atlantic University, Boca Raton, Florida 33431-0991.

high-level terms, the identity that actually becomes prepotent may exist at a substantially lower level in the act identity hierarchy because of the concern with effective performance.

Optimal Versus Nonoptimal Identification

Research to date confirms that people do strike such compromises in thinking about their actions. Specifically, the level of identification that assumes prepotence for an action depends on several criteria of the action's subjective performance difficulty, including its judged complexity, enactment time, and unfamiliarity (Vallacher & Wegner, 1985, 1987; Wegner & Vallacher, 1986). Thus, the more subjectively difficult (i.e., complex, unfamiliar, etc.) an action is, the lower the level at which it is likely to be identified. In essence, this compromise between high-level meaning and lower-level performance concerns establishes an *optimal* level of identification. Identities at a higher level than this optimum provide insufficient detail to perform the action effectively, whereas identities at a lower level than the optimum unnecessarily disintegrate the action, robbing the performance of its fluidity and coordination.

Despite this normative tendency to embrace an optimal level of action identification, people often identify what they are doing in ways that promote less than optimal performance on their part. The prepotence of nonoptimal identities reflects the fact that the available identities for an act are constrained by the context in which the action occurs. Many contexts are replete with cues to an action's causal effects, socially labeled meanings, and self-defining significance, and thus are stacked in favor of relatively high-level identities. When offered a reward or threatened with punishment for certain behavior, for example, it is nearly impossible not to define what one is doing in these terms (cf. McGraw, 1978; Schwartz, 1982). Similarly, situations involving competition (e.g., Martens & Landers, 1972), audience evaluation (e.g., Cottrell, 1972), or other factors fostering pressure to do well (cf. Baumeister, 1984; Vallacher, Wegner, & Frederick, 1987) may keep the person mindful of self-evaluative high-level identities (e.g., *competing*, *showing my skill*, *impressing a group of people*) at the expense of lower-level, less meaning-laden identities. If the action at stake is personally difficult for the person and thus best maintained under relatively low-level identities, the context-induced high-level identities are likely to undermine the person's performance. The mental state associated with this type of nonoptimality can be described as one of *identity inflation*, in that the action's subjective meaning is inflated beyond an identification level that would enable effective performance.

Other contexts are likely to make people sensitive to relatively low-level identities. A primary source of low-level prepotence is action interference; the situation may contain distractions, obstacles, and other sources of disruption that serve to render lower-level identities prepotent (e.g., Wegner et al., 1984). Thus, when strong winds disrupt a tennis game, poor transmission quality disrupts a phone call, or an unfamiliar phrase disrupts a conversation, the person is likely to become suddenly mindful of the lower-level features of what he or she is doing. If the action is personally easy for the person and thus best maintained with relatively high-level identities in mind, the prepotence of lower-

level identities resulting from disruption can undermine the quality of the person's performance. The mental state associated with this type of nonoptimality can be described as one of *identity fragmentation*, in that the action is understood in terms of specific components and mechanisms rather than in terms of an integrated goal or implication.

To date, the research relevant to the optimality hypothesis has been correlational in nature and thus ambiguous with respect to issues of causal primacy (Vallacher & Wegner, 1985; Wegner & Vallacher, 1986). In one study, for example, college students in the midst of a difficult exam were asked to identify what they were doing (Vallacher, Wegner, Park, & Ely, 1982; cited in Vallacher & Wegner, 1985). Results showed that those students who identified *taking an exam* in relatively low-level terms (e.g., *reading questions*) tended to perform better on the exam than did students who identified exam taking only in higher-level terms (e.g., *earning a grade*, *demonstrating my intelligence*). In these and other studies relevant to optimality (see Vallacher & Wegner, 1985; Wegner & Vallacher, 1986), we have found that people who do not identify an action in accordance with its personal difficulty tend to experience problems in performing the action. Complex, unfamiliar, or time-consuming actions identified in high-level terms are enacted poorly, as are simple, overlearned, or brief actions identified in low-level terms. In none of these studies, however, were subjects assigned to either identification level or personal difficulty conditions, so the data obtained do not provide unequivocal support for the optimality hypothesis. It is conceivable, for instance, that the prepotency of a particular identity in this research was a result rather than a cause of subjects' problems in maintaining an action.

Optimality Versus Nonoptimality in Communication

The present research was designed to provide an experimental test of the optimality hypothesis with respect to communication. As noted earlier, communication is a pervasive and significant component of social relations, and for this reason it is probably identified by most people in most contexts in fairly high-level terms. In talking to someone, after all, one does not simply move one's lips or make utterances; rather, one *reveals what one is like*, *tries to impress someone*, *expresses an opinion*, or *attempts to persuade*. The successful performance of these identities can prove to be a formidable task, especially when the communication target is skeptical regarding one's message. According to the optimality hypothesis, when a communication task is personally difficult, the person should concentrate on the lower- as opposed to higher-level identities of communication, focusing on *how* to communicate rather than *why* he or she is communicating. Thus, for example, when faced with a skeptical communication target, the communicator should concern himself or herself with choosing the right words, maintaining appropriate vocal quality, and so forth. Because of the salient social cues to the act's higher-level meanings in most communication contexts, however, maintaining a lower-level focus may prove next to impossible despite its functional value. When delivering a persuasive speech, for instance, or describing oneself to a new acquaintance, the lower-level features of the communication

pale in comparison to the success versus failure one is experiencing or the impression one is creating.

Our research, however, has revealed a variety of ways in which an action's lower-level details can be made prepotent in spite of the action's obvious significance (Vallacher & Wegner, 1985; Wegner, Vallacher, Kiersted, & Dizadji, 1986; Wegner et al., 1984). One proven strategy is to disrupt the act in some way. In a study by Wegner et al. (1984), for instance, experienced coffee drinkers who drank from a large unwieldy cup tended to identify the act of drinking coffee in molecular terms (e.g., *drinking a liquid*, *lifting a cup to my lips*, and *swallowing*). Presumably, the awkwardness associated with drinking from the unwieldy cup disrupted the normally automatic act of drinking and rendered lower-level identities prepotent in lieu of the act's more common high-level identities (e.g., *getting energized*, *promoting my caffeine habit*).

