

Devil's advocate versus authentic dissent: stimulating quantity and quality

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Abstract

Given the relationship between uniformity of views, premature adoption of a preferred solution and poor decision making, many suggestions have been aimed at fostering dissent, including the usage of a 'devil's advocate.' The hope is that such a mechanism will stimulate the kinds of reconsideration, better information processing and decision making as has been found to be stimulated by authentic dissent. In a prior study comparing these two processes, devil's advocate appeared to foster thinking that was primarily aimed at cognitive bolstering of the initial viewpoint rather than stimulate divergent thought. While that study left the actual position of the DA unknown, the present study compared conditions where the devil's advocate position was known (and consistent or inconsistent with the assigned position) or unknown. It further utilized quantity and quality of solutions as a dependent measure rather than simply cognitive activity. Results indicated that the authentic minority was superior to all three forms of 'devil's advocate,' again underscoring the value and importance of authenticity and the difficulty in cloning such authenticity by role-playing techniques. Copyright © 2001 John Wiley & Sons, Ltd.

The dangers of uniformity of viewpoints for group decision making has been well documented (Janis, 1972; McGrath, 1984). Groups, especially those characterized by highly directed leaders, a high level of cohesion and time pressures, can arrive at a decision prematurely. They can fail to adequately search for information, consider alternatives or develop practical contingency plans, thus making decisions that are faulty and even dangerous (Janis, 1972; Moorehead, Ference, & Neck, 1991). One reason is that groups tend to share information that the individuals have in common; the probability that a piece of information will be shared in group discussion is proportional to the number of people aware of it (Stasser and Stewart, 1992). Thus, 'strains to uniformity', conformity pressures and tendencies to express what people have in common rather than how they differ may all contribute to such poor decision making.

Attempts to raise the quality of decision making have, in general, tried to increase the diversity of views. Some have attempted this via increasing the demographic diversity in groups and organizations (Chatman, Polzer, Barsade, & Neale, 1998; Jackson, 1992). Others have utilized techniques such as

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brainstorming (Diehl and Stroebe, 1987), utilization of 'outsiders' and, especially, utilization of techniques such as devil's advocate (Janis, 1982; Schweiger, Sandberg, & Ragan, 1986). The idea is that, if someone role-plays a position critiquing the favored alternative, one can forestall closure and presumably increase consideration of alternatives.

Rather than using 'techniques' involving role-playing or instructions, there already exists considerable evidence that authentic dissent has these desirable consequences. A number of studies show that minority dissent stimulates a consideration of more information and more alternatives to a problem, resulting in better and more creative solutions. For example, studies have found that authentic minority dissent stimulates a search for more information on all sides of the issue, a consideration of more strategies in the service of performance, more creativity and detection of solutions that otherwise would have gone undetected (Nemeth, 1986; 1995; Volpato *et al.*, 1990). It serves the generation of original and divergent ideas both in experimental and in more naturalistic settings, including Supreme Court decisions (Gruenfeld, 1995) and work groups (DeDreu and DeVries, 1997; Gruenfeld, Martorana, & Fan 1999; Nemeth and Staw, 1989).

Though authentic dissent has such benefits, evidence also suggests some negative consequences, especially with regard to morale. Generally, the dissenter is disliked (Levine, 1980; Schachter, 1951), even when he or she has stimulated better and more creative thought (Nemeth and Wachtler, 1983). Dissent is an obstacle to agreement; dissenters have questioned the majority position and they have generated conflict. There is additional evidence that 'socio-emotional' conflict, as opposed to task conflict, can have a negative influence on performance (Turner and Pratkanis, 1997).

Given the likely consequences of lowered morale and rejection of the dissenter, one is tempted to try to 'have it all', to find a mechanism that will stimulate divergent information processing and cognitive activity but without some of the animus or conflict. Thus, devil's advocate becomes a candidate, a technique that has been found to have some beneficial consequences for individual and group decision-making (Schwenk, 1990; Schweiger *et al.*, 1986).

