Detecting the Deceit of the Motivated Liar

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It was hypothesized that senders who are highly motivated to lie successfully (compared to those who are less highly motivated) would be more successful at controlling the verbal aspects of their communications but less successful at controlling the nonverbal aspects. In Study 1, 32 senders, randomly assigned to high versus low motivational conditions, answered four questions in front of six peers. They answered two of the questions truthfully and two deceptively. They were given time to plan in advance one of their truthful responses and one of their deceptive responses; the other responses were not planned. In Study 2, judges rated the deceptiveness, spontaneity, and tenseness of the Study 1 messages in one of four conditions: verbal only, visual only, audio only (verbal plus vocal), and audiovisual. Consistent with the hypothesis, the lies of the highly motivated senders (compared to those of the less highly motivated senders) were less readily detected when only verbal cues were available but more readily detected in the conditions that included nonverbal cues. Lies that were planned were no more or less readily detected than lies that were not planned. However, planned responses—whether truthful or deceptive—were perceived as more deceptive, more tense, and less spontaneous by the judges in both studies. Theoretical and applied implications are discussed.

In the past decade, research on people's ability to deceive has proliferated. One important criticism of this research is that the participants are often not highly motivated to deceive successfully (Knapp & Comadena, 1979; Kraut, 1980; Miller, in press; Miller & Burgoon, 1982). In defense of the low levels of motivation and involvement that often characterize laboratory lies, it can be argued that many—perhaps even most—of the lies perpetrated in everyday life (e.g., insincere compliments, dissimulations of interest in soporific conversations) are similarly uninvolving and unarousing (DePaulo, Zuckerman, & Rosenthal, 1980a). Still, there are important instances in which the stakes for success at deception are quite high (e.g., in responding to a spouse's accusations of infidelity or in testifying in a murder trial). The question, then, is whether the dynamics of deception are similar under conditions of high versus low motivation to deceive. Specifically, are highly motivated liars more or less successful at fooling others? Do highly motivated liars betray themselves through different channels than less highly motivated liars? These are two of the questions addressed by the present research.

It could be hypothesized that highly motivated senders will be more successful at deceiving than less highly motivated senders, since they might be more careful in choosing and controlling their verbal and nonverbal self-presentations. Alternatively, it might be hypothesized that high levels of motivation are accompanied by high levels of arousal that might be disruptive to successful performance. DePaulo, Zuckerman, and Rosenthal (1980b) proposed that highly motivated senders will try harder to control their self-presentations, but they will be successful only in those channels that are most amenable to willful control. According to Ekman and Friesen (1969; see also Ekman, 1981), the most controllable channels are characterized by a greater sending capacity and a higher degree of internal feedback. Sending capacity is defined by the salience of the channel, the number of discriminable messages that can be sent through that channel, and the rapidity with which those messages can be sent. Internal feedback refers

to the degree to which senders are aware of and able to reenact messages they have sent in a given channel. It follows from this formulation that verbal messages should be more readily and effectively controlled than nonverbal messages. On the basis of the DePaulo et al. (1980b) hypothesis and the Ekman and Friesen (1969) model, we predicted that highly motivated senders would be more successful than less highly motivated senders at deceiving others through the verbal channel but less successful through nonverbal channels.

The effects of motivation on the dynamics of deception have been investigated by Krauss and his colleagues (Krauss, 1981; Krauss, Geller, & Olson, Note 1). In the first phase of this research, involving an interview-type format, interviewers lied or told the truth in response to various questions. Approximately one half of these subjects (the highly motivated or "aroused" subjects) were told that skill at deception was related to intellectual and creative ability and career success. They were also told that videotapes of their messages would be evaluated by a team of psychiatrists. These aroused senders were neither more nor less successful at fooling their interviewers than were the "nonaroused" senders who were not given the bogus information. In Phase 2, videotapes of the male interviewers from Phase 1 were shown to judges in one of three conditions: audio only (verbal plus vocal cues), visual only (head and shoulders), and audiovisual. Across all three of these conditions, the highly motivated senders were *less* successful at deceiving others than were the less highly motivated senders.