Conceivably, communication is amenable to increased lower-level prepotence through conceptually equivalent interventions. Specifically, one could bring about increased low-level prepotence by disrupting the person's communication attempt in some way. If so, this suggests a counterintuitive conclusion regarding communication effectiveness: When a communication task is personally difficult, communication should proceed more effectively if the communicator is disrupted in some way during the communication. Intuition would seem to suggest that a disruption should be less debilitating when a communication task is easy as opposed to when it is difficult, but the optimality hypothesis suggests that a disruption should be especially harmful when the task is easy, because it engenders a lower level of identification than that dictated by the personal difficulty of the act.

Overview of Present Investigation

To examine this reasoning, we asked college students to deliver a prepared speech advocating a tougher university policy regarding cheating, with the ostensible possibility that their taped speech would be viewed by either a group of students opposed to tougher penalties or a group in favor of harsher penalties. Half the subjects were led to think about the action's significance (e.g., its goal of persuasion) and half were induced through a disruption manipulation to think about the mechanics of their communication. We assessed subjects' communication effectiveness by measuring both their objective degree of speech dysfluency (e.g., stuttering) and their self-perceived effectiveness. We predicted that when the ostensible audience was described as easy to persuade, subjects would be more effective by these criteria when induced to think about their behavior in high-level as opposed to low-level terms. When the ostensible audience was described as hard to persuade, however, subjects were expected to be more effective when induced to think about their behavior in lower-level terms.

Method

Subjects and Design

Fifty-two undergraduates (45 women, 7 men), participating individually in exchange for extra credit in their psychology courses, were

randomly assigned to the cells of a 2 (audience: easy vs. hard to persuade) \times 2 (identification level: low vs. high) factorial design. Their task was to deliver a prepared speech advocating a tougher university policy regarding classroom cheating to a bogus audience ostensibly observing them on a video monitor. The audience was described as either receptive to or skeptical of the position advocated in the speech. Half the subjects in each audience difficulty condition were induced to think about the details of giving the speech by means of a disruption manipulation; the others were reminded that the goal of the speech was to persuade the audience. Dependent measures included subjects' speech dysfluency and their self-reports of anxiety, persuasion success, and performance satisfaction.

Procedure

One of two female experimenters greeted the subject and escorted him or her to a small (10 ft \times 10 ft) lab equipped with a 20-in color TV monitor, a color VCR ($\frac{1}{2}$ in) positioned on top of the monitor, and a color video camera attached to a tripod positioned to the right of the monitor. The subject was seated at the table on which the monitor and VCR were placed so that he or she could view the monitor and be filmed by the camera. The subject was asked to read silently a brief speech advocating tougher university policy regarding classroom cheating. After becoming familiar with the speech in this way, the experimenter instructed the subject to deliver it verbatim to the video camera with the (bogus) understanding that a small audience of undergraduates interested in the topic would subsequently view and evaluate the speech. At this point, the audience difficulty and identification level manipulations were introduced.

Audience difficulty. Subjects in an easy-to-persuade-audience condition were told that their speech would be viewed by a student group at the university that was in favor of establishing a new, tougher policy regarding classroom cheating. Subjects in a hard-to-persuade-audience condition were informed that their speech would be viewed by a group of students at the university that felt existing policies regarding cheating were sufficient. These students were therefore likely to be opposed in principle to tougher penalties for cheating.

Identification level. All subjects were told that because of some trouble experienced earlier in audio recording, it was necessary to signal them when their voices were not being recorded adequately so that they could make appropriate vocal adjustments. They were then shown a small red signal light attached to the video camera that purportedly would blink whenever their voice was too weak to be recorded. On seeing the blinking light, subjects were to raise their voice slightly and speak a little more deliberately. Subjects in a low-level identification condition were told that it was quite likely that the signal light would blink at various times during their speech and that they should therefore remain mindful of their voice throughout the speech. In fact, the light did blink 10 times at random intervals during the speech. Subjects in a high-level identification condition were told that it was unlikely that the signal light would blink during their speech and that they should concentrate instead on being persuasive in delivering the speech. The light did not blink in this condition.

On completion of the prepared speech (which took, on average, 7 min), subjects were administered a questionnaire assessing various aspects of their self-perceived performance. They then completed an action identification questionnaire that asked them to rate how well each of 30 identities described what they had done in delivering the prepared speech. Finally, subjects were thoroughly debriefed, assigned their extra credit, sworn to secrecy, and dismissed.

Dependent Measures

Speech dysfluency. Four undergraduates, blind to the hypotheses and subjects' condition assignment, viewed the 52 taped segments generated

by the subjects and counted the number of stammers, *ums*, and periods of silence lasting longer than 2 s in each. The raters worked in pairs, with each pair viewing half the tapes. Interrater agreement was quite high in both pairs, $r(26) = .89$ and $.92$. If the number of dysfluencies noted by each member of the pair differed by five or less, the average number was deemed the measure of dysfluency. In those few cases in which raters differed by more than five in their respective counts of dysfluencies, they viewed the tape again and recounted.

Self-perceived performance. On completion of the speech, subjects completed a 18-item questionnaire calling for self-assessments (on 7-point scales) of various aspects of their performance. Factor analysis (principal axis rotated to a varimax solution) of their responses yielded three interpretable factors with eigenvalues greater than 1.0. The factors (and their associated items and factor loadings) were Persuasion Failure ("do you think you changed many students' attitude toward cheating?", .82; "do you think the audience as a whole was impressed by your speech?", .64; "do you think you were successful in getting your point across to the audience?", .61; and "how convincing do you think you were?", .60; $\alpha = .82$); Anxiety (ratings of relaxation, tension, confidence, and self-consciousness while delivering the speech, -.86, .85, -.79, and .73, respectively; "do you think the audience perceived you as nervous or as calm?", .70; and "do you think you came across as enthusiastic about the point you were making?", -.49, $\alpha = .91$); and Performance Dissatisfaction ("how satisfied are you with the way you delivered the speech?", .81; "do you think you delivered the speech as well as you are capable of doing?", .74; "were you able to concentrate on the points you were making?", .70; $\alpha = .79$). A subject's score on each factor was the mean of his or her responses (reverse-scored when necessary) to the items loading on that factor.