A devil's advocate has its origins in a practice of the Roman Catholic Church established by Pope Sixtus V in 1587 when an individual was proposed for beatification or canonization. In this practice, a promoter of the faith critically examined the life and miracles attributed to this individual and was to present all facts unfavorable to the candidate. Similarly, devil's advocate as studied in the social psychological literature involves criticism of a proposal or of a stated position (Schwenk, 1990). The devil's advocate should find everything that is wrong with the plan or position.

Should such a technique stimulate the reexamination of positions, consideration of more alternatives and culminate in more and better solutions, one might well expect it to do so with reduced conflict as compared with authentic dissent. Asked to role-play an opposing position, one can hardly fault the dissenter (Kelly, 1971). It is not he or she who contests the majority view or who persists in what most would consider an incorrect view. One could even argue that such a conflict might lead to better decision making and creativity in that it may foster 'constructive' conflict, one built on trust and open minded exchange rather than 'destructive' conflict, one built on dominance and distrust (Tjosvold and Deemer, 1980).

Results from a study comparing authentic dissent and a devil's advocate (Nemeth, Connell, Rogers, & Brown, 2001), however, suggests a complexity. Like authentic dissent, the devil's advocate stimulated more original thoughts, that is, thoughts generated by the subject herself, relative to a control. It did not, however, reach the level of original thoughts stimulated by the authentic dissenter. Of particular interest is the fact that the results also showed a negative, unintended consequence of devil's advocate. The DA stimulated significantly more thoughts in support of the initial position. Thus, subjects appeared to generate new ideas aimed at cognitive bolstering of their initial viewpoint but they did not generate thoughts regarding other positions.

Such an unintended consequence suggests that such role playing techniques may not simply be a weak version of authentic dissent. If they were, it might be worth the tradeoff in morale. However, the results indicate that the role-playing may be pernicious in some respects. Armed with the belief that they have considered alternatives by virtue of exposure to the DA, people may become even more convinced of the truth of their initial position—and possibly more rigid and resistant to reconsideration.

In this initial study (Nemeth *et al.*, 2001), only cognitive activity in the form of 'thought listing' was investigated (Petty and Cacioppo, 1984). Given that we are interested primarily in the quantity and quality of the solutions that are rendered, we designed the current study using quantity/quality of solutions as a dependent variable. However, we also manipulated information about the true position of the person asked to play the role of devil's advocate. In the initial study, the true position of the DA was 'unknown'. In the present study, information about the position of the devil's advocate was manipulated in an attempt to both clone authentic dissent more directly and to study the effect of varying attributions to the devil's advocate.

There were three devil's advocate conditions. In one, the person assigned the devil's advocate role was known to believe that position (consistent condition); in a second, she was known to believe in the majority position and *not* believe the assigned position (inconsistent condition); in the third, her true judgment was unknown. We also included a condition where the person was not assigned a role and thus, was presumed to argue her own viewpoint (authentic dissent condition) and a condition in which there was no dissent (control condition) where everyone agreed.

From an attributional perspective, one might well assume that the consistent DA condition would be similar to authentic dissent since the person is presumably arguing a position in which she believes but which happens to dissent from the majority viewpoint. In the other two DA conditions—when the DA is arguing a position she does not believe or when her position is unknown—the predictions would favor the superiority of authentic dissent. Both the ambiguous and inconsistent DA lack credibility, the former because one cannot assess the degree to which the person believes the position she is arguing and the latter because one knows she does not believe the position she is arguing. As found in numerous studies of minority influence, a person needs to be consistent over time and to appear to be confident of that position in order to effect influence (Moscovici, Lage, & Naffrechoux, 1969; Maass and Clark, 1984). The lack of position, either because it is not true to the person's beliefs or because it is ambiguous, makes it more difficult to confront a true difference of opinion. In the inconsistent condition, the DA is already in agreement despite her arguments to the contrary. Thus, people may be less likely to question their own position and to seriously consider alternatives.

The consistent DA condition poses more interesting theoretical issues. Here, the DA is almost identical to authentic dissent in that the person believes the position she is arguing, makes the exact same arguments and, thus, might be predicted to have equivalent effects on the stimulation of cognitive thought and originality. However, we consider the possibility and even hypothesize that authentic dissent will still be superior in stimulating quantity and quality of solutions.

