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Better than Individuals?

The Potential Benefits of Dissent and Diversity for Group Creativity

Groups are notoriously fallible when it comes to decision making and productivity (Hinsz, 1990; McGrath, 1984; Shepperd, 1993). Rather than profit from the resources that are available from each individual, groups often make poor decisions, some resulting in "fiascoes" (Janis, 1982). When it comes to creativity, the available literature repeatedly demonstrates that groups rarely achieve the level of the sum of the individuals (McGrath, 1984). The question, of course, is why groups are so suboptimal in performance. Is it the nature of groups to "dumb down" individual judgment, or is it the result of a particular set of processes that often occur in groups? Several researchers have argued the latter (e.g., Hackman & Morris, 1975) and have pointed to the importance of group strategies, member efforts, and the level and distribution of task-relevant skills. Others, reviewed below, focus on the influence processes that occur within groups and their importance for the quality of decision making and performance.

Much research documents that one of the culprits for poor group decision making is the desire for consensus. This desire leads to premature closure, such as that evidenced by research on groupthink. It leads to agreement with majority views, right or wrong, and it leads to extremism on issues where there is fundamental agreement. Attempts to raise the level of group creativity and decision making often focus on eliminating some of the hindrances or obstacles. The goal is to raise the level of group functioning to that of the sum of the individuals that compose the group. We argue, however, that groups can actually perform

better than the sum of their individuals, and we emphasize the role of dissent. Dissent, as we document, can liberate individuals from conformity pressures and, more important, can stimulate thought that considers more information and more options and culminates in better decision making and productivity. The conflict generated by dissent, however, is not without costs, and we attempt to find ways to profit from dissent while maintaining unity and morale.

The Strain for Consensus: Groupthink

Part of the reason for the suboptimal performance of groups is that people strongly desire consensus, even straining for consensus, as argued by Janis (1982), under the rubric of groupthink. This popular and catchy term was applied to Janis's analysis of foreign policy decisions that were truly disastrous. The Bay of Pigs Invasion is one such example. In 1961 President John Kennedy and his advisors tried to overthrow Fidel Castro with an invasion of Cuba by 1,400 CIA-trained Cuban exiles. The result was that nearly all were captured or killed, the United States was humiliated, and Cuba aligned itself even closer with the USSR. By all accounts, this was a truly poor decision.

In analyzing such fiascoes, Janis (1982) theorized that failure was not due to the stupidity of the participants. After all, in the Bay of Pigs decision, the group was composed of individuals such as Arthur Schlesinger (a noted Harvard historian), Robert McNamara (Secretary of Defense and former President of the Ford Motor Co.), Dean Rusk (Secretary of State and former head of the Rockefeller Foundation), and McGeorge Bundy (Dean of Harvard Letters and Science). Rather, he argued that groupthink arises from a situation marked by homogeneity of its members, strong and directed leadership, group isolation, and high cohesion. When people are similar, close-knit, isolated from contrary views, and have a strong leader who expresses a clear preference, groups strain to find a consensus around the preferred position.

Some by-products of such a tendency are that individuals are reluctant to voice dissent, to examine the negative aspects of the preferred position, to seriously consider alternatives, and to systematically develop contingency plans. The reluctance to voice dissent, even when such thoughts are contemplated, arises not only from self-censorship but also from pressures to conformity. People are made to feel that dissent is an obstacle to achieving a goal and a sign of disloyalty. One should "get on board" (see, generally, Janis, 1982; Esser & Lindoerfer, 1989; Moorhead, Ference, & Neck, 1991).

Such a description is not unlike that demonstrated by cults. There, too, cohesion, strong and directed leadership, and isolation are characteristics of such groups that achieve loyalty and adherence to positions—even those that result in members' suicide. Members fear the expression of dissent and the group quickly and consistently punishes its expression (Conway & Siegelman, 1979; Ornstein, 1991).

Such reluctance to voice dissent and the strong pressure for consensus, perhaps exacerbated in the situations described above, are relatively common phenomena and can perhaps be understood in the context of experimental studies of conformity. In those studies, an individual is faced with a majority of others who offer a judgment differing from that of the individual. Literally hundreds of studies have documented that consensus is often achieved on the position taken by the majority. People often agree with the majority, even when they are wrong (Allen & Levine, 1969; Kiesler & Kiesler, 1969).