It should be noted that the measures used in this study assess effectiveness with respect to speech production rather than audience impact. It can reasonably be argued, of course, that speech production characterized by dysfluencies, anxiety, dissatisfaction, and self-perceived ineptness is unlikely to be effective in terms of its impact on an audience, but this is by no means a foregone conclusion. The voluminous literature on persuasion suggests a myriad of factors that influence whether an audience is likely to be moved by a given message, and most of these are orthogonal to the quality of the message presentation, centering instead on characteristics of the communicator, the nature of the audience, and features of the setting in which the communication takes place (cf. McGuire, 1985). When attention is directed to the message itself, the focus is typically on matters of content (e.g., one-sided vs. two-sided arguments, message complexity, vividness) rather than presentation quality. Given the intuitively plausible connection between speech fluency and persuasiveness, its benign neglect is somewhat surprising and perhaps should be redressed in explicit accounts of the persuasion process. The optimality hypothesis is, of course, relevant only to the production side of communication, so questions of audience impact are beyond the scope of the present investigation.

Postspeech action identification. Subjects also completed a questionnaire consisting of 30 identities for giving the speech that had been generated in pilot research. Subjects rated each identity on a 7-point scale according to how well it described what they were doing in delivering the prepared speech. Factor analysis (principal axis, varimax rotation) of these ratings revealed five interpretable factors with eigenvalues greater than 1.0. The factors (and their associated items and factor loadings) were: Low Level (looked into a video camera, .83; looked back and forth from the speech to the camera, .80; monitored the way I spoke, .70; watched the red signal light, .62; nodded my head as I spoke, .39; $\alpha = .72$); Impressing the Audience (tried to impress a group of people, .77; attempted to look sincere, .75; $\alpha = .67$); Revealing What I Am Like (learned about my own attitudes, .79; revealed my personality, .68; thought about every word I said, .67; learned about my personality,

.61; communicated my attitudes, .61; listened to myself as I talked, .56; tried to change people's attitudes, .50; thought about my facial expressions, .47; $\alpha = .80$); Delivering a Speech (talked, .86; made a video recording, .84; delivered a speech on cheating, .73; did what was expected of me, .65; read from a prepared speech, .64; $\alpha = .82$); and Communicating (helped establish university policy, .75; smiled, .65; gestured with my arms and hands, .63; won over a group of people, .59; spoke out on an important issue, .57; talked to a group of like-minded people, .42; persuaded an audience, .33; $\alpha = .73$). Subjects' score on each factor was their mean endorsement of the identities loading on that factor (cf. Vallacher & Wegner, 1985).

Results

Manipulation Checks

Identification level. Subjects in this study completed the identification questionnaire after delivering the speech. Their responses thus indicate how the act appeared to them on completion of the speech rather than how it was identified in advance. To assess whether the identification-level manipulation was effective in establishing the desired identification tendencies at the outset, pilot subjects ($N = 25$) were informed of either the low-level or the high-level situation and asked to imagine that they delivered the prepared speech under such conditions. They then completed the giving-a-speech identification questionnaire (described earlier) and were assigned scores corresponding to their mean endorsement of the identities loading on each of the five factors associated with this questionnaire. As anticipated, the low-level factor was endorsed more strongly by subjects in the low-level as opposed to the high-level condition ($M = 3.86$ vs. 3.15), $t(22) = 2.62$, $p < .02$. Subjects in the low- and high-level conditions did not reliably differ in their endorsement of any of the other factors.

Audience difficulty. A different pilot sample ($N = 25$) was informed of subjects' task (i.e., delivering a prepared speech on classroom cheating to a video camera). They were also provided the same information as the subjects regarding the audience's likely attitude toward the speech; half received the easy-audience information, half the hard-audience information. They then were asked to complete (using 7-point rating scales) a three-item questionnaire assessing their perception of the audience's attitude: (a) "How do the members of the audience seem to feel about tougher penalties for classroom cheating?" (*very much in favor* to *very much opposed*), (b) "How likely is it that the members of the audience will agree with the position advocated in the speech?" (*very likely* to *very unlikely*), and (c) "How difficult will it be for the communicator to convince the members of the audience that tougher penalties for cheating are necessary?" (*not at all difficult* to *very difficult*). These items were highly intercorrelated, average $r(20) = .88$, and thus were averaged to create an index of persuasion difficulty. By this index, the easy audience was seen as easier to persuade ($M = 6.0$) than was the hard audience ($M = 1.67$), $t(23) = 12.08$, $p < .0001$.