One of the reasons is that defense of a dissenting position generally involves courage. People are quite aware of the likely dislike and rejection that ensues from such persistent dissent (Schachter, 1951). Thus, persistence in such a position creates the perception of a strong commitment and even of 'courage' (Nemeth and Chiles, 1998). Role-playing, even when the 'role' is consistent with one's own views, lessens the risk and should likely lessen such positive attributions. Thus, while both authentic dissent and consistent devil's advocacy provide information that she believes the position that she supports, only authentic dissent shows the consistency, confidence and commitment that make the minority influential. Only authentic dissent has taken the risks and, by implication, argued from a position of belief. The role-playing, even when consistent with one's position, may promote the perception that the arguments stem from an attempt to argue even more forcefully or consistently than

one believes. There is thus some ambiguity about just what the devil's advocate believes and the strength of that commitment.

Another reason for hypothesizing the potential advantages of authentic dissent to role-playing—even role-playing a position that she believes—is that the debate may be more vigorous and even more conflictful. When arguing with someone who authentically differs, the debate may be quite intense as people try to convince the other, defend their own position etc. When interacting with someone who is role-playing a decision, there is considerable uncertainty about the nature of his or her position and the meaning of the arguments since it is difficult to distinguish what is being 'role-played' rather than believed. While we thus hypothesize that authentic dissent will be superior to a consistent devil's advocate for generating quantity and quality of solutions, the data regarding these two conditions should prove to be of interest—especially since the two conditions appear quite similar at their face value.

Our predictions are:

- (1) The Three DA conditions:
 - (a) While it is statistically impossible to test no differences between the three DA conditions (Ambiguous, Consistent, Inconsistent), we do not advance any hypotheses regarding differences between these conditions on either the quantity or quality of solutions. Should differences emerge, we would predict that the Consistent Minority would be superior to the other forms of devil's advocate.
 - (b) No differences between the DA conditions are predicted or expected on perceptions of the dissenter or perceptions of the group process. Should differences emerge, we would expect that the Consistent DA would be seen in most favorable terms and that the group process would be seen as most stimulating and as generating the most conflict.
- (2) Given that the Authentic Minority and Consistent DA is the key contrast:
 - (a) The Authentic Minority condition will generate the most quality solutions. This condition will be superior to both the Consistent DA and the Control. The Consistent DA will be superior to the Control in quantity and quality of solutions.
 - (b) Both the Authentic Minority and the Consistent DA will be seen as more independent and less favorable than a person in the Control condition who did not dissent (that is, agreed with the majority). The authentic minority will be seen as more independent since she is not role-playing. She may be viewed less favorably than the Consistent DA.
 - (c) Both the Authentic Minority and the Consistent DA will foster perceptions that the group process was stimulating and conflictful, primarily because dissent is present. We would predict that the Authentic Minority will stimulate perceptions of more stimulation and conflict, however, since she is not role-playing.

METHOD

Participants

Female subjects were recruited from the Psychology Department subject pool where participation is part of a course requirement. The experimental requirement was that all individuals agree on the same judgment in order for dissent to be manipulated. Thirty-three groups of four Ss each were randomly

assigned to one of five conditions (a control condition, three forms of devil's advocate conditions, an authentic dissent condition). One group was dropped on suspicion that the dissenter was a confederate of the experiment. This resulted in 32 groups which consisted of six control groups, six DA 'ambiguous' groups, seven DA 'inconsistent' groups, seven DA 'consistent' groups and six authentic dissent groups. Given that one person in each of the experimental conditions was asked to play the 'dissenter', this resulted in 24 Ss in the control condition, 21 Ss in the DA inconsistent and consistent conditions and 18 Ss in the authentic dissent and DA ambiguous condition for a total of 102 Ss. Data from seven individuals were unavailable because of computer malfunctions and one person reported specific suspicions. This left a resulting pool of 94 participants. All were female undergraduates between the ages of 18 to 40.

Physical Setting

Each group of four participants was run in a laboratory room equipped with four IBM-compatible PCs separated by 3-foot tall partitions. The four workstations used a local area computer network with a fifth computer in an adjacent room acting as a file server. With the exception of the initial instructions and a small survey at the end of the experiment, the entire study was controlled by a program written in C++ programming language.

