

Improving Decision Making by Means of Dissent¹

CHARLAN JEANNE NEMETH,² JOANIE B. CONNELL,
JOHN D. ROGERS, AND KEITH S. BROWN
University of California, Berkeley

Antidotes to problems associated with uniformity of viewpoints have generally involved dissent in one form or another (Katzenstein, 1996), one being "devil's advocate." Research on authentic dissent has documented additional advantages in that it stimulates divergent and original thought (Nemeth, 1995). In this study, authentic dissent was compared with devil's advocate and with no dissent. Findings indicate that authentic dissent was superior in (a) stimulating a greater proportion of original thoughts, (b) considering the opposite position, and (c) direct attitude change. Devil's advocate was found to stimulate cognitive bolstering of the initial position, thus raising concerns about the unintended consequences of techniques such as devil's advocate and the subtle task facing attempts to foster original thought and yet maintain cohesion.

In studies on the quality of process and outcome in decision-making groups, one major problem appears to be the seeking of uniformity or agreement. People fear being different or having differing views. This is partly a result of the fact that they assume that "truth lies in numbers" and that, if they differ, error must lie with them. It is also a result of a fear of being rejected, a consequence likely to occur if they maintain a minority viewpoint (Allen, 1965; Asch, 1956; Mackie, 1987; Schachter, 1951). Thus, there is often agreement at the expense of quality of discussions or decisions (Pratkanis & Aronson, 1992).

Such tendencies are illustrated by Janis' (1982) work on Cabinet-level foreign-policy decisions, ones termed *fiascoes*. Strains to uniformity (group-think) were found to cause an adoption of a preferred solution without adequate consideration of information or alternatives. There is also evidence that the uniformity is not just at the level of the decision. Larey and Paulus (1999) found that people converge both in the rate of ideas and the type of ideas that are generated.

¹This study was supported by a faculty grant to the senior author from the Institute of Industrial Relations at the University of California, Berkeley—support which is gratefully acknowledged. We especially want to thank Claire Brown for her support and Helen Boucher for her helpful comments. Copies of the actual case and the preprogrammed "arguments" over the three rounds of deliberation are available on request.

²Correspondence concerning this article should be addressed to Charlan Jeanne Nemeth, Department of Psychology, University of California, 3210 Tolman #1650, Berkeley, CA 94772-1650.

Most antidotes for these problems of uniformity have taken the form of fostering dissent in one form or another (Katzenstein, 1996; Turner & Pratkanis, 1997). Brainstorming techniques (Osborn, 1957), for example, have been used to promote diversity of views by trying to counter fears about being evaluated (Diehl & Stroebe, 1987). Janis (1982) offered several recommendations, including the use of outside experts, meetings of subgroups, and the use of a "devil's advocate." The role of the latter is to vigorously criticize plans under consideration by a group. The hope is that such dissent will thwart the rush to judgment and instead foster discussion, a consideration of more alternatives and careful scrutiny of the available information.

A good deal of the research on the value of a devil's advocate has compared this technique with that of no dissent, defined as either an "expert" or consensus. Other research has compared it to "dialectical inquiry" in which a counter plan is offered, rather than simple criticism of the preferred plan. Both techniques have been found to be useful, especially when compared to expert or consensus conditions (Cosier, 1978; Mason, 1969; Mitroff, Barabba, & Kilmann, 1977; Schweiger & Finger, 1984). However, consistent differences between the two methods have, by and large, been equivocal or nonexistent (Katzenstein, 1996).

The advantages of such techniques may lie in the fact that they instruct people to "consider the opposite" or at least consider a plausible alternative. Such techniques, when specifically instructed, have been found to aid consideration of alternatives and to lessen bias (Hirt & Markman, 1995; Lord, Lepper, & Preston, 1984). Even reading or hearing a counterattitudinal message influences the quantity and quality of thought (Eagly & Chaiken, 1993; Petty & Cacioppo, 1986). However, in group settings, there are not generally specific instructions for each aspect. Perhaps more importantly, there are literally hundreds of studies documenting how difficult it is for people to seriously question their own judgment, especially when that judgment is bolstered by consensus (Paulus, 1989). Thus, such role playing or techniques may not stimulate an actual reappraisal or a serious consideration of alternatives.