Performance Effectiveness

A multivariate analysis of variance (MANOVA) performed on the four performance measures revealed a highly reliable Audi-

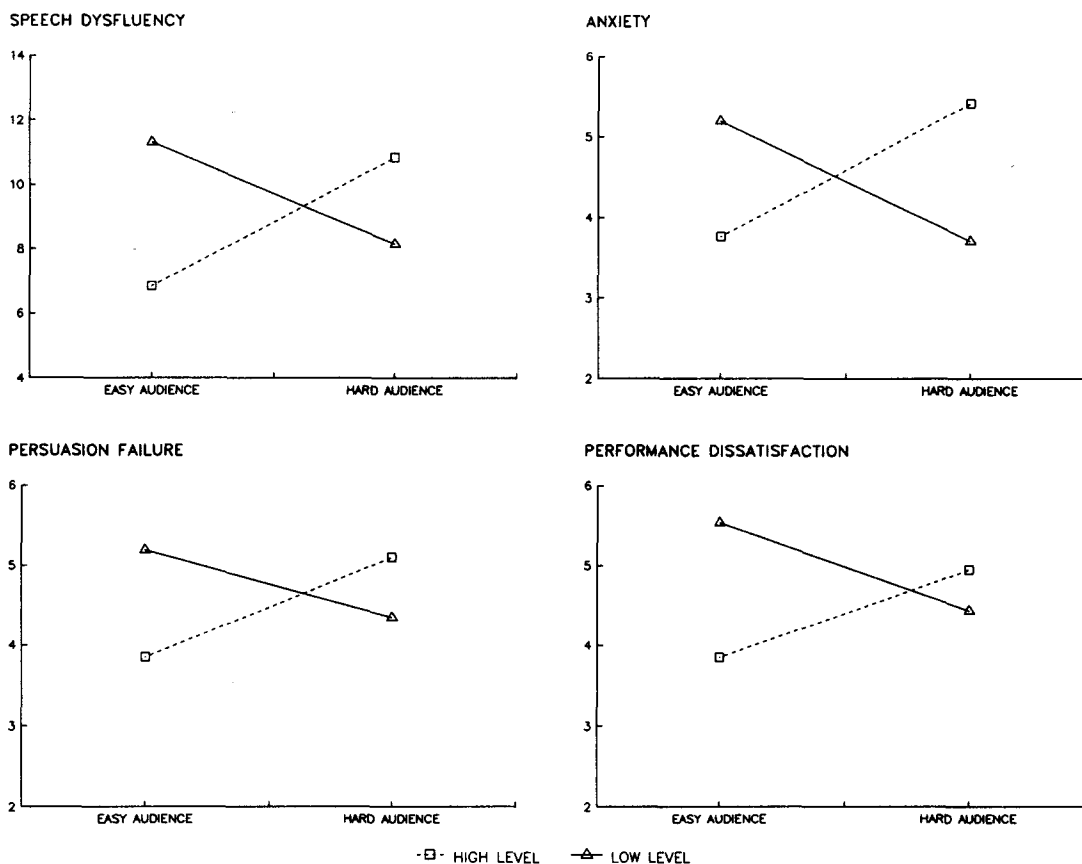


Figure 1. Communication effectiveness by audience difficulty (easy and hard) and identification level (high and low).

ence Difficulty \times Identification Level interaction, $F(4, 45) = 16.20$, $p < .0001$. Multivariate simple effects analyses performed to reveal the precise nature of this interaction provide strong support for the optimality hypothesis. Specifically, when the audience was ostensibly easy to persuade, performance was enhanced by high-level as compared with low-level identification, $F(4, 45) = 3.95$, $p < .008$, whereas when the audience was ostensibly hard to persuade, low-level identification proved advantageous, $F(4, 45) = 3.13$, $p < .02$.¹ Univariate analyses of variance (ANOVAs) meanwhile revealed a highly reliable Difficulty \times Identification Level interaction for each performance measure: speech dysfluency, $F(1, 48) = 6.23$, $p < .02$; self-reported anxiety, $F(1, 48) = 17.45$, $p < .001$; persuasion failure, $F(1, 48) = 14.43$, $p < .001$; and performance dissatisfaction, $F(1, 48) = 8.78$, $p < .005$. In each case, the pattern of means was similar to that revealed by the MANOVA (see Figure 1).

To assess the reliability of this pattern for each performance measure, we performed simple effects analyses that compared low-level versus high-level identification within each audience difficulty condition. For speech dysfluency, results demonstrated that in the easy-audience condition, high-level subjects made fewer dysfluencies ($M = 6.85$) than did low-level subjects ($M = 11.31$), $F(1, 48) = 4.84$, $p < .03$; in the hard-audience

condition, low-level subjects made fewer dysfluencies ($M = 8.15$) than did high-level subjects ($M = 10.85$), but not reliably so, $F(1, 48) = 1.76$, $p < .19$. For the interaction involving self-reported anxiety, both simple effects proved reliable. Thus, high-level subjects reported greater anxiety than did low-level subjects when facing the hard audience ($M = 5.42$ vs. 3.71), $F(1, 48) = 10.27$, $p < .002$, whereas low-level subjects reported greater anxiety than did high-level subjects when facing the easy audience ($M = 5.20$ vs. 3.76), $F(1, 48) = 7.32$, $p < .009$. We observed the same pattern of simple effects for the interaction involving persuasion failure. Specifically, when the audience was easy to persuade, self-reported failure was greater among low-level subjects ($M = 5.19$) than among high-level subjects ($M = 3.85$), $F(1, 48) = 11.91$, $p < .001$; when the audience was hard to persuade, there was a marginally reliable tendency for high-level subjects to report greater failure ($M = 5.10$ vs. 4.35), $F(1, 48) = 3.70$, $p < .06$. Finally, the simple effects analyses for

¹ We also performed multivariate simple effects analyses with the data blocked on identification level. The results of these analyses indicate that subjects in the high-level condition performed more effectively with the easy than with the hard audience, $F(4, 45) = 3.73$, $p < .01$, whereas subjects in the low-level condition tended to perform more effectively with the hard audience, $F(4, 45) = 2.43$, $p < .06$.