Case Materials

The task involved a vacation-scheduling problem, adapted and pre-tested to ensure that most individuals would deny a specific employee (Marge) her vacation. The vignette describes her as making a last-minute 'emergency' request for a week off which leaves the office shorthanded and puts into question who should delay his or her vacation. Her 'emergency' is not so compelling that people believe that any of three other people (Sam, Annie and George) should be denied their vacation time which had already been scheduled. Annie and George have the strongest reasons for being permitted to take their vacation as scheduled, followed by Sam and then Marge. Strong reasons included plans made well in advance, nonrefundable payments and special occasions with family members. Pre-testing indicated that 90% of Ss believe Marge should stay, 8% selected Sam and 2% selected George or Annie. Case materials are available on request.

Design and Procedure

Groups of four individuals were greeted with the instructions that this was study of computer-mediated communication and decision making. The four participants were then randomly assigned to a seat at one of the four computers. Unknown to the others, the person asked to play the 'dissenter' was seated at Station 2 and was always participant B. Her job was simply to type in remarks exactly as shown on a script at her table. Participants pressed the space bar on their computer to begin the experiment.

After an initial instruction screen, each participant read the case materials and indicated their choice of who should delay their vacation. With the exception of the DA ambiguous condition (where the actual positions are unknown), these answers were then displayed on the computer screen. All participants in the three DA conditions were then given the following instructions as follows: 'We are asking one person to play the role of "devil's advocate". In other words, we will ask him or her to take a position that differs from the others—regardless of his or her actual beliefs. Participant "B" has been

selected to take the role of devil's advocate'. In all conditions except the control, Person 'B' argued that Sam should remain. All arguments were the same, taken from a written script. The procedure by condition is as follows:

- Authentic Minority: Initial judgments show that Person B selected 'Sam'; no role-playing instructions.
- DA ambiguous: No feedback on initial judgments; role playing instructions given.
- DA consistent: Initial judgments show that Person B selected 'Sam'; role-playing instructions given.
- DA inconsistent: Initial judgments show that Person B selected 'Marge'; role-playing instructions given.
- Control: Initial judgments show that everyone, including Person B, selected 'Marge'; no role-playing instructions given.

The operational definition of these conditions is basically that the 'authentic' minority is seen as someone who initially takes a minority view of 'Sam' and argues this. In all three DA conditions, Person B is specifically asked to defend the minority position but this position is either consistent with the person's initial judgment (consistent condition), inconsistent with that initial judgment (inconsistent condition) or unknown with respect to the person's initial judgment (ambiguous). All arguments are identical defending 'Sam' as the choice in the experimental conditions. There are no scripts for the Control condition; four people initially agree and discuss it as in the other conditions.

During the discussion phase, participants had eight rounds to come to an agreement. They were asked to wait for the prompt before typing in their comments and position. Each person typed in her comments in sequence and all the comments appeared as they occurred on each person's screen. Person 'B' (in all conditions except the Control) typed in comments from a prewritten script arguing for 'Sam' as the choice. At the end of eight rounds, participants gave a final decision about who should be denied vacation at this time. After 'discussion', the computer asked participants to give as many solutions as possible that would solve this particular problem. They also answered a short questionnaire assessing their feeling about each group member and their feeling about the group interaction. The participants were then fully debriefed and dismissed.

RESULTS

The experiment consisted of five conditions, an authentic minority condition, three devil's advocate (DA) conditions and a control. Dependent measures were in three categories: (1) reactions to the dissenter, (2) quantity and quality of solutions and (3) morale and perceptions of group process. The first set of hypotheses did not predict any differences between the three DA conditions. The second set of hypotheses stems from the key contrast between the Authentic Minority and Consistent DA whose behavior and position was identical; only the role-playing instructions differentiated the conditions. The hypotheses are that the Authentic Minority condition would be superior both to the Control and to the DA conditions. Thus, Analyses of Variance for these comparisons were calculated.

Differences between the three DA Conditions

Our predictions were that there would be no significant differences among the three devil's advocate conditions. A three level Analysis of Variance (consistent DA, inconsistent DA, ambiguous DA) was

calculated for all dependent variables. No significant differences were found for any variable, the p -value exceeding 0.15 for every variable.