This is illustrated in the classic study on conformity by Asch (1956), in which people simply judged which of three lines was equal in length to a standard. Alone, people judged the stimuli correctly; it was an easy and relatively unambiguous task. When faced with a majority who agreed on a different (and erroneous) judgment, many individuals abdicated the information from their own senses and agreed with the incorrect majority. On average, 35% of the responses were in agreement with the erroneous majority, and nearly everyone agreed with the incorrect majority at least once. In naturalistic studies, the power of the majority is even more apparent. In a study by Kalven and Zeisel (1966) on decision making by actual juries, the vast majority of verdicts could be predicted by the initial ballot. The position favored by a majority of 7 to 11 jurors was the final verdict nearly 90% of the time. So why does the majority "win" even when they are wrong?

The reluctance to remain independent, to say what one "sees," appears to occur for two reasons. First, faced with a unanimous majority that differs from one's own judgment, one often assumes that the majority must be correct; error must lie with the minority position. Second, people fear the rejection and ridicule they believe will ensue from maintaining a minority position (Deutsch & Gerard, 1955). They often state that they fear "sticking out like a sore thumb" or being ridiculed. Such concerns are also voiced in organizations. For example, Ryan and Oestreich (1991) interviewed 260 employees from 22 different organizations. More than 70% expressed fear about speaking up—at least when it came to problems at work. Their stated reasons, much like the subjects in the experimental studies, were that negative repercussions were likely to ensue and that voicing their concerns would make little, if any, difference.

Although one might wish that such fears were ill-founded, the available evidence suggests that people *are* punished for dissent. In experimental studies, people who maintain a minority position are targets of communication aimed at changing their minds. If unsuccessful, they are rejected and disliked (Nemeth & Wachtler, 1983; Schachter, 1951). Thus, we see that there is a good basis for concern over the voicing of a dissenting minority opinion. This becomes exacerbated when one considers dissenting with one's superior. Some researchers (Summerfield, 1990) estimate that at least 7 out of 10 people in American busi-

ness remain silent when their opinions are at odds with their superior's. Even when they know better, they permit their boss to make mistakes.

Such fears of rejection and reluctance to voice dissent are evident even in the groupthink examples given above. Following the Bay of Pigs Cabinet-level decision, Schlesinger (1972) bitterly reproached himself for "having kept so silent during those crucial decisions" but still felt that "a course of objection would have accomplished little save to gain me a name as a nuisance" (quoted in Janis, 1982, p. 39). Thus, one sees that individuals at even the highest level of power are reluctant to be in a minority.

The fact that people share such views exacerbates the problem. In organizational settings, for example, there is considerable evidence of a shared perception that expressing dissent is either futile or dangerous This has been termed "organizational silence" (Morrison & Milliken, 2000) and is an illustration of a more general phenomenon: that shared beliefs extremize individual judgments and concerns. This adds to the individual's tendency to remain silent about problems or issues encountered at work.

The Strain for Consensus: Polarization

The notion that shared beliefs exacerbate perceptions and behaviors is well documented in the social psychological literature under the term *polarization.* Even without the drama of a directed leader or crisis, as found in the groupthink work, there is considerable evidence that discussion among like-minded people can extremize their views and enhance their confidence in those views (Fraser, 1971; Moscovici & Zavalloni, 1969). The general phenomenon is as follows.

When individuals favor a particular side of the issue but differ in their specific judgments, discussion often leads to consensus, but the consensus position is more extreme than the average of the individual judgments. Further, the individuals themselves become more extreme and more confident in their position. Thus, if the individuals are essentially risky in a given situation, the group decision (and their own subsequent individual judgments) will be more risky after group deliberation. If they start out cautious, the decision and individual judgments will be more cautious. If they are anti-American, they will become more anti-American; if they are pro–de Gaulle, they become more so; if they believe a person is guilty of a crime, they become more convinced after discussion with like-minded people. The phenomenon is powerful and pervasive over many situations (see, generally, Moscovici & Doise, 1974; Myers & Bishop, 1970).