Table 1
*Endorsement of Identification Factors by
 Audience Difficulty and Identification Level*

Identification factor & audience difficulty	Identification level	
	High	Low
Revealing what I am like		
Easy	4.21 _a	3.33 _b
Hard	3.07 _b	3.58 _{ab}
Impressing the audience		
Easy	4.66 _a	3.19 _b
Hard	3.77 _{ab}	4.77 _a

Note. Means not sharing a common subscript differ at $p < .05$.

performance satisfaction revealed that low-level identification promoted dissatisfaction relative to high-level identification when the audience was easy to persuade ($M = 5.54$ vs. 3.85), $F(1, 48) = 10.37$, $p < .002$; the high- and low-level groups did not reliably differ when the audience was hard to persuade ($M = 4.95$ and 4.44), $F(1, 48) = .95$, ns .²

Postspeech Action Identification

The identification of one's action typically changes as a result of performing the action (cf. Vallacher & Wegner, 1985). To gauge how subjects in this study viewed their action on completion of the speech, we performed ANOVAS on the five action identification factors. Results revealed reliable interactions for *revealing what I am like*, $F(1, 48) = 5.12$, $p < .03$, and *impressing the audience*, $F(1, 48) = 8.25$, $p < .006$. In both cases, endorsement was strongest in the high-level–easy audience and low-level–hard audience conditions (see Table 1). Having successfully delivered the speech, subjects apparently were especially sensitive to the personal consequences of the act, identifying what they had done as revealing what they were like, as impressing the audience, or both.

Results also revealed a reliable main effect for identification level on the low-level factor, $F(1, 48) = 7.81$, $p < .007$. Low-level identities were endorsed more strongly in the low-level than in the high-level condition ($M = 4.61$ vs. 3.78). So although two high-level meanings associated with *giving a speech* emerged by the end of the speech under the same combinations of factors that promoted effective speech performance, the manipulation of identification level apparently was sufficiently strong to keep subjects differentially mindful of the low-level aspects of what they were doing throughout the speech delivery.

Discussion

The results of this experiment provide support for the optimality hypothesis with respect to communication effectiveness. By two sets of criteria—subjects' self-reported effectiveness and their objective degree of speech dysfluency—the data reveal that the act of delivering a speech can be facilitated or impaired by varying the personal difficulty of the act and subjects' prepotent level of identification for the act. When the act was difficult

for subjects, they tended to make fewer speech errors, experience less anxiety, estimate their persuasion success to be greater, and be more satisfied with their performance if they were induced to think about the details as opposed to the significance of their speech performance. However, when the act was relatively easy, heightened prepotence of the act's lower-level as opposed to higher-level identities served to impair rather than facilitate performance by these same criteria.

The recognition that performance quality depends on the interaction of task difficulty and some feature of the performer's mental set is not unique to the optimality hypothesis. Indeed, the distinction between relatively simple or overlearned tasks and relatively difficult or unfamiliar tasks provides the basis for two fundamental empirical generalizations concerning human performance. Research has shown, first of all, that the performance of a complex or unfamiliar action is adversely affected by factors that charge the action with significance. Performance on complex tasks tends to suffer, for example, when salient rewards are made contingent on the task (e.g., Baumeister, 1984; McGraw, 1978; Schwartz, 1982), when the task is performed in the presence of an evaluative audience (e.g., Cottrell, 1972; Innes & Young, 1975; Paulus, Shannon, Wilson, & Boone, 1972), and when the task is performed under conditions emphasizing competition (e.g., Baumeister, 1984; Sanders, Baron, & Moore, 1978; Seta, Paulus, & Risner, 1977). Because each of these factors imparts high-level meaning to the task (i.e., earning a reward, impressing an audience, demonstrating one's relative skill), it is not surprising in light of optimality considerations that they impair performance when the task is difficult or unfamiliar and hence best maintained with respect to lower-level identities.

The second empirical generalization concerns relatively simple or familiar action, and it too can be described by the optimality hypothesis. In particular, research has shown that performance can be disrupted when attention is drawn to the overlearned details of an action (Kimble & Perlmuter, 1970; Langer

² We also performed simple effects analyses with the data blocked on identification level. For speech dysfluency, results revealed that subjects in the high-level condition made fewer dysfluencies if they spoke to the easy as opposed to the hard audience ($M = 6.85$ vs. 10.85), $F(1, 48) = 3.89$, $p < .05$, whereas subjects in the low-level condition tended to make fewer dysfluencies if they spoke to the hard as opposed to the easy audience ($M = 8.15$ vs. 11.31), $F(1, 48) = 2.42$, $p < .13$. Results for self-reported anxiety indicate that high-level subjects experienced greater anxiety when facing the hard as opposed to the easy audience ($M = 5.42$ vs. 3.76), $F(1, 48) = 9.67$, $p < .003$, whereas low-level subjects experienced greater anxiety when facing the easy audience ($M = 5.20$ vs. 3.71), $F(1, 48) = 7.84$, $p < .007$. For persuasion failure, results show that in the high-level condition, subjects reported greater failure if they spoke to a hard as opposed to an easy audience ($M = 5.10$ vs. 3.85), $F(1, 48) = 10.27$, $p < .002$, whereas in the low-level condition, greater failure was reported by subjects who spoke to the easy audience ($M = 5.19$ vs. 4.35), $F(1, 48) = 4.71$, $p < .04$. For performance dissatisfaction, results revealed that low-level subjects were more dissatisfied with their performance when they spoke to the easy as opposed to the hard audience ($M = 5.54$ vs. 4.44), $F(1, 48) = 4.40$, $p < .04$, but that high-level subjects were more dissatisfied when they spoke to the hard rather than the easy audience ($M = 4.95$ vs. 3.85), $F(1, 48) = 4.41$, $p < .04$.

& Imber, 1979; Martens & Landers, 1972). The more overlearned the action is, the greater the performance impairment engendered by a conscious concern with how to perform the act (Kimble & Perlmuter, 1970).^{11c} In action identification terms, as an action becomes familiar and subjectively easy, the prepotence of relatively low-level as opposed to higher-level identities is nonoptimal and disruptive of smooth performance.

The data from this study are thus consistent with broad generalizations concerning performance effectiveness, and the theoretical framework advanced may prove useful in providing conceptual integration for such work. At the same time, because this study represents the first direct test of optimality considerations, the specific manipulations and procedures used are necessarily open to alternative interpretations. Particularly notable in this regard is the use of a disruptive stimulus to induce low-level identification. Disruptive stimuli have of course been used to induce low-level identification in other domains of action identification research (e.g., Wegner et al., 1984; cf. Vallacher & Wegner, 1985), but because of the ready intuitive association between disruption and performance, the use of such manipulations in the present context warrants some scrutiny. Indeed, the stimulus used in this study lends itself to at least three common interpretations, each associated with a different conceptual framework: distraction, misattribution of arousal, and self-handicapping. How does each fare in predicting the results?