We selected the Consistent Minority condition for comparisons with the Authentic Minority and Control as it is the key contrast. It is representative of a devil's advocate condition; it is also the most theoretically challenging comparison with the Authentic Minority. Thus, one-way three-level ANOVAs (Authentic Minority, Consistent DA, Control) were calculated as well as planned contrasts between Authentic Minority and Consistent DA and between each of these two conditions with the Control.

Reactions to the Dissenter

The nine Likert scales assessing perceptions of the dissenter were entered in a principal components analysis and subjected to varimax rotation. Two factors, accounting for 49.6% and 17.1% of shared variance respectively, had eigen values greater than 1 and were scored for further analysis.

The first factor was termed 'likability'; this factor loaded most highly on items assessing attributions of 'subject B' (the dissenter in all but control conditions) as 'intelligent, likable, objective, leader and a team player' (Cronbach's $\alpha = 0.84$). Planned contrasts were calculated for the Authentic Minority, the Consistent DA and the Control. In the Control condition, Person 'B' did not dissent.

The three-way ANOVA revealed a significant difference between conditions ($F(2, 45) = 3.27$, $p < 0.05$). Planned contrasts revealed that the Consistent DA was disliked more than the Control ($F(1, 45) = 6.48$, $p < 0.05$). The Authentic Minority was marginally disliked more than the Control ($F(1, 45) = 2.76$, NS). The Authentic Minority and Consistent DA did not significantly differ on likability ($F(1, 45) = 0.86$, NS).

The second factor was termed 'independence' and loaded on attributions of courageousness and independence (Cronbach's $\alpha = 0.84$). The three-level ANOVA on Authentic Minority versus Consistent DA versus Control was significant ($F(2, 45) = 6.20$, $p < 0.01$). Planned contrasts revealed that the non-dissenter in the Control condition was perceived as less independent than the Authentic Minority dissenter ($F(1, 45) = 9.05$, $p < 0.01$) and as less independent than the Consistent DA ($F(1, 45) = 10.40$, $p < 0.01$). There were no differences between the Authentic Minority and the consistent DA on independence ($F(1, 45) = 0.04$, NS) (see Table 1).

Quantity and Quality of Solutions

The three-level ANOVA (Authentic Minority, Consistent DA, Control) was significant for the number of solutions that were found ($F(2, 54) = 3.96$, $p < 0.02$). Planned contrasts revealed that the Authentic Minority condition generated the most solutions. They had more solutions than the Consistent DA condition ($F(1, 54) = 6.13$, $p < 0.02$) or the Control condition ($F(1, 54) = 6.05$, $p < 0.02$). The Consistent DA condition and the Control did not significantly differ ($F(1, 54) = 0.00$, NS).

One measure of solution quality was determined by two raters who subjectively judged the quality of the set of solutions reached by a given participant. These ratings were significantly correlated, $r(87) = 0.57$ ($\text{Alpha} = 0.63$) and averaged. The three-level ANOVA (Authentic Minority, Consistent DA, Control) was not statistically significant ($F(2, 52) = 1.28$, NS).

Since the number of solutions and quality of the set of solutions was significantly correlated, $r(87) = 0.57$ ($\text{Alpha} = 0.69$) a measure was created consisting of these two dependent measures by

Table 1. Perceptions of the dissenter and group discussion

	Authentic minority	DA consistent	Control
I Dissenter:			
Favorability	0.23 _{ab}	0.04 _a	0.76 _b
N	17	18	13
SD	0.83	1.02	0.65
Independence	0.21 _a	0.26 _a	-0.71 _b
N	17	18	13
SD	0.65	0.84	1.00
II Group discussion:			
Harmonious	-0.42 _a	-0.07 _a	0.49 _b
N	17	18	19
SD	1.09	0.94	0.96
Stimulating	0.10 _a	0.37 _a	-0.56 _b
N	17	18	19
SD	0.77	0.89	1.19
Conflict	0.27 _a	0.17 _a	-0.66 _b
N	17	18	19
SD	0.72	1.00	1.21

Note: Here and in Tables 2 and 3 Subscripts in common indicate that the differences are not significant at the 0.05 level.

summing their standardized scores. We believe this measure best taps a creative performance measure since it involves both number and quality of solutions generated.