However, authentic dissent has been found to actively stimulate such cognitive activity. Those exposed to dissent actually search for more information (Nemeth & Rogers, 1996), consider more strategies in the service of performance (Nemeth & Kwan, 1987), and evidence more original thought (Nemeth & Kwan, 1985). They also detect correct solutions that otherwise would have gone undetected (Atsumi & Burnstein, 1992; Nemeth & Wachtler, 1983). In naturally occurring groups, the presence of minority dissent has been found to improve the quality and quantity of ideas and solutions (Smith, Tindale, & Dugoni, 1996; Van Dyne & Saavedra, 1996).

The disadvantages of authentic dissent lie primarily in the conflict that is engendered and the dislike for the person holding the dissenting viewpoint. Thus, there might be a practical advantage to a devil's advocate if he or she stimulates

divergent thinking as does authentic dissent. One might achieve both better decisions and cohesion; however, we hypothesize otherwise.

The devil's advocate, by role playing dissent, is likely to be discounted as a useful source of information on the issue (Maass & Clark, 1984; Moscovici & Nemeth, 1974). Additionally, dissenting viewpoints that do not seriously challenge a group member's own judgment may fail to provide sufficient motivation for the reassessment of currently held views and a search for alternatives (Kruglanski, 1989; Taylor, 1981). Role playing may actually thwart serious consideration of new alternatives. Armed with the possibly incorrect belief that other options have been considered, thoughts may corroborate one's initial belief and confidence may be inflated.

In the current study, we experimentally manipulate whether dissent is *authentic* or whether it is *assigned* in the form of a devil's advocate. These conditions are compared to a condition where there is no dissent (consensus condition).

The hypotheses for the study are as follows:

Hypothesis 1. Authentic minority dissent will stimulate more original (internally generated) thoughts and fewer paraphrases of others' thoughts (externally generated) than will devil's advocate or consensus conditions.

Hypothesis 2. Authentic dissent will stimulate pro and con thoughts on the issue, while devil's advocate will stimulate thoughts favoring one's initial judgment.

Hypothesis 3. Authentic minority dissent will stimulate better recall of members' arguments than will the other two conditions.

Hypothesis 4. Authentic minority dissent will lead to more direct attitude change than will devil's advocate.

Method

Overview

The task involves a personal injury case, adapted and pretested to ensure that most individuals would favor a low level of compensation. Subjects were run in groups of 4 and played the part of a juror ostensibly interacting with other jurors in a civil lawsuit, with the goal of determining compensation for the victim. In fact, all participation was via computer, with preprogrammed arguments for the other 3 participants. In one condition (consensus), all persons agreed on a low compensation; in a second condition (authentic minority), one individual

indicated an opinion of high compensation; and in a third condition, one individual was assigned the role of devil's advocate and took the high-compensation position, as in the authentic dissent condition. Dependent measures include opinion change, thought listing about the case, search for information, and recall of facts and arguments.

Participants and Procedure

Subjects were 47 female undergraduates who volunteered for participation through the Psychology Department's subject pool. Upon entry, subjects were seated at one of four computers. All individuals were separated by dividers so that, while they were aware of each other's presence, they could not see each other and were asked not to speak to each other.

Individuals logged onto the computer, and a realistic feedback indicated that all 4 individuals were connected. They were then asked to read a personal-injury case (adapted from Nemeth & Wachtler, 1974). The case involved a washing-machine repairman who was injured on the job as a result of the collapse of a handrail in a client's home. While his lost wages and medical costs had been covered, he was suing for "pain and suffering." Eight scale values were permitted for the award in \$75,000 increments (1 = \$1 to \$75,000, 2 = \$75,001 to \$150,000, up to 8 = more than \$525,000). All subjects judged appropriate compensation as 1 or 2 on the scale; that is, between \$1 and \$150,000. Feedback as to the others' judgments depended on the condition being manipulated. All participants believed that they were Person A. In the devil's-advocate condition, the instructions asked Person B to play the role of devil's advocate. That person was instructed to "take a position that differs from the others—regardless of her actual beliefs." In the authentic-dissent and control conditions, no such information was given.