Suppose that the signal light manipulation used in this study was essentially a distraction that interfered with attention to the task at hand. One would then expect to find impaired performance for all subjects, but especially for those in the hard task condition in which attention to the task is most vital. This is, of course, precisely opposite the pattern of results obtained: Whereas the light impaired performance in the easy conditions, it facilitated performance in the hard conditions. From another perspective, a distracting stimulus could be seen as benefiting performance on difficult tasks to the extent that it draws the person's attention away from a concern with possible failure. Such redirection of attention from negative implications might defuse the person's anxiety, enabling him or her to perform up to his or her capacity. In a sense, this interpretation of distraction captures a portion of the optimality argument; namely, the inappropriateness of high-level identification (e.g., a concern with success or failure) for performance on a difficult task. What it fails to capture, however, is the heightened prepotence of lower-level aspects of the task and the appropriateness of that mental set for performance on a difficult task. The present data indicate that the signal light did in fact render lower-level identities prepotent and that this orientation to the task facilitated performance in line with optimality considerations.

Research concerned with the misattribution of arousal (cf. Schachter, 1964)^{11c} provides a different perspective on the role played by a potentially disruptive stimulus in performance. In misattribution terms, the key to effective versus ineffective performance is the person's label for whatever physiological arousal he or she is experiencing during the performance. Typically in such research, subjects about to engage in an anxiety-producing task (e.g., receiving electric shocks) are told that some emotionally neutral factor (e.g., a pill, subliminal noise)

is likely to produce arousal symptoms. Presumably, whatever anxiety subjects are experiencing is relabeled as emotionally neutral arousal in response to the suggested factor. Such amelioration of anxiety, in turn, should enable subjects to perform effectively on the task at hand. With respect to the present study, this reasoning suggests that drawing subjects' attention to the signal light might have provided them with a benign interpretation of their anxiety about delivering the speech and thereby enabled them to communicate in a nonanxious, effective manner. Note that this reasoning predicts an enhancement of performance in both the easy- and hard-audience conditions, although it could be argued that the effect should be greater in the hard-audience condition because the potential for anxiety is greater in that situation.

Although the misattribution perspective is compelling, its relevance to the pattern of data obtained in this study is questionable. As long as the task was subjectively difficult, the signal light did in fact promote less anxious and more effective speech delivery: a finding consistent with misattribution theory. However, when the task was subjectively easy, the signal light served to augment anxiety and impair delivery: a finding at odds with common theoretical accounts of misattribution (cf. Schachter, 1964). Ross and Olson (1981) suggested one theoretical extension that might account for the anomalous pattern of effects observed here. If the signal light could be viewed as a perceived source of anxiety, it might promote counteractive expectancies in the easy-audience condition. There is evidence that standard placebo effects are obtained with counteractive expectancies (Ross & Olson, 1981), so perhaps subjects were especially sensitive to the anxiety-inducing properties of the light in this situation. This seems unlikely, however, in view of the typical dependency of the misattribution effect on explicit inductions: direct instructions to subjects that a stimulus is a potential source of arousal (Reisenzein, 1983). Subjects here, however, were told only that the signal light was intended to keep them mindful of the mechanics of their speech delivery, and the data show that this manipulation of mental content was successful.

Finally, it is worth noting that recent reviews of the misattribution literature have cast doubt on the robustness of misattribution effects (Reisenzein, 1983; Ross & Olson, 1981). It appears, for example, that subjects provided the sorts of misattribution opportunities alluded to rarely report the appropriate attributions for their arousal, and that behavioral evidence for misattribution often proves elusive as well (see, however, Olson, 1988; Olson & Ross, in press). Particularly noteworthy in this regard is research on speech anxiety. Although reading a speech in front of a camera has indeed been shown to induce physiological arousal (Borkovec & O'Brien, 1977; Singerman, Borkovec, & Baron, 1976), research relevant to the amelioration of speech anxiety through misattribution manipulations has failed to support misattribution predictions (Cotton, Baron, & Borkovec, 1980; Singerman et al., 1976; Slivken & Buss, 1984).

This is not to suggest, of course, that misattribution of arousal does not occur or that this process is irrelevant to issues of anxiety and performance. Our point is simply that mental representations of what one is doing always accompany action, whereas heightened physiological arousal and misinterpretation of its source become relevant to action only under a rela-

tively restricted set of conditions. Optimality considerations, then, are likely to capture the basic dynamics associated with performance effectiveness whether arousal is sufficiently high to make its interpretation a salient issue or not. With this in mind, performance effects consistent with misattribution reasoning may at times represent a special case of identification optimality, namely, heightened low-level prepotence on a novel, complex, or otherwise personally difficult act. Performance effects inconsistent with misattribution reasoning, meanwhile, may reflect a special case of nonoptimality, namely, heightened low-level prepotence on a relatively familiar, simple, or otherwise personally easy act. In short, if misattribution effects appear and disappear under conditions that cannot be predicted from misattribution theory, it may be because the mental representation of one's action is more fundamental to action than is the mental representation of one's arousal.