According to the DePaulo et al. (1980b) hypothesis, the aroused senders in the Krauss et al. (Note 1) research were betrayed by their nonverbal cues. Suggestive evidence in support of this hypothesis comes from a further study in the Krauss program, in which the average fundamental frequency of the senders' voices was measured (Streeter, Krauss, Geller, Olson, & Apple, 1977). Across both levels of motivation, fundamental frequency was higher when senders were lying than when they were telling the truth. Furthermore, this difference was even more pronounced for the highly motivated subjects. It seems, then, that the highly motivated senders were less able to control successfully at least one important nonverbal

cue. Our hypothesis is that in any condition in which nonverbal cues are available, the lies of highly motivated senders will be more readily detected than the lies of less highly motivated senders. However, if only verbal cues are made available, then the lies of highly motivated senders will be less readily detected. To test this hypothesis, we added a verbal-only condition (typed transcript) to the three conditions used by Krauss and his colleagues.

Laboratory lies are often characterized not only by low levels of motivation but also by low levels of planning. In some paradigms, subjects do not know the content of the question, nor even whether they are to lie or to tell the truth, until the moment when the question is asked. These conditions occasionally occur outside of the laboratory, too—for example, when an unanticipated question arises in a conversation or even during a trial. In many other instances, however, senders do have an opportunity to plan and rehearse responses to potentially incriminating inquiries. From a theoretical standpoint, the important question is whether the dynamics of deception differ for planned as compared to unplanned communications. Again, it can be hypothesized that planning will be most effective in facilitating deceptive success in channels that are most readily controlled by the senders—for example, in the verbal channel more so than in nonverbal channels. To study the effects of planning on success at deception, we showed senders two of the four questions they would be asked prior to the videotaping. They were also told in advance whether they were to lie or to tell the truth in response to each question. All senders were instructed to answer truthfully one of the planned and one of the unplanned questions and to answer the others deceptively.

Method

Overview

In Study 1, 16 male and 16 female undergraduates each answered four questions in front of a panel of six peers. Senders lied in response to two of the questions and told the truth in response to the other two. They were allowed to plan in advance one of their truthful responses and one of their deceptive responses. One half of the male senders and one half of the female senders were given instructions designed to motivate them to lie more effectively. Each panel member rated each response on scales of decep-

tiveness, planning, and tension. In Study 2, judges rated the Study 1 messages (on the same three scales) in one of four conditions: visual only, verbal only, audio (verbal plus vocal), and audiovisual.

Subjects

Each Study 1 subject participated in one of four small group sessions. Approximately 7 males and 7 females were recruited for each session. In each session, 3 of the males and 3 of the females were randomly assigned to be panel members or judges, while the other subjects served as senders. One half of the male senders and one half of the females, selected at random, were assigned to the high-motivation condition, whereas the others were assigned to the low-motivation condition. Thus, Study 1 included a total of 24 judges (four sessions × six judges/session) and 32 senders (16 males and 16 females).

In Study 2, judges rated the messages of the Study 1 senders. Study 2 was also run in small groups. Eight male and 8 female judges were recruited for each session. Two of the males and two of the females, randomly selected, were assigned to each of four rating conditions (visual only, verbal only, audio, and audiovisual), which were run simultaneously. Each sender was rated by two sets of judges (a total of four males and four females in each of the four rating conditions). To prevent problems of rater fatigue, each judge rated only 16 of the 32 senders (equally balanced by sex and level of motivation). Thus, Study 2 included a total of 64 judges (two sets of senders to be judged by four rating conditions by eight judges/condition).

All subjects in both studies were undergraduates participating for course credit.

Procedure

Study 1. All subjects assigned to the role of sender were given a 1-page information sheet describing the study. This page contained the motivation manipulation. In the high-motivation condition, senders were told that the ability to lie successfully is extremely important. They were given several examples of the importance of deceiving successfully and were informed of research findings demonstrating a link between skill at deceiving and success in various careers. The study was described as one in which they would be "on trial" in front of a panel of of their peers who would be carefully scrutinizing their behavior and evaluating their truthfulness. It was also added that videotapes and audiotapes would be made and replayed for new groups of judges, so that their behavior could be studied even more carefully in the future.