When the "first ballot" appeared on the screen, it showed that Persons C and D chose the same interval as did the subject, thus favoring low compensation. In the devil's advocate and the authentic-minority conditions, Person B chose a high interval, favoring high compensation. In the consensus condition, Person B chose the same position as did Persons A, C, and D. Thus, in the consensus condition, all individuals agreed with the subject. In the devil's advocate and authentic-minority conditions, Person B differed by favoring a judgment that was much higher, but such dissent was assigned by the experimenter in the devil's-advocate condition.

The group then "deliberated" for three rounds by typing in their comments. All comments then appeared on a single screen but, in fact, the comments of the other three individuals were preprogrammed.

Following the deliberations, individuals listed their thoughts about the case. These thoughts were analyzed both for originality and for polarity. They were

also asked for their final award amount to assess direct attitude change. Following this, they were asked for recall of the statements made during the deliberations. They were permitted to ask any questions, and then were debriefed and dismissed.

Results

Data were analyzed by three-level one-way ANOVAs, with the three levels representing the authentic dissent, devil's advocate, and consensus conditions.

Recall of Arguments

To some extent, recall of arguments is as much a manipulation check as a dependent measure, in that dissent, being unique and unexpected, should stimulate more attention and better recall of the arguments expressed. Recall of arguments was coded by two judges for correctness, with an interrater reliability of approximately 90%. A 3×3 MANOVA (Condition \times Participants, with repeated measures over the participants) showed a significant main effect for member, $F(2, 82) = 6.00, p < .01$; no significant main effect for condition, $F(2, 41) = 0.94, ns$; and a significant interaction between condition and participant, $F(4, 82) = 3.64, p < .01$. Subjects accurately recalled Person B's statements more than Person C or D, but this was primarily when Person B was a dissenter. Subjects in both the authentic-minority and devils'-advocate conditions correctly recalled more of Person B's statements than did subjects in the consensus condition, $t(41) = 2.12, p < .05$, and $t(41) = 2.40, p < .05$, respectively.

Source of Thoughts

Thoughts were coded by two trained judges as either internally or externally generated, using the procedures suggested by Cacioppo, Harkins, and Petty (1981) and Zdaniuk and Levine (1996). A thought was judged to be *external* if it was a paraphrase (accurate or not) of either a statement made by one of the other group members during the deliberation or presented in the case vignette. *Internal* thoughts were those judged as generated by the participant—a thought considered to be new and original. Interjudge reliability was 89%.

A three-level one-way ANOVA was calculated on the proportion of internal thoughts. Results showed a statistically significant difference between conditions, $F(2, 41) = 3.95, p < .05$. Subjects in the authentic-dissent condition had a significantly higher proportion of original thoughts (internally generated) than did those exposed to a devil's advocate, $t(41) = 2.14, p < .05$; or those in the consensus condition, $t(41) = 2.70, p < .05$. The latter two conditions were not significantly different.

Table 1

Means of Dependent Variables by Condition

	Authentic dissent (<i>n</i> = 14)	Devil's advocate (<i>n</i> = 17)	No dissent (<i>n</i> = 14)
Origin of thoughts			
Internal	4.71 _a	4.50 _a	4.21 _a
External	0.29 _a	0.88 _{ab}	1.57 _b
Polarity of thoughts			
Supporting thoughts	0.14 _a	0.81 _b	0.50 _{ab}
Opposing thoughts	0.21 _a	0.19 _a	0.20 ^a
Opinion change	0.29	0.12	-0.21

Note. Means that do not share subscripts are significantly different at the .05 level by planned contrasts.

Considering the raw number of internal and external thoughts, participants did not differ in the raw number of internally generated thoughts by condition, $F(2, 41) = 0.13$, *ns*, but they did differ in the raw number of externally generated thoughts, $F(2, 41) = 5.00$, $p < .05$. Subjects in the authentic-dissent condition had significantly fewer externally generated thoughts than did subjects in the consensus condition, $t(41) = 3.14$, $p < .01$; but did not differ from the devils'-advocate condition, $t(41) = 1.50$, *ns*. The latter had marginally fewer external thoughts than did the consensus condition, $t(41) = 1.80$, $p < .09$ (Table 1).