The elements that appear to create polarization are (1) a normative quality to the issue such that people favor a given pole or direction; (2) differences among group members in their specific judgments; and (3) discussion among these group members. Under such circumstances, the findings are consistent and replicable across a broad range of judgments. The group and, subse-

quently, the individuals become more extreme in the direction of the desired pole (Isenberg, 1986; Moscovici & Doise, 1974; Myers & Lamm, 1976).

Such a phenomenon helps to explain why homogeneity of members coupled with high levels of interaction and intolerance of dissent are successful in maintaining and even exacerbating the beliefs held in corporate culture or cults (C. O'Reilly, 1989; C. O'Reilly & Chatman, 1996). In these settings, interactions with insiders who hold similar beliefs are encouraged and, in some cases, required. This, coupled with an intolerance of dissent, leads to more extreme views and more confidence in those views.

The Problem with Majorities

Majority Influence—Whether to Truth or to Error

As demonstrated above, majority influence is strong and pervasive, even on issues that are factual and where there is a clear correct answer. Ordinarily, the majority position and reality coincide, which is one reason we assume—perhaps all too readily—that truth must lie with the majority judgment. Such persuasive power is not only evident in face-to-face groups, such as those in the experiments or in natural juries, but is widely used as a technique to induce desired behavior.

The ploy that "everyone is doing it" or that "everyone desires it" is a favorite technique of many advertisers and even public service messages. Rhoads and Cialdini (2002) point out the pervasiveness of such tactics, which range from information that a product is the "largest selling" or "fastest growing" to the "salting" of tip jars with dollar bills to give the impression that previous customers tipped with paper money rather than coins. Street musicians and panhandlers apparently know this technique as well. However, it can also backfire. As Rhoads and Cialdini point out, the high incidence of suicide and drug use sends the message that many people are participating in these undesirable behaviors and may unintentionally influence others to mimic them.

The real difficulty with majority views, especially when they are unanimous, is that people move to the majority position whether it is right or wrong (Nemeth & Wachtler, 1983). Thus, the power of the majority, which has even been termed "the tyranny of the majority" (Mill, 1859/1979), is so strong that it induces agreement often without reflection or consideration of the issue. In Janis's (1982) work, for example, the strain for consensus produced defective decision-making processes, among which were an incomplete survey of alternatives and objectives, poor information search, lack of scrutiny of the preferred alternative, and a failure to work out contingency plans. In those decision-making groups and in experimental studies, people are reluctant to voice dissent even if they recognize problems or consider alternatives. Perhaps more important, they are even less able to think about or consider alternatives.

Majorities Induce Convergent Thinking

Although adoption of a majority position that is incorrect is an undesirable outcome, there is a more subtle and possibly insidious aspect of majority views. Faced with a unanimous majority, people think from the perspective of the majority to the exclusion of other considerations. In other words, when one is faced with a majority of individuals who agree with each other on a position that differs from one's own, one not only doubts one's own position and feels pressure to agree with the majority, but, in a kind of tunnel vision, one thinks about the issue almost solely from the perspective of the majority (Nemeth, 1986).

The tendency to focus on the issue almost solely from the perspective of the majority arises, in part, from the stress of being in the minority. Individuals faced with a disagreeing majority report a great deal of stress (Nemeth & Wachtler, 1983). Stress has been found to affect attention: there is a concentration on the focal and not on peripheral stimuli, and there is a narrowing of the range of alternatives considered (Easterbrook, 1959). However, majorities do not induce just any kind of focus; they stimulate a focus that takes the majority perspective. The reason for this appears to lie in the fact that people try to understand why the majority takes its position and, further, they are motivated to find that perspective acceptable because that will permit agreement (Nemeth, 1995).

As a demonstration of this phenomenon, a study by Nemeth and Kwan (1987) gave individuals in groups of four a series of 5-letter strings (e.g., tMARe) and asked them to name the first 3-letter word they noticed. Under short exposures, all individuals named the word in capital letters from left to right (*mar* in the example). After 5 such letter strings, they were given feedback on the judgments of the four individuals. In the majority condition, they were led to believe that 3 of the 4 individuals first noticed the word formed by the backward sequencing of the capital letters (e.g., *ram*). Thus, they each believed that the other three individuals in their group agreed on a position different from their own and that this position was achieved by a backward sequencing of the capital letters. This was consistent over the 5-letter strings. Subsequently, they were given a new series of letter strings and were asked to name *all* the words they could form from the letters. They were given 15 seconds for each letter string. A control group was given no feedback on the responses of the individuals.