In the low-motivation condition, the study was described as a game in which some of the participants would lie and tell the truth while the others would try to guess when the senders were lying and when they were telling the truth. It was added that "in real life, too, lying is often like a little game." Examples of innocuous lies were given. It was explained that videotapes would be made just in case they might be of use at some later date, but that at the present, the expectation was that they would not be used again. (At the end of Study 1, participants were debriefed. All senders agreed to allow their videotapes to be used in Study 2.)

The instructions to all senders also informed them that they would be allowed to see in advance one of the questions that they were to answer truthfully and one that they were to answer deceptively. Two minutes before they were to be interviewed, they were given these two questions and allowed to plan their answers to them. The planning time of approximately 1 minute per response was selected on the basis of the results of another study in which senders were given unlimited time to prepare their messages (DePaulo, Finkelstein, Rosenthal, & Eisenstat, Note 2). In that study the mean planning time was 21 sec, and only 4 of 39 senders took longer than a minute to plan any of their four responses.

The two planned questions were printed on a cue card that subjects took with them to the interview. On the cue card were the numbers 1, 2, 3, and 4, and spaces for the questions corresponding to those numbers. The two questions that subjects were allowed to plan in advance were printed in the appropriate spaces. The other two spaces were left blank. Also next to each question number were the instructions to either tell the truth or lie in response to that particular question.

Although the four questions were the same for all senders, the particular questions that subjects were to answer truthfully versus deceptively, and those that were planned versus unplanned, were counterbalanced. The four questions asked senders to describe (a) their opinion on a controversial aspect of the university's honor system, (b) their attitudes toward the fraternity and sorority system, (c) their relationship with their roommate, and (d) their feelings about what it would be like to be a politician in today's society.

One at a time, senders were brought into a room and seated in a chair facing their six peers, who were seated in a row a few feet away. Directly behind the row of judges was an experimenter who was videotaping the sender. The experimenter, who was blind to the subjects' condition, asked each question, then allowed 30 sec for each response. (Senders were not cut off if 30 sec elapsed in the middle of a sentence.)

The judges were told that the senders might be lying or telling the truth any number of times in response to the four questions. Judges were not told about the motivation or planning manipulations. The judges rated each response on 7-point scales of deceptiveness (very honest . . . very deceptive), planning (not planned in advance; very spontaneous . . . very carefully planned; not spontaneous), and tension (very relaxed . . . very tense).

Study 2. Recordings were made of all four of the messages of each of the 32 senders from Study 1. All messages were recorded in their entirety (i.e., beginning immediately after the experimenter's question and ending after the sender's last word). The 64 Study 2 judges rated the recordings in one of four conditions: (a) visual only—judges saw only the head and chest of the senders, with no accompanying verbal or vocal cues; (b) verbal-only—judges rated a verbatim typed transcript of the senders' messages; (c) audio—judges heard an audiotape of the messages (verbal plus vocal cues), with no accompanying visual cues; and (d) audiovisual—judges saw the visual cues and heard the accompanying sound track. Judges were given the same instructions as the Study 1 judges (modified to be appropriate to their particular rating condition) and rated the messages on the same set of 7-point scales (deceptiveness, planning, and tension). Judges had in front of them a list of the four questions that the senders were asked, in the order in which they occurred.

Results

The Study 1 ratings of deceptiveness, planning, and tension were the dependent variables in 2 (motivation: low/high) × 2 (sex of sender) × 2 (sex of judge) × 2 (planning: planned/unplanned) × 2 (message type: truth/lie) analyses of variance (ANOVAS), with repeated measures on the last three factors. (Senders were the units of analysis.) Analyses of the Study 2 data were identical, except for the addition of the "channel" factor, a repeated measure with four levels (verbal, visual, audio, and audiovisual).[1]

We will first present the results for the factors that were common to both studies (i.e., all results except those involving the channel factor). We will then describe results relevant to our central predictions, which involved channel interactions.