The three-level ANOVA (Authentic Minority, Consistent DA, Control) was marginally significant ($F(2, 52) = 2.88, p < 0.06$). Planned contrasts revealed that the Authentic Minority condition generated more good solutions than did the Consistent DA condition ($F(1, 52) = 4.84, p < 0.02$) or the Control ($F(1, 52) = 3.91, p < 0.05$). The Consistent DA condition did not differ from the Control on this factor of quantity and quality of solution ($F(1, 52) = 0.03, NS$) (see Table 2).

Morale and Perceptions of Group Process

Mood

The items involving mood were entered in a principal components analysis (varimax rotation), and two factors emerged with eigen values greater than one. These factors were interpreted as 'angry/frustrated' (accounting for 31.6% of shared variance), and 'excited/stimulated' (accounting for 26% of shared variance). The first dependent measure termed 'anger' loaded primarily on self-rated anger and frustration (Cronbach's alpha = 0.79) and the second measure termed 'excited' loaded primarily on self-rated excitement and stimulation (Cronbach's alpha = 0.63)

The three-level ANOVA (Authentic Minority, Consistent DA, Control) was significant on the factor of 'angry' ($F(2, 51) = 4.49, p < 0.03$). Planned contrasts revealed that the authentic minority condition generated more anger than the Control ($F(1, 51) \sim 6.81, p < 0.01$), the Consistent DA generated more anger than the Control ($F(1, 51) = 4.27, p < 0.03$) and there were no differences between the Authentic Minority and the Consistent DA with regard to anger ($F(1, 51) = 0.07, NS$).

Table 2. Quantity and quality of solutions

	Authentic minority	DA consistent	Control
Number of Solutions	2.76 _a	1.86 _b	1.84 _b
N	17	21	19
SD	1.15	1.24	0.96
Quality Solutions	2.71 _a	2.33 _a	2.37 _a
N	17	20	18
SD	0.62	0.72	0.95
Factor: number/qual. (z scores)	0.92 _a	-0.32 _b	-0.22 _b
N	17	20	18
SD	1.53	1.84	1.70

Table 3. Mood of participants

	Authentic Minority	Consistent DA	Control
Angry	9.06 _a	7.61 _a	4.89 _b
N	17	18	19
SD	5.66	4.38	3.54
Stimulated	10.76 _a	11.83 _a	7.42 _b
N	17	18	19
SD	4.80	4.26	4.88

For excitement, the three-level ANOVA comparing Authentic Minority with the Consistent DA with the Control was significant ($F(2, 51) = 4.49, p < 0.02$). Planned contrasts showed that the Authentic Minority created more excitement than the Control ($F(1, 51) = 4.58, p < 0.02$). The Consistent DA created more excitement than the Control ($F(1, 51) = 8.22, p < 0.01$). The two experimental conditions did not differ from each other ($F(1, 51) = 0.46, NS$) (see Table 3).

Group Process

Regarding perceptions of group process, a third principal components analysis revealed three factors: 'harmony', 'stimulation' and 'group conflict'. Harmony consisted of perceptions that the group discussion was harmonious, productive and fair (accounting for 30.4% of shared variance). These scores were correlated and averaged (Cronbach's alpha = 0.74). The one-way three-level ANOVA was significant on harmony ($F(2, 51) = 3.92, p < 0.03$). The control was rated as more harmonious than the Authentic Minority condition ($F(1, 51) = 7.63, p < 0.01$) and as more harmonious than the Consistent DA condition ($F(1, 51) = 2.96, p < 0.05$). The Authentic Minority and the Consistent DA conditions did not significantly differ on perceptions of harmony ($F(1, 51) = 1.10, NS$).

The factor that the group discussion was 'stimulating' consisted of items that it was interesting, stimulating and creative (Cronbach's alpha = 0.85) and accounted for 24.5% of shared variance. The three-level ANOVA was significant ($F(2, 51) = 4.44, p < 0.02$). The Authentic Minority condition was

perceived as more stimulating than the Control ($F(1, 51) = 4.14, p < 0.01$); the Consistent DA condition was seen as more stimulating than the Control ($F(1, 51) = 8.33, p < 0.01$). The Authentic Minority and the Consistent DA condition did not differ on perceptions of the group process being stimulating ($F(1, 51) = 0.64, NS$).