Comparing the majority condition and the control, there were no significant differences in the number of words they were able to find. However, the way they found the words differed considerably. People in the majority condition used the perspective of the majority to the detriment of other strategies. Consider the ways in which words can be formed: (1) one can use the letters from left to right (forward sequencing; in the example "tMARe," such words might be *tar*, *mar*, and *are*); (2) one can use the letters from right to left, as did the majority (backward sequencing; *rat*, *ram* and *eat*); (3) one can form words using the letters in some combination of forward and backward sequencing (mixed sequencing; *mat*, *art*,

ear or *tear*). Compared to the control, those in the majority condition found more words using the backward sequencing of letters and fewer words using the forward or mixed sequencing. In other words, they adopted the perspective of the majority to the exclusion of other considerations.

Such a tendency for majorities to stimulate thinking that focuses on the majority perspective is evident in other studies as well. In an embedded figures task (Nemeth & Wachtler, 1983), for example, individuals were asked to name which of 6 comparison figures contained an embedded figure. When a majority made its selection, people adopted that position; they were not able to see the embedded figure not named by the majority.

Convergent Thought Can Be Adaptive

In general, convergent thinking is maladaptive in that alternatives are not fully considered; however, there can be positive aspects of such cognitive processes. In more naturalistic settings, for example, convergent thinking from the majority perspective may lead to a clear following of norms and agreement with goals (C. O'Reilly 1989). It is likely to result in efficiency and in the attainment of the agreed-upon goals (Collins & Porras, 1994). Further, such focus may aid groups in evaluating alternative perspectives and eliminating poor alternatives (Larey & Paulus, 1999).

One can see the operation of such advantages in an experimental study (Nemeth, Mosier, & Chiles, 1992). Whereas performance on most tasks is enhanced by a consideration of alternatives or multiple perspectives, this study used a task where convergent thinking is adaptive. This was done partly to demonstrate the generality of the phenomenon and partly to show that the consequences for performance of convergent thought depends on the requirements of the situation.

The experiment utilized the Stroop task (Stroop, 1935), one of the few tasks where convergent thought can be adaptive. Here, the ability to focus from one perspective while ignoring alternatives is advantageous, provided the focus is on the appropriate dimension. In this task, individuals are shown a series of color words (e.g., black, blue, green, red). However, the words are printed in an ink of a different color. For example, the word *green* might appear in red ink; the word *yellow* might appear in blue ink. The task is to read as quickly and accurately as possible the ink color (red and blue in the examples). The difficulty is that one tends to say the color word (*green* and yellow in the examples). In such a task, convergent thinking is adaptive provided one can focus on ink color; performance is improved if one can concentrate on the color of ink and ignore the color word. Conversely, concentration on the color word to the exclusion of the ink color is maladaptive.

In this study, individuals in groups of 4 were shown a slide on which were printed two color words. One was printed in an ink that was consistent with the word (e.g., the word *red* printed in red ink); the second was printed in an ink that was inconsistent with its word (e.g., the word *yellow* printed in green

ink). Under short exposures, the first color noticed by all individuals was red. Feedback, however, indicated that 3 of the 4 individuals first noticed a different color. In one condition, this was the color word announced by the letters (*yellow* in the example). In a second condition, this was the ink color (green in the example). Subsequently, they were tested on the Stroop task. Individuals tried to read the color of ink as quickly and accurately as possible. As theorized, performance was greatly improved when individuals were exposed to a majority who concentrated on the ink color in the first session. Performance was greatly diminished when they were exposed to a majority who concentrated on the color word in the first session. In other words, they took the perspective of the majority in both cases. When that perspective was appropriate, performance was enhanced; when inappropriate, performance was diminished.

Consensus and Creativity

Convergent thought may have a place in efficiency, but it is unlikely to aid the generation of creative ideas (Hackman, 1990; Nemeth, 1997). Creativity generally requires novelty, a uniqueness or unusualness to the idea, plus appropriateness to solving a given problem (Amabile, 1983; Barron, 1968).[1] Thus, there is originality and a product: a solution.