In both studies, senders' lies were transparent to the judges, in that the deceptive messages were rated as more deceptive than the truthful messages: For message type in Study 1, $F(1, 28) = 12.32$, $p < .01$, $d = 1.33$;[2] for Study 2, $F(1, 28) = 10.87$, $p < .01$, $d = 1.25$. This result is consistent with the findings from several dozen previous studies, which have shown that perceivers are generally more accurate than chance at detecting deception (DePaulo, Stone, & Lassiter, in press; DePaulo et al., 1980b).

Senders also tended to reveal to the judges in both studies whether their answers were spontaneous or rehearsed. The planned answers, whether truthful or deceptive, were rated as less spontaneous than the unplanned answers; For planning in study 1, $F(1, 28) = 16.51$, $p < .01$, $d = 1.54$; for Study 2, $F(1, 28) = 3.87$, $p = .06$, $d = .74$.

If, overall, senders' lies were more (or less) detectable when the motivation to lie successfully was high than when it was low, the Motivation × Message Type interaction would be significant. However, this interaction was nonsignificant ($F < 1$) in both studies. Similarly, there was no overall tendency for lies to be more or less detectable when they were planned, compared to when they were unplanned, $F(1, 28)$ for the Planning × Message Type interaction < 1 for both studies.

However, level of planning did have a notable effect on perceptions of deceptiveness, and level of deceptiveness had a significant effect on perceptions of spontaneity. Responses that were planned, whether truthful or deceptive, were perceived as more deceptive by the judges in both studies: For planning in Study 1, $F(1, 28) = 5.72$, $p < .05$, $d = .90$; in Study 2, $F(1, 28) = 7.22$, $p < .05$, $d = 1.02$. Analogously, deceptive messages, whether planned or unplanned, were seen as less spontaneous than truthful messages, Study 1, $F(1, 28) = 2.68$, $p = .11$, $d = .62$; Study 2, $F(1, 28) = 15.01$, $p < .01$, $d = 1.47$.[3]

The ratings of tension were included primarily as a measure of one possible effect of the motivation manipulation. In research by Krauss and his colleagues (Streeter et al., 1977; Krauss et al., Note 1), a somewhat similar manipulation was described as a manipulation of arousal. However, in that research, "aroused" subjects were not rated as any more tense than the unaroused subjects, either by the interviewers who queried them in person or by an independent sample of judges who viewed videotapes of the interviews. Also, the aroused senders did not rate themselves as any more tense than the unaroused senders. In this study, too, the motivation (arousal) manipulation had only limited effects on ratings or reports of senders' tenseness. In both Study 1 and Study 2, there was no main effect of mo-

[1] The sex of judge factor was not of theoretical interest in this study, and was included in the analyses only to increase the precision of the error term. Thus, effects involving this factor will not be reported.

[2] The statistic d is an estimate of the size of the effect, expressed in standard deviation units (Cohen, 1977). As a rule of thumb, Cohen considers ds of .2, .5, and .8 to be small, medium, and large effects, respectively.

[3] In the analysis of the deception ratings, two of the interactions were significant in one of the studies but extremely small in the other. In Study 2, the Motivation × Sex of Sender × Message Type interaction was significant, $F(1, 28) = 5.01$, $p < .05$, $d = .84$. (For Study 1, $F < 1$.) This interaction showed that males' lies were more detectable when motivation was high ($M = .38$) than when it was low ($M = .06$), whereas for females, lies were more detectable when motivation was low ($M = .20$) than when it was high ($M = .05$). (The means are detectability scores, computed by subtracting the mean rating of deceptiveness of the truthful messages from the mean rating of deceptiveness of the deceptive messages.) In Study 1, the Motivation × Sex of Sender × Planning × Message Type interaction was significant, $F(1, 28) = 4.28$, $p < .05$, $d = .78$. (In Study 2, $F = 1.16$.) This interaction showed that for males, lies were more detectable when messages were planned under high levels of motivation or when messages were unplanned under low levels of motivation. The lies of females tended to be less detectable under those conditions.

tivation on ratings of tension (both $Fs < 1$). However, the three-way interaction of motivation, sex of sender, and message type was significant in Study 2, $F(1, 28) = 4.97$, $p < .05$, $d = .84$, and was marginally significant in Study 1, $F(1, 28) = 3.36$, $p = .08$, $d = .69$. This interaction showed that under conditions of high motivation, male senders (relative to females) were perceived as more tense when they were lying than when they were telling the truth. For males who were not highly motivated, and for all female senders, deceptive responses were not perceived as any more tense than truthful responses.