Self-handicapping theory (Jones & Berglas, 1978) represents another formulation relevant to speech anxiety, and it too is open to an optimality interpretation. The self-handicapping perspective suggests that concerns about the effectiveness of one's communication should be decreased by any factor that is viewed by others as an impediment to successful performance (see, e.g., Leary, 1986; Schlenker & Leary, 1982). In essence, the impediment provides a plausible excuse for poor performance and thus reduces the person's performance anxiety, which in turn allows the person to perform up to his or her capability. Like misattribution theory, then, self-handicapping theory suggests that stimuli such as the signal light in the present study should have a largely beneficial effect on various criteria of speech performance.³ Self-handicapping theory goes on to suggest that the benefit of potential impediments should be more pronounced among people who have the greatest concern over performing effectively, that is, people for whom the task is considered personally difficult. This reasoning thus is consistent with the optimality hypothesis with respect to difficult tasks. Unlike the optimality hypothesis, however, and in contrast to the data obtained in this study, self-handicapping theory does not posit any effect—either beneficial or disruptive—among people for whom the task is relatively easy (i.e., among people who are confident of success). The self-handicapping formulation thus shares with misattribution theory an inability to account for the increased anxiety and impaired performance of subjects in this study who monitored the signal light while delivering a prepared speech to an ostensible easy-to-persuade audience.

Interestingly, a recent experiment examining the relevance of self-handicapping to speech anxiety (Leary, 1986) generated some anomalous data that are consistent with the optimality hypothesis in the case of relatively easy tasks. Subjects who were either high or low in social anxiety were asked to interact in the presence of a noise that ostensibly would or would not interfere with their ability to carry on the interaction. Contrary to prediction, Leary (1986) found a tendency for low-anxiety subjects to describe themselves less positively after the interaction in the distracting noise condition than in the nondistracting noise condition. High-anxiety subjects, meanwhile, showed the opposite (and predicted) pattern, describing themselves more positively after the interaction in the distracting noise condition.

Although these data are hard to square with self-handicapping theory, they are in accord with the optimality hypothesis if one reasonably assumes that social anxiety is a measure of the personal difficulty associated with social interactions. Thus, the distracting noise may have induced a relatively low-level identification set among all subjects, thereby enhancing the perceived self-presentation success among those subjects for whom the task was difficult (i.e., the high-anxiety subjects) and undermining the perceived self-presentation success among those for whom the task was relatively easy (i.e., the low-anxiety subjects).

We wish to emphasize that the purported mediator of self-handicapping effects has much in common with the mechanism said to underlie optimality effects. In both cases, a potential disruption is said to reduce people's concern with the higher-level meanings of their behavior, and this change in mental set holds potential for maximizing their performance. Self-handicapping theory's range of application, however, is confined to a specific set of higher-level act meaning—namely, those related to evaluation apprehension—whereas the optimality hypothesis applies to virtually any superordinate effect or implication of what one is doing (e.g., impressing others, earning a reward, conveying one's values). Another crucial difference concerns the mental set that is said to be instilled as a result of the potentially disruptive stimulus. Self-handicapping theory says simply that disruptive stimuli provide an excuse for anticipated poor performance and thus allow the person to relax during his or her performance. The optimality hypothesis says that the disruptive stimulus renders the mechanics of the act salient at the expense of the act's higher-level identities. Our data demonstrate that lower-level mechanics do in fact become prepotent in the presence of a disruptive stimulus, and that this mental set may facilitate performance when a concern with detail is appropriate (i.e., when the task is personally difficult) but hinder performance when a concern with detail is inappropriate (when the task is personally easy).

Conclusions

Action identification theory describes a system of mind and action in which people adjust their mental representations of what they are doing to maximize their performance effectiveness. The processes at work to achieve workable yet comprehensive understanding, however, do not always operate in harmony. Because context provides powerful cues to an action's identity, people may sometimes be led to identify what they are doing in

³ It should be noted that self-handicapping theory is rooted in self-presentation theoretical assumptions, and hence its predictions regarding performance enhancement require that, from the performer's point of view, other people recognize the potential for disruption in the ostensible handicapping factor. Strictly speaking, then, the data in the present study are not open to a self-handicapping interpretation, as the red signal light was not referred to at any time as a potential impediment to effective speech delivery. Nonetheless, self-handicapping has been advanced as a way of understanding how stimuli similar to the red signal light used in this study may affect speech anxiety (Leary, 1986; Schlenker & Leary, 1982), and thus warrants attention.

a way that is too high or too low in level for effective performance. Instances of nonoptimality involving identity fragmentation (the identification of a personally easy action in low-level terms) no doubt occur from time to time, but the more common case of nonoptimality probably involves identity inflation (the identification of a personally difficult action in high-level terms) for the simple reason that contextual cues are typically stacked in favor of causal effects, consequences, and evaluative implications of the performer's action (Vallacher & Wegner, 1985). With respect to delivering a speech, this means that people most often experience anxiety, self-consciousness, and speech dysfluencies when they attach importance to impressing the audience and are simultaneously aware of the difficulty of doing so.

The results of the present research suggest that identity inflation in a speech delivery context can be reduced in one of two ways: changing the personal difficulty of the act or changing the performer's prepotent identity for the act. Of these, personal difficulty may be the least open to influence. The perceived skepticism versus receptivity of the audience was under experimental control in this study, of course, but in most real-world speech contexts the speaker has face-to-face contact with the audience, making it next to impossible to convince him or her of a receptive attitude when none exists. Another approach to influencing the perceived difficulty of delivering a speech is to provide the speaker with public speaking skill. This is ultimately the preferred strategy, as it would generalize to all other speech contexts, but it is also the least efficient because of the time and effort involved in skill development.

The more manageable and efficient way of reducing identity inflation and thereby establishing optimality on the part of a speaker is to change his or her representation of the act. Particularly if the speaker is relatively unskilled in speech delivery, calling attention to the details of the act should enhance his or her delivery if the audience is perceived as antagonistic toward the content of the speech. Getting a person to concentrate on how to talk as opposed to the self-evaluative implications of talking, however, can itself prove to be a difficult task. Because the cues to high-level meaning are typically quite salient in public speaking contexts, it may require techniques of the kind used in this study to establish low-level prepotence on the part of the speaker. The results of the present research indicate a quite remarkable intervention: Disrupting novice speakers may be the most efficient way of reducing their anxiety and maximizing their effectiveness.