Minimally, creativity, at least at the level of idea generation, tends to include flexibility, a term more identified with divergent than convergent thought (Guilford, 1950). Flexibility involves thinking in different conceptual categories. As an illustration, people who generate ideas for uses of a brick might come up building a home, building a road, and building a factory. These are three different ideas but all representing a given conceptual category. This is evidence of relatively convergent thinking. Someone else might mention building a house, using the brick as a missile, and using it as a doorstop. Again there are three ideas but they represent different categories of thought. This is illustrative of divergent thinking.

As one tries to understand why groups are less creative than the sum of their individuals, the same considerations of cohesion, fear of dissent, and convergent thinking appear to be relevant. Hackman and Morris (1975), for example, argue that an important reason groups fail to outperform individuals is their premature movement to consensus, with dissenting opinions being suppressed or dismissed. In studies of brainstorming, there is ample evidence that interacting groups produce about half as many ideas as do the same number of individuals acting alone (Diehl & Stroebe, 1991; Larey & Paulus, 1999). One of the reasons for such lowered creativity appears to be a fear of evaluation. People worry that others will judge them negatively.

In a study by Camacho and Paulus (1995), such fear of evaluation was studied as an individual difference variable. Groups were composed either of individuals who were highly concerned about how others perceive and evaluate them or who had very low concern about such perceptions and evaluations. The re-

searchers found that, for individual performance, the two types of individuals did not differ. As a group, however, those highly concerned about evaluation performed much more poorly than did those with low concern. The suggestion is that such concern leads to "social or cognitive inhibition," which would be one reason for low creativity in groups.

Reduced creativity in groups is also a by-product of the desire for consensus. The desire for consensus is not just operative in premature closure or movement to the majority; even the discussion is altered. Substantial evidence exists that individuals in groups tend to share and discuss ideas that they already have in common (Larey & Paulus, 1999; Stewart & Stasser, 1995;). The noncommon ideas are less likely to find expression and, thus, do not provide a basis for consideration of alternative or new ideas (for other lines of reasoning, see Nijstad, Diehl, & Stroebe, this volume; Paulus & Brown, this volume).

Still another reason for reduced creativity in groups is the convergent thinking stimulated by majorities. There is evidence, for example, that majorities stimulate less novel or original thinking. In one such study, Nemeth and Kwan (1985) showed individuals a series of blue slides and asked them to name the color they saw as well as indicate the perceived brightness. In one condition, they were exposed to a majority who agreed that the stimuli were all "green." In the control condition, they were not exposed to any judgments of others. Subsequent to this situation, they gave word associations to the words *blue* and *green* (7 associations to each word). Compared to a control group, those exposed to a unanimous (but erroneous) majority gave quite different associations.

Associations to a given word can be scaled in terms of their likelihood. In other words, a large percentage of people will respond to the word *blue* with "sky" and will respond to *green* with the association "grass." These are very common associations in that there is a high probability of their occurrence. Less common are associations to *blue* such as "jazz" and "jeans." The probability of a given association can be found in tables such as that produced by Keppel and Postman (1970). In the Nemeth and Kwan (1985) study, those exposed to a majority who called blue slides green, gave more conventional associations than did the control group. Whereas the first association in both conditions tends to be fairly conventional, the control group becomes more original from the second through the seventh association. By contrast, those in the majority condition remained conventional in their associations. The difference between the two conditions is highly significant and supports the notion that majority judgments can reduce the likelihood of creativity or novelty of response.

Value of Dissent

Given the problems associated with homogeneity, consensus, and majority views for both the quality of group decision making and creative idea generation, the question arises as to how one can counteract such processes and improve the

divergence and creativity of ideas. One important antidote appears to be dissent. It is a liberator of thought and, perhaps more important, a stimulus to divergent and creative thought.

Dissent as Liberator

In the early studies of conformity, the majority consisted of a relatively large number of individuals who were unanimous. Subsequent research showed that one needed only three or four individuals in the majority to induce conformity; conformity increased as the majority rose to three or four individuals, after which, number made little difference. Thus, if you were going to conform, you would do so when faced with as few as three individuals in the majority. Raising the majority to 15 would not raise the amount of conformity (Asch, 1955, 1956). More important was whether the majority was unanimous. When unanimous, the majority wielded considerable power.