We asked our last 22 senders, after they answered the four questions, to indicate on 7-point scales how tense they felt while answering each question. These self-ratings of tension were the dependent variable in a 2 (motivation) $\times$ 2 (sex) $\times$ 2 (planning) $\times$ 2 (message type) ANOVA, with repeated measures on the last two factors. Only the main effect for message type was significant: Senders indicated that they felt more tense when lying than when telling the truth, $F(1, 18) = 4.81$, $p < .05$, $d = 1.03$. Thus, as in the Krauss research, the highly motivated subjects in this study did not report feeling any more tense ($M = 3.05$) than the less highly motivated subjects ($M = 3.36$), $F < 1$.

One final effect that emerged from the analyses of judges' ratings of tenseness was a main effect for planning. In Study 1, planned responses were perceived as significantly more tense than the unplanned responses, $F(1, 28) = 9.50$, $p < .01$, $d = 1.16$. In Study 2, there was a trend in the same direction, $F(1, 28) = 2.58$, $p = .12$, $d = .61$. The planning manipulation, then, affected all three dependent variables in both studies: Planned responses were consistently perceived as more deceptive, more tense, and less spontaneous than unplanned responses.

We turn now to the interactions involving the channel factor; these effects are, of course, testable only by the Study 2 data. The Message Type $\times$ Channel interaction indicated that lies were differentially detectable in different channels, $F(3, 84) = 8.15$, $p < .01$, eta $= .47$. The direction of this effect is consistent with the combined results of several dozen previous studies reporting channel effects in deception (Zuckerman, DePaulo, & Rosenthal, 1981)— that is, lies were most readily detected in the audio and audiovisual conditions and least readily detected in the visual condition. "Detectability scores," computed by subtracting the mean rating of deceptiveness of the truthful responses from the mean rating of deceptiveness of the deceptive responses, were .35 for audio, .34 for audiovisual, .10 for verbal, and $-.10$ for visual. The analogous values (expressed in standard deviation units, rather than as difference scores), reported in the quantitative summary of previous research, were 1.09, 1.00, .70, and .35 for the audio, audiovisual, verbal, and visual conditions, respectively.

The Channel $\times$ Message Type interaction was also significant in the analysis of the ratings of spontaneity, $F(3, 84) = 3.43$, $p < .05$, eta $= .33$. The direction of the effect was the same as for the ratings of deceptiveness. The degree to which the lies were rated as more planned than the truths was greatest for the audio and audiovisual conditions and smallest in the visual condition. Difference scores (mean ratings of planning of the deceptive responses minus mean ratings of planning of the truthful responses) were .29, .22, .12, and .02, respectively, for the audio, audiovisual, verbal, and visual channels.

Of primary interest in the present study was the hypothesis that senders' lies would be differentially detectable across the various channels, depending on whether their motivation to lie successfully was high or low. Specifically, we predicted that highly motivated senders (compared to less highly motivated senders) would be more successful at masking their deception in the purely verbal channel but less successful in any channel that included nonverbal cues (i.e., the visual, audio, and audiovisual channels). This hypothesis describes a three-way interaction of motivation, message type, and channel; the contrast testing the predicted interaction was significant, $F(1, 84) = 6.14$, $p < .01$, $d = .94$. Detectability scores for this interaction are presented in Table 1. Positive scores indicate that the judges correctly perceived the lies as more deceptive than the truths. As shown in the bottom row of the table, the lies of the highly motivated senders were relatively more detectable than the lies of the less highly motivated senders in all three channels that included nonverbal cues (visual, audio, and audiovisual), but they were less detectable in the verbal-only channel. (The con-

Table 1
*Detectability of Deception in Verbal and
Nonverbal Channels Under Conditions
of Low and High Motivation
to Lie Successfully*

	Channel			
Motivation	Verbal	Visual	Audio	Audio-visual
High	−.02	.03	.38	.48
Low	.22	−.23	.32	.19
High minus low	−.24	.26	.06	.29

trast weights used to test this effect were, in the high-motivation condition, −3, +1, +1, and +1, for the verbal, visual, audio, and audiovisual channels, respectively; in the low-motivation condition, the weights were +3, −1, −1, and −1 for the same channels).