Polarity of Thoughts

Thoughts were also coded along a polarity dimension; namely, the direction of the thought. There were three categories: supporting the participant's position (favoring low award), opposing the participant's position (favoring high award), and neutral (Cacioppo et al., 1981). While most thoughts were neutral, those in the devil's-advocate condition expressed more thoughts for their own position (low award) than did those in the authentic-minority condition, $t(41) = 2.16$, $p < .05$. The no-dissent condition was in between, not differing significantly from either experimental condition in number of thoughts supporting own position (Table 1).

Opinion Change

Change in opinion from the first ballot to postdeliberation was analyzed by means of a 3×1 ANOVA and was found to be marginally significant,

$F(2, 42) = 2.60, p < .09$. Those in the authentic-dissent condition increased their awards more than did those in the no-dissent condition, $t(42) = 2.22, p < .05$. The devil's-advocate condition was in between, not differing significantly from either the authentic dissent or control conditions, $t(42) = 1.54, ns$, and $t(42) = 0.78, ns$, respectively.

Another way of viewing opinion change, however, is relative to no change. Comparing each of the change scores to zero change, the authentic minority significantly persuaded others, $t(13) = 1.68, p < .05$; whereas the devil's-advocate and consensus conditions did not: $t(16) = 0.81, ns$, and $t(16) = -1.40, p < .09$, for the devil's advocate and consensus conditions, respectively. In fact, the direction of the consensus condition was polarized to an even lower amount (Table 1).

Discussion

We started with the question as to whether authentic minority dissent and its role-playing counterpart, devil's advocate, would stimulate divergent thought as well as more original thought. We further sought to understand if they were differentially effective. Dissent, whether role played or authentic, has been hypothesized as an antidote to some of the concurrence-seeking tendencies in groups, tendencies that include a lack of consideration of both information and alternatives. Authentic dissent, as studied in the minority-influence literature (Nemeth, 1995), appears to do more than thwart the constraining aspects of groups. It actually stimulates divergent as well as original thought.

In the present study, we find that individuals exposed to either authentic dissent or to a devil's advocate paid attention to the dissenter's arguments. In both conditions, individuals accurately remembered more of Person B's (the dissenter) arguments than did individuals in the consensus condition (where Person B took the same position as they did). This, of course, is not particularly surprising, since dissenters are often the object of attention, of arguments directed at them, and of ridicule (Schachter, 1951). However, it is of interest that this attention is so accurate in the authentic-minority and devil's advocate conditions. They not only remembered Person B, but they also accurately remembered what she said.

Perhaps more important are the findings regarding divergent and original thought. It was here that we found the superiority of authentic minority dissent, relative to the devil's advocate. Subjects in the authentic-minority condition had a higher proportion of thoughts that were "internally generated"; that is to say, their thoughts were their own, relative to a paraphrase of someone else's arguments or the phrasing of the case vignette. The devil's-advocate condition did not significantly differ from the no-dissent condition in this respect; both conditions had smaller proportions of thoughts that were internally generated than did those in the authentic-minority condition.

In raw numbers of internal versus external thoughts, the data demonstrate that it is the external thinking that truly differentiates the conditions. The consensus or no-dissent condition showed the most externally generated thoughts. The devil's advocate was marginally better in the sense that participants had marginally fewer external thoughts than did those in the no-dissent condition. However, it was the participants exposed to the authentic minority that showed significantly fewer thoughts that were externally generated or paraphrases of others' views.

Polarity of these thoughts was also of interest. While most individuals reported relatively neutral thoughts (i.e., thoughts that were not easily coded as favoring one position or another), the tendency to think in ways that supported one's initial position versus the opposing position differed by condition. Especially interesting is the fact that individuals exposed to the devil's advocate showed a tendency for cognitive bolstering. They had significantly more thoughts that favored their own initial position than did those who were exposed to authentic dissent. The consensus condition was in between. Though not significant, the direction was that the consensus condition showed more bias toward own position than the authentic-minority condition, but less than the bias shown in the devil's-advocate condition.