The third factor, termed group conflict, consisted of items that the group discussion was argumentative, hostile and one-sided (Cronbach alpha = 0.75) and accounted for 12.3% of shared variance. The three-level ANOVA was significant ($F(2, 51) = 4.38, p < 0.01$). The authentic minority stimulated perceptions of more group conflict than the Control ($F(1, 51) = 6.77, p < 0.01$); the consistent DA stimulated perceptions of more group conflict than the Control ($F(1, 51) = 6.17, p < 0.01$). The two experimental conditions (Authentic Minority and Consistent DA) did not differ statistically ($F(1, 51) = 0.02, NS$) on group conflict.

DISCUSSION

We started with the supposition that the three Devils' advocate conditions would not differ significantly on the number of quality solutions generated nor on perceptions of the dissenter and group process. However, should such differences emerge, we hypothesized the superiority of the Consistent DA since this person, like the Authentic Minority, believed the position she argued though was asked to role-play it. Results indicated that the three DA conditions did not differ on any item, whether it be perceptions of the dissenter or group process or number and quality of solutions generated. All p -values exceeded 0.15.

The most important predicted planned contrasts involved the Consistent DA condition versus the Authentic Minority Condition versus the Control. The Consistent DA condition is representative of the DA conditions; further, it is the most challenging for predicted differences with the Authentic Minority.

Results indicated a number of similarities between Authentic Dissent and Consistent DA especially in contrast with the Control where Person B did not dissent but, rather, agreed with the majority. Both the authentic minority and the consistent DA were less liked and perceived as more independent than the Control. They did not differ significantly from one another on these measures. Both the Authentic Minority and the Consistent DA generated perceptions of the group as lacking harmony but as stimulating and full of conflict relative to the Control. Again, while both generated these perceptions, they did not differ significantly from one another. They both made people feel more angry and excited than the Control but did not differ significantly from one another. However, where they differed was on the important issue of quantity and quality of solutions generated as a result of the interaction.

On quantity of solutions generated, the Authentic Minority stimulated more solutions than did the Consistent DA or the Control. In fact, the Consistent DA did not stimulate more solutions; this condition did not differ significantly from the Control. On quality *per se*, the results do not indicate significant differences between any of these three conditions. However, since quantity and rated quality correlated significantly, the two measures were combined into a factor of number of quality solutions. The Authentic Minority stimulated more quality solutions than did the Consistent DA or the Control. The consistent DA did not generate more quality solutions than the Control.

The findings appear quite surprising at one level. Both the Consistent DA and the Authentic minority indicated a belief in the same position and this position was in disagreement with the majority. Both maintained their position over time with exactly the same arguments. The one difference is that the Consistent DA was asked to role-play that position in the role of a devil's advocate. That difference resulted not in very different perceptions of the dissenter, not in very

different moods or morale and not in very different perceptions of the group process. Both stimulated dislike, perceptions of conflict and stimulation both at the individual level and in perceptions of the group process. However, when it came down to stimulating thought that resulted in creative problem solving (many high-quality solutions to the problem), only the Authentic minority stimulated such creativity. The Authentic minority not only was superior to the Consistent DA; the Consistent DA did not stimulate more quality solutions than the Control.

In considering the perceptions of the dissenter, the results confirm past research in that a dissenter, be it the Consistent DA or the Authentic minority, engenders dislike (Schachter, 1951). The results between the two forms of dissent, however, are somewhat surprising in that one would expect that the Consistent DA would be better liked (less disliked) since she would not be held accountable for persisting in her position; she was instructed to do so. Contrary to such expectations, the Authentic Minority was viewed as favorably as the Consistent DA. To some extent, such findings are consistent with previous work on minority influence. Work by Nemeth and Chiles (1988), for example, found that the persistent dissenter, while not liked, was admired and respected. Such positive perceptions suggest that people value a person who maintains her position, especially in the face of risks associated with non-conformity. In this context, it is the authentic minority who takes risks; the Consistent DA is protected by role-playing instructions.