Analyses of the detectability scores computed separately for the high- and low-motivation senders showed that under conditions of high motivation, senders' lies were more readily detected when vocal cues were available (audio and audiovisual conditions) than when they were not (verbal and visual conditions), $F(1, 42) = 18.00, p < .001, d = 1.31$. (Contrast weights were −1, −1, +1, and +1, respectively, for the verbal, visual, audio, and audiovisual conditions.) In the low-motivation condition, the presence or absence of words made the biggest difference: Senders' lies were more detectable in all three conditions that included words (verbal, audio, and audiovisual) than in the one purely nonverbal condition (visual), $F(1, 42) = 12.81, p < .001, d = 1.10$. (Contrast weights were −3 for the visual-only condition, and +1 for each of the other conditions.)

The three-way interaction of planning, message type, and channel was not significant, $F(3, 84) < 1$, for ratings of deceptiveness. Thus, the hypothesis that senders' lies would be differentially detectable across the various channels, depending on whether each response was planned or unplanned, was not supported.

Discussion

Senders who were highly motivated to lie effectively were no more or less successful overall at masking their deceit than were less highly motivated senders. It could be argued that an overall difference would have emerged if the highly motivated senders were induced to experience the same level of motivation as, say, a murder suspect. Most such intense inductions, although alluring from a scientific perspective, tend to be indefensible from an ethical one. It could also be argued that an overall effect would have appeared if the difference between the low- and the high-motivational inductions were increased. In the present research—in which senders in all conditions were videotaped openly while they sat not more than a few feet away from a panel of six of their peers who were scrutinizing and evaluating them—the level of involvement was probably at least moderately high in both the low- and the high-motivational conditions. Despite these potential limitations, the motivational manipulation used in the present research did produce a marked difference in the relative detectability of deception across different channels, and in the predicted direction. In all channels that included nonverbal cues, the lies of the highly motivated senders were more readily detected than those of the less highly motivated senders; in the condition in which judges had access only to the senders' words, however, the lies of the highly motivated senders were less accurately detected than the lies of the less motivated senders.

We suggested earlier that highly motivated senders might try harder to control and regulate their verbal and nonverbal expressions, but that these attempts would only be successful in the channel that is most amenable to willful control—that is, the verbal-only channel. In the less controllable channels, attempts at control might actually backfire, rendering lies more transparent rather than less. Alternatively, it is possible that senders do not distribute their efforts at expressive control equally across all channels but instead focus their efforts only on the verbal channel—perhaps because it is most salient to them, because they believe that it is most salient to others, or because they feel that they can control it most effectively. The nonverbal channels, left unguarded under conditions of high motivation, become especially revealing.

The two previous explanations of the effects of motivation on verbal and nonverbal revealingness have placed the locus of the effect in the senders. In fact, previous research has shown that there are important differences in senders' behavior under different motivational

conditions. For example, the difference in voice fundamental frequency between truthful answers and deceptive ones is even more pronounced when senders are highly motivated to lie effectively (Streeter et al., 1977). Perhaps these kinds of differences that occur in senders' behavior make perceivers especially suspicious. These wary perceivers may then adopt a special decoding strategy—for example, they may begin to pay more attention to more covert channels such as the body and the voice (see DePaulo & Rosenthal, 1979; Zuckerman, Spiegel, DePaulo, & Rosenthal, 1982). There is evidence that one such strategy—paying particular attention to tone of voice cues— can in fact facilitate success at discriminating truth from deceit (DePaulo, Lassiter, & Stone, 1982).