If a nonmajority individual had an ally in the group, however, conformity was drastically reduced (Asch, 1956). With an ally (a person who agreed with the dissenter and with the truth), conformity dropped to less than 10%, even if there were 15 in the majority. Such a finding may not appear surprising, especially in light of the fact that the ally's agreement might have raised the individual's confidence in the position and in himself or herself. Further, the ally's position is correct and corroborates the information from one's own senses. Perhaps not so self-evident are the findings that a dissenter, even one who disagrees with both the nonmajority individual and the majority, also leads to a substantial reduction in conformity. Thus, we have a very interesting finding: dissent, even when it is wrong, serves to liberate the individual from a tendency to conform. In those studies, the individual was able to utilize the information from his or her own senses, ignore the erroneous but unanimous majority, and make accurate judgments (Allen & Levine, 1969).

To make the point even stronger, we now have evidence that exposure to a dissenter (one who persists in a position differing from a unanimous majority) can enhance independence even in subsequent settings. In one study, Nemeth and Chiles (1988) exposed individuals to dissent or to no dissent in a group asked to make judgments of color. Either everyone judged blue slides to be "blue" or there was one individual who consistently called the slides "green." Subsequent to this setting, subjects found themselves in a situation where they were now in the minority. A unanimous majority (three other people) consistently judged a series of red slides as "orange." The slides were not ambiguous; when alone, people were clear that the slides were red. Those exposed to no prior dissent conformed overwhelmingly: when faced with a majority who called the red slides "orange," over 70% of the responses were "orange." Simple exposure to dissent in a prior setting, however, liberated these individuals; they now called the red slides "red." In fact, the reduction in conformity was so dramatic that it was essentially zero.

Dissent as Stimulator of Divergent Thought

Perhaps one of the most important contributions of dissent is its ability to stimulate thinking about the issue from multiple perspectives (Nemeth, 1986). Further, the research offers special promise in that the contributions made by dissenting viewpoints appear to occur regardless of whether or not the dissenter is correct.

There are now a substantial number of studies, using very different paradigms and settings and conducted in different countries, that underscore this basic theoretical premise (De Dreu & De Vries, 1993; Nemeth, 1986; Volpato, Maass, Mucchi-Faina, & Vitti, 1990): minorities stimulate divergent thought, a consideration of the issue from multiple perspectives. This is manifested in the search for information, the use of strategies, thoughts about the issue, detection of novel solutions, and creativity of solutions (Nemeth, 1995). Some studies have shown that minority dissent, even when wrong, stimulates a search for information. Importantly, people search for information on all sides of the issue (Nemeth & Rogers, 1996).

Minority dissent stimulates the use of more strategies in the service of performance. Thus, in the Nemeth and Kwan (1987) study reported above with letter strings, majorities stimulated the use of the majority strategy (backward sequencing of letters). When a minority (of one in a group of four) repeatedly used the backward sequencing of letters, it stimulated the use of all strategies. Compared to a control group and the majority condition, those exposed to the minority position found more words overall on the anagram test. Further, they found the words using forward, backward, and mixed sequencing of letters.

Other studies demonstrate that minority dissent, because it stimulates a reappraisal of the situation and consideration of more aspects of the situation, serves in the detection of solutions. In the embedded figure study outlined above, a differing position espoused by a minority of individuals stimulated a search of the full stimulus array and, in the process, led to detection of novel solutions that otherwise would have gone undetected (Nemeth & Wachtler, 1983). Such a finding that minorities stimulate the detection of more solutions can also be found in group decision-making settings, experimental or natural. There is evidence that minorities stimulate more thought about the issue and thought directed at more alternatives (De Dreu & De Vries, 1993; Martin & Noyes, 1996; Nemeth, Connell, Rogers, & Brown, 2001). Groups make better decisions (Van Dyne & Saavedra, 1996) when a minority view is consistently maintained.

Dissent as Stimulator of Creative Thought and Solutions

There is even evidence of greater creativity in response to minority dissent. To illustrate, the study by Nemeth and Kwan (1987) reported above showed how majorities can stimulate more conventional thinking. People exposed to a disagreeing majority had less original word associations than did a control group.

However, that study had another condition, one in which the disagreement came from a minority, a single individual. In that condition, a minority judged blue slides to be "green." When the dissent came from a minority, the associations to the words *blue* and *green* were highly original.