References

- Anscombe, G. E. M. (1957). *Intention*. Oxford, England: Blackwell.
- Baumeister, R. F. (1984). Choking under pressure: Self-consciousness and paradoxical effects of incentives on skillful performance. *Journal of Personality and Social Psychology*, 46, 610-620.
- Borkovec, T. D., & O'Brien, G. T. (1977). Relation of autonomic perception and its manipulation to the maintenance and reduction of fear. *Journal of Abnormal Psychology*, 86, 163-171.
- Cotton, J. L., Baron, R. S., & Borkovec, T. D. (1980). Caffeine ingestion, misattribution therapy, and speech anxiety. *Journal of Research in Personality*, 14, 196-206.
- Cottrell, N. B. (1972). Social facilitation. In C. G. McClintock (Ed.), *Experimental social psychology* (pp. 185-236). New York: Holt, Rinehart & Winston.
- Danto, A. (1963). What we can do. *Journal of Philosophy*, 40, 435-445.
- Goldman, A. I. (1970). *A theory of human action*. Princeton, NJ: Princeton University Press.
- Innes, J. M., & Young, R. R. (1975). The effect of presence of an audience, evaluation apprehension, and objective self-awareness on learning. *Journal of Experimental Social Psychology*, 11, 35-42.
- Jones, E. E., & Berglas, S. (1978). Control of attributions about the self through self-handicapping strategies: The appeal of alcohol and the role of underachievement. *Personality and Social Psychology Bulletin*, 4, 200-206.
- Kimble, G. A., & Perlmuter, L. C. (1970). The problem of volition. *Psychological Review*, 77, 361-384.
- Langer, E. J., & Imber, L. G. (1979). When practice makes imperfect: Debilitating effects of overlearning. *Journal of Personality and Social Psychology*, 37, 2014-2024.
- Leary, M. R. (1986). The impact of interactional impediments on social anxiety and self-presentation. *Journal of Experimental Social Psychology*, 22, 122-135.
- Martens, R., & Landers, D. M. (1972). Evaluation potential as a determinant of coercion effects. *Journal of Experimental Social Psychology*, 8, 347-359.
- McGraw, K. O. (1978). The detrimental effects of reward upon performance: A literature review and a prediction model. In M. R. Lepper & D. Greene (Eds.), *The hidden costs of reward* (pp. 33-60). Hillsdale, NJ: Erlbaum.
- McGuire, W. J. (1985). The nature of attitudes and attitude change. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (Vol. 2, pp. 223-346). Reading, MA: Addison-Wesley.
- Olson, J. M. (1988). Misattribution, preparatory information, and speech anxiety. *Journal of Personality and Social Psychology*, 54, 758-767.
- Olson, J. M., & Ross, M. (in press). False feedback about placebo effectiveness: Consequences for the misattribution of speech anxiety. *Journal of Experimental Social Psychology*.
- Paulus, P. B., Shannon, V. C., Wilson, D. L., & Boone, T. D. (1972). The effects of operator presence on gymnastics performance in a field situation. *Psychonomic Science*, 29, 88-90.
- Reisenzein, R. (1983). The Schachter theory of emotion: Two decades later. *Psychological Bulletin*, 94, 239-264.
- Ross, M., & Olson, J. M. (1981). An expectancy-attribution model of the effects of placebos. *Psychological Review*, 88, 408-437.
- Sanders, G. S., Baron, R. S., & Moore, D. L. (1978). Distraction and social comparison as mediators of social facilitation effects. *Journal of Experimental Social Psychology*, 14, 291-303.
- Schachter, S. (1964). The interaction of cognitive and physiological determinants of emotional state. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 1, pp. 48-81). New York: Academic Press.
- Schlenker, B. R., & Leary, M. R. (1982). Social anxiety and self-presentation: A conceptualization and model. *Psychological Bulletin*, 92, 641-669.
- Schwartz, B. (1982). Reinforcement-induced behavioral stereotypy: How not to teach people to discover rules. *Journal of Experimental Psychology: General*, 111, 23-59.
- Seta, J. J., Paulus, P. B., & Risner, H. T. (1977). The effects of group composition and evaluation on task performance. *Bulletin of the Psychonomic Society*, 9, 115-117.
- Singerman, K. J., Borkovec, T. D., & Baron, R. S. (1976). Failure of a "misattribution therapy" manipulation with a clinically relevant target behavior. *Behavior Therapy*, 7, 306-316.

- Slivken, K. E., & Buss, A. H. (1984). Misattribution and speech anxiety. *Journal of Personality and Social Psychology*, 47, 396-402.
- Vallacher, R. R., & Wegner, D. M. (1985). *A theory of action identification*. Hillsdale, NJ: Erlbaum.
- Vallacher, R. R., & Wegner, D. M. (1987). What do people think they're doing? Action identification and human behavior. *Psychological Review*, 94, 3-15.
- Vallacher, R. R., Wegner, D. M., & Frederick, J. (1987). The presentation of self through action identification. *Social Cognition*, 5, 301-322.
- Vallacher, R. R., Wegner, D. M., Park, C., & Ely, R. (1982). [Identifications of the act of taking an exam]. Unpublished raw data.
- Wegner, D. M., & Vallacher, R. R. (1986). Action identification. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition* (pp. 550-582). New York: Guilford.
- Wegner, D. M., & Vallacher, R. R. (1987). The trouble with action. *Social Cognition*, 5, 179-190.
- Wegner, D. M., Vallacher, R. R., Kierstedt, G. W., & Dizadji, D. (1986). Action identification in the emergence of social behavior. *Social Cognition*, 4, 18-38.
- Wegner, D. M., Vallacher, R. R., Macomber, G., Wood, R., & Arps, K. (1984). The emergence of action. *Journal of Personality and Social Psychology*, 46, 269-279.
- Wittgenstein, L. (1953). *Philosophical investigations*. Oxford, England: Blackwell.

Received January 11, 1988

Revision received August 31, 1988

Accepted September 7, 1988 ■