From claims that a black-box type instrument called the PSE (Psychological Stress Evaluator) can measure stress-related voice tremors that reliably reveal deceit, to more theoretically and empirically based claims (e.g., Ekman, 1981; DePaulo et al., 1982; Zuckerman, Larrance, Spiegel, & Klorman, 1981), tone-of-voice cues have often been heralded as playing a special role in signaling deceit. Our Study 2 data suggest that the presence of tone-of-voice cues (in combination with other cues) might be particularly important when senders are highly motivated to get away with their lies. When senders are less highly motivated, what matters most is whether or not judges have access to words.

The finding that the lies of highly motivated senders are less accurately detected by transcripts than by audiotapes or videotapes (with sound tracks) has important applied implications. For example, it raises the possibility that transcripts of highly involving transactions (e.g., some of the White House transcripts) present a different, and perhaps more misleading, picture of the truthfulness of the various participants than the audiotaped recordings of those same interactions. Similarly, transcripts of jury trials used in the legal profession might be more misleading than audiotapes or videotapes of those trials.

Although the biggest increments in detectability of high- versus low-motivation senders occurred in the two channels that included visual cues (visual and audiovisual), judges who had access only to visual cues were, in an absolute sense, not at all successful at de-

tecting the deception of either the low- or the high-motivation senders. When judging the less motivated senders, they were completely fooled; they rated the lies as less deceptive than the truths. The effect of increasing senders' motivation was simply to increase judges' accuracy from worse than chance to near chance. Thus, visual cues, at least when they are viewed apart from other kinds of cues, are faking cues, in that they tend to mislead rather than inform onlookers about the senders' true opinions or feelings.

In the three channels in Study 2 that included nonverbal cues (visual, audio, and audiovisual), judges were more accurate at detecting the lies of the highly motivated senders than those of the less highly motivated senders. Although the Study 1 judges, who viewed the senders in person, had access to all of the information available to the Study 2 judges, they were not any more successful at detecting the lies of the high (as compared to the low) motivation senders. This same pattern of results has also been reported in a previous set of studies (Krauss et al., Note 1). Although numerous factors can be postulated to account for these results,[4] we would prefer not to emphasize these differences at this point, for the following reason: The correlation between level of motivation and detectability of deceit was not significantly different for the Study 1 judges, as compared to the audio, visual, and audiovisual judges of Study 2, $Z = 1.04$, ns.

In the present research we found no evidence that planned lies are more or less readily detectable than unplanned lies. There were also no indications in these data that lies are differentially detectable in different channels, depending on whether they are planned or spontaneous. The type of planning allowed for in the present study might be somewhat anal-

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[4] For example, (a) the judges were different (neither in our research nor in Krauss's were subjects randomly assigned to Study 1 vs. Study 2); (b) the information available to the judges was different (Study 2 judges had access only to edited versions of the senders and their messages; Study 1 judges had access to additional information about how the senders looked both before and after they gave their responses); and (c) judges might obey different laws of decoding decorum when interacting in person than when observing someone on tape (for instance, judges might be less inclined to attend closely to "leaky" channels such as the body when the senders are present than when they are viewed on a monitor).

ogous to that which occurs during conversations when the topic unexpectedly switches to a theme that one of the interactants would prefer to avoid. The interactant then has a limited amount of time to decide what to say (and how to say it). Other types of planning—for example, planning done much more carefully, farther in advance—perhaps even involving overt rehearsal—might have a more pronounced effect on the detectability of deceit (Littlepage & Pineault, Note 3). Also, planning might be especially effective only for certain types of people. For example, Miller, de Turck, and Kalbfleisch (Note 4) found—consistent with the results of the present study—no *overall* differences in detectability of planned versus spontaneous lies; however, for senders who were high in self-monitoring, planned lies were less readily detected than unplanned lies.

Although the planning manipulation used in the present study did not affect judges' accuracy at detecting deception, it did influence their perceptions. Responses that were planned, whether truthful or deceptive, were rated as more deceptive, more tense, and less spontaneous than responses that were not planned. Similarly, deceptive responses, whether planned or unplanned, were perceived as more deceptive and less spontaneous than truthful responses. Whereas the deceptive responses in the present study were, by design, just as often unplanned as planned, people who are not constrained by experimental design probably do plan their lies more carefully than their truths. Thus, perceivers' tendency to associate a lack of spontaneity with deceit may be justified in many instances.

Reference Notes

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