Compared to the control, those exposed to a minority judgment gave significantly more original associations, those with a low statistical probability. Thus, this study demonstrated two quite different phenomena. Compared to the control (no exposure to disagreement), majorities stimulated more conventional thought (less original associations) and minorities stimulated more original thought. Faced with disagreement from a majority about what is blue or green, people have highly conventional associations to these words; for example, their response to *blue* might be "sky." Faced with disagreement from a minority about what is blue or green, their associations are much more original or statistically infrequent; for example, their response to *blue* might be "jazz." Further evidence of the same kind of phenomenon comes from a study by De Dreu and De Vries (1993), who found that individuals generated more original word associations when confronted with a minority perspective.

Other studies show that minority dissent can stimulate creative solutions to problems. For example, Nemeth, Rogers, and Brown (2001) used a simulated work setting to investigate solutions to a problem with vacation scheduling. In the discussion, individuals in groups were either exposed or not to a dissenting opinion. Subsequent to the interaction, they were asked to come up with as many good solutions as they could to the general problem. Those exposed to minority dissent came up with more, and more creative solutions than did individuals in a control group (no dissent). Such findings are corroborated by studies of group decision making in both educational and organizational settings (Van Dyne & Saavedra, 1996; Volpato et al., 1990). In fact, the evidence from a study on existing organizations by De Dreu and West (2001) shows that dissent increases innovation in work teams but primarily when individuals participate in decision making. Thus, dissent can increase not only creative idea generation but also the implementation of creative ideas via the mechanism of high participation in decision making.

Gaining Perspective

The Role of Diversity

Apart from the stimulating properties of dissent, many researchers have argued that one way to raise the number of perspectives is to have a diverse workforce. The research, however, is complex. Diversity may raise the level of creativity in groups, but there are also a number of studies indicating little benefit in terms of creativity (Bantel & Jackson, 1989; Jackson, May, & Whitney, 1995; Williams & O'Reilly, 1998). The general pattern is that team task-related diversity is related to higher-quality team decision making (Gruenfeld, 1995; Jackson, 1992).

From the perspective of this chapter, diversity may be similar but is not identical to dissent. First, the fact that there exists some form of demographic diversity (e.g., ethnicity, gender, race) does not necessarily imply a difference in perspective that is applicable to the task at hand. One has only to look at Cabinet-level appointments to see that one can have varieties in gender and race but still achieve homogeneity of perspective.

Second, even if a differing perspective is held, it is not necessarily expressed (Janis, 1982; Morrison & Milliken, 2000; Nemeth, 1997). Most people are afraid to voice dissent or to raise questions about the status quo (Lawler, 1992; Pfeffer, 1994). This lack of voice can be one reason diversity, or at least diverse views, are not considered and, thus, available resources are not utilized. Third, even if a differing view is held and expressed, it is not necessarily maintained over time. A boundary condition for the substantial research showing the stimulating value of minority views for creative thought and solutions is that the minority view must be maintained over time (Nemeth, 1995; Nemeth, Mayseless, Sherman, & Brown, 1990). Thus, diversity can be a prelude to dissent but is not the same as dissent.

It should also be pointed out that diverse groups may not contain a majority versus a minority opinion. In fact, there may be multiple minorities; each individual may hold a differing position, making everyone a minority. This situation is quite different from one where two competing "truths" are argued, one held by a majority and the other by a minority of individuals. Some recent evidence (Brodbeck, Kerschreiter, Mojzisch, Frey, & Schulz-Hardt, 2002) suggests that when each person prefers a different alternative, consideration of unshared information and likelihood of discovering a superior solution are improved. There is also evidence that diversity enhances the quality of decision making when it gives rise to debate and disagreement (Simons, Pelled, & Smith, 1999). In keeping with the premises of this chapter, we argue that conflict among competing positions may be essential for raising the quality of decision making and creative solutions.

Role-Playing Techniques

There is a potential downside to diversity, much as we found with dissent. Morale and job satisfaction can be lowered and identification with the group can be weakened (Flynn & Chatman, 2001; Milliken & Martins, 1996). The question, of course, is whether diversity and dissent necessarily fragment the group and lower morale and job satisfaction. In an attempt to raise diversity of views while ameliorating conflict and potential lowered morale, some researchers have advocated forms of structured debate. Techniques such as devil's advocate, for example, were recommended by