Finally, some evidence for considering at least one other opinion comes from the fact that there is movement to the dissenting position when it comes from an authentic minority. There was less movement to the devil's-advocate position. Further, the authentic-minority condition was the only condition showing significant opinion change. Of some interest is that the no-dissent condition shows the classic polarization effect. After discussion among likeminded individuals, the opinion change was more extreme in the direction of the initial judgment.

As a whole, the findings offer evidence that authentic-minority dissent is more effective in stimulating unbiased thinking, consideration of both sides of an issue, as well as original independent thought, relative to a devil's advocate. However, the devil's advocate did lessen the amount of external thinking relative to no dissent. It is the no-dissent condition where people thought in terms of others' views; devil's advocate was marginally better in that respect, and authentic dissent was significantly better.

The one aspect suggesting a note of caution with regard to a devil's advocate is the tendency for individuals to think in ways that supported their initial viewpoint. Thus, their thoughts, while internally generated, were directed at confirmation of their initial judgments. Their thoughts were not particularly divergent. In fact, they were biased.

It is clear that numerous questions are raised from this series of findings, among them the role of conflict in decision making, the exact thought processes that are stimulated by dissent and the relationship between such processes, and the solutions that ensue. However, these results do argue that the devil's advocate is not simply a weaker but benign version of authentic dissent. Rather than

stimulate consideration of other views, the devil's advocate may have an insidious aspect in that people may believe that they have considered an alternative and, as such, are even less vigilant about considering other options. They may become even more extreme and confident in their initial views and, contrary to Janis' (1982) belief that the devil's advocate is an antidote to groupthink, it may actually spur such a rush to judgment.

Beyond these specific questions, we would do well to remember Sutton and Hargadon's (1996) admonition that there are other outcomes of importance as well, including acceptance of the decision, its execution, morale, and cohesion of the group. In this article we have concentrated primarily on the ability of dissent to stimulate divergent and original thought. In that sense, authentic dissent is superior to a devil's advocate. However, we have not focused on possible negative consequences of the conflict that may be engendered by authentic dissent. Most likely, the devil's advocate will lead to a less contentious and potentially disruptive atmosphere. This raises a subtle set of considerations and leaves open the possibility that the devil's-advocate mechanism might be more finely tuned to harness its stimulating properties while ameliorating conflict.

References

- Allen, V. L. (1965). Situational factors in conformity. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 133-175). New York, NY: Academic Press.
- Asch, S. E. (1956). Studies of independence and conformity: A minority of one against a unanimous majority. *Psychological Monographs*, *70*, 1-70.
- Atsumi, T., & Burnstein, E. (1992). *How is minority influence different from majority influence and what does it have to do with awareness of being influenced?* Unpublished manuscript, University of Michigan.
- Cacioppo, J. T., Harkins, S. G., & Petty, R. E. (1981). The nature of attitudes and cognitive responses and their relationships to behavior. In R. E. Petty, T. M. Ostrom, & T. C. Brock (Eds.), *Cognitive responses in persuasion* (pp. 217-235). Hillsdale, NJ: Lawrence Erlbaum.
- Cosier, R. A. (1978). The effects of three potential aids for making strategic decisions on prediction accuracy. *Organizational Behavior and Human Performance*, *22*, 295-306.
- Diehl, M., & Stroebe, W. (1987). Productivity loss in brainstorming groups: Toward the solution of a riddle. *Journal of Personality and Social Psychology*, *53*, 497-509.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. San Diego, CA: Harcourt Brace Jovanovich.
- Hirt, E. R., & Markman, K. D. (1995). Multiple explanation: A consider-an-alternative strategy for debiasing judgments. *Journal of Personality and Social Psychology*, *69*(6), 1069-1086.