While one would expect that the role-playing Consistent DA would enhance perceptions of harmony in the group and less conflict, the findings indicate that both dissenting conditions (Authentic and Consistent DA) were seen as having more conflict and less harmony than the Control where people agreed. However, the predicted advantages to harmony when the dissent was role played as a devil's advocate, did not appear.

Both the role-playing Consistent DA and the Authentic Minority generated feelings of excitement and stimulation relative to the Control. However, such perceptions did not necessarily translate into quantity and quality of solutions. This is perhaps the most important finding of this study: Only the authentic minority stimulated more solutions and more quality solutions than the Control. The Consistent DA, while creating perceptions of stimulation, did not effect more solutions or more quality solutions than the Control. Their solution production was significantly less than the Authentic Minority and equivalent to the Control.

The lack of correspondence between the perception of stimulation and actually producing creative solutions in the Consistent DA condition has a parallel in the brainstorming literature. People in brainstorming consistently report that they are more creative than when brainstorming alone; yet, such perceptions are illusory in that the solutions produced are not more numerous nor of higher quality (Paulus, Dzindolet, Poletes, & Camacho, 1993; Nemeth *et al.*, 2001). Thus, it becomes important to study not only perceptions of stimulation and excitement but also actual production of creative solutions.

Though predicted, the clear superiority of Authentic Dissent relative to a Consistent DA may appear surprising. When they hold the same position and when they give the same arguments, one might expect their influence to be similar if not identical. We considered the possibility that the Consistent DA might stimulate more creative problem solving than the Control. Had this occurred and had it been coupled with more harmony and less dislike to the dissenter, there might have been advantages over the Authentic Minority. However, previous work with minority influence which documents the importance of consistency and confidence in the face of the risk of rejection (Maass and Clark, 1984; Wood Lundgren, Ouellette, Busceme, & Blackstone, 1994) led us to hypothesize that techniques, e.g. role-playing, may not mimic the stimulating effects of dissent.

As we speculate on some of the reasons for the superiority of authentic dissent relative to a close clone involving role-playing, part of the reason is the courage involved in maintaining a position that is in disagreement with the majority. The Consistent DA, while arguing a position in which she presumably believes, does not have the same risks since she has been instructed to maintain such a

position. From the point of view of the perceiver, this may well lead to an ambiguity regarding how committed she is to her position. Since she is role playing, it is possible that she is arguing more consistently and confidently than she actually believes and feels. This could well lessen her influence and ability to stimulate divergent thinking (Nemeth, 1986).

A second possibility, worthy of future research, is that people may argue differently with a person who authentically dissents rather than one who is role-playing her position. For one thing, one cannot expect to 'persuade' a person who is role-playing as they cannot change their position. Additionally, one is not having an authentic debate. The potential 'give and take', of arguments and counter-arguments both expressed and unexpressed would seem to be more difficult when one is interacting with a devil's advocate. The level of engagement may be less. It is even possible that one starts to think of the interaction as a 'debate' rather than as a discussion aimed at elucidating the best position. In other words, one might start to role-play in response to the role-playing devil's advocate. These are clearly speculative considerations and will require some subtlety to code and disentangle complex aspects of interacting individuals.

It remains of interest that such role-playing techniques, while appearing to be identical to authentic dissent on the surface, are in fact not identical psychologically. As we learned from the early studies of minority influence, attempts to create harmony by compromise, for example, render the minority ineffective as the perception that the minority actually believes the position and is willing to persist in that position appears to be highly important (Moscovici *et al.*, 1969; Nemeth and Brilmayer, 1987). Consistent with such findings are the results from the present study which suggest that the ability of dissent to stimulate creative thoughts and solutions do not lie in simple perceptions of conflict, argumentation and a lack of harmony, which all of the dissent conditions create. It may well depend on the nature of that conflict—on the perception that the person is courageous in persisting in her own position—and it may lie in the nature of the debate. Perhaps the lesson is that the stimulation may require a debate that is not easily cloned by role-playing techniques or by variations of 'pretend' dissent. It may be that we need to welcome authentic differences.

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