- Janis, I. L. (1982). *Groupthink* (2nd ed.). Boston, MA: Houghton Mifflin.
- Katzenstein, G. (1996). The debate on structured debate: Toward a unified theory. *Organizational Behavior and Human Decision Processes*, *66*, 316-332.
- Kruglanski, A. W. (1989). *Lay epistemics and human knowledge*. New York, NY: Plenum.
- Larey, T. S., & Paulus, P. B. (1999). Group preference and convergent tendencies in groups: A content analysis of group brainstorming performance. *Creativity Research Journal*, *12*, 175-184.
- Lord, C. G., Lepper, M. R., & Preston, E. (1984). Considering the opposite: A corrective strategy for social judgment. *Journal of Personality and Social Psychology*, *47*, 1231-1243.
- Maass, A., & Clark, R. D. (1984). Hidden impact of minorities: Fifteen years of minority influence research. *Psychological Bulletin*, *95*, 428-450.
- Mackie, D. M. (1987). Systematic and nonsystematic processing of majority and minority persuasive communications. *Journal of Personality and Social Psychology*, *53*, 42-52.
- Mason, R. O. (1969). A dialectical approach to strategic planning. *Management Science*, *15*, B403-B414.
- Mitroff, I. I., Barabba, V. P., & Kilmann, R. H. (1977). The application of behavioral and philosophical technologies to strategic planning: A case study of a large federal agency. *Management Science*, *24*, 44-58.
- Moscovici, S., & Nemeth, C. (1974). Social influence. II: Minority influence. In C. Nemeth (Ed.), *Social psychology: Classic and contemporary integrations* (pp. 217-249). Chicago, IL: Rand-McNally.
- Nemeth, C. J. (1995). Dissent as driving cognition, attitudes, and judgments. *Social Cognition*, *13*(3), 273-291.
- Nemeth, C., & Kwan, J. (1985). Originality of word associations as a function of majority vs. minority influence processes. *Social Psychology Quarterly*, *48*, 277-282.
- Nemeth, C. J., & Kwan, J. (1987). Minority influence, divergent thinking, and the detection of correct solutions. *Journal of Applied Social Psychology*, *17*, 786-797.
- Nemeth, C., & Rogers, J. (1996). Dissent and the search for information. *British Journal of Social Psychology*, *35*, 67-76.
- Nemeth, C., & Wachtler, J. (1974). Creating perceptions of consistency and confidence: A necessary condition for minority influence. *Sociometry*, *37*, 529-540.
- Nemeth, C., & Wachtler, J. (1983). Creative problem solving as a result of majority vs. minority influence. *European Journal of Social Psychology*, *13*, 45-55.
- Osborn, A. F. (1957). *Applied imagination*. New York, NY: Scribner.
- Paulus, P. B. (1989). *The psychology of group influences*. Hillsdale, NJ: Lawrence Erlbaum.

- Petty, R. E., & Cacioppo, J. T. (1986). *Communication and persuasion: Central and peripheral routes to attitude change*. New York, NY: Springer-Verlag.
- Pratkanis, A. R., & Aronson, E. (1992). *Age of propaganda: The everyday use and abuse of persuasion*. New York, NY: Freeman.
- Schachter, S. (1951). Deviation, rejection, and communication. *Journal of Abnormal and Social Psychology*, **46**, 190-207.
- Schweiger, D. M., & Finger, P. A. (1984). The comparative effectiveness of dialectical inquiry and devil's advocacy: The impact of task biases on previous research findings. *Strategic Management Journal*, **5**, 335-355.
- Smith, C. D., Tindale, R. S., & Dugoni, B. L. (1996). Minority and majority influence in freely interacting. Groups: Qualitative vs. quantitative differences. *British Journal of Social Psychology*, **35**, 137-150.
- Sutton, R. I., & Hargadon, A. (1996). Brainstorming groups in context: Effectiveness in a product design firm. *Administrative Science Quarterly*, **41**, 685-718.
- Taylor, S. E. (1981). A categorization approach to stereotyping. In D. L. Hamilton (Ed.), *Cognitive processes in stereotyping and intergroup behavior* (pp. 88-114). Hillsdale, NJ: Lawrence Erlbaum.
- Turner, M. E., & Pratkanis, A. R. (1997). Mitigating groupthink by stimulating constructive conflict. In C. K. W. DeDreu & E. Van de Vliert (Eds.), *Using conflict in organizations* (pp. 53-71). London, UK: Sage.
- Van Dyne, L., & Saavedra, R. (1996). A naturalistic minority influence experiment: Effects on divergent thinking, conflict, and originality in work-groups. *British Journal of Social Psychology*, **35**, 151-168.
- Zdaniuk, B., & Levine, J. M. (1996). Anticipated interaction and thought generation: The role of faction size. *British Journal of Social Psychology*, **35**, 201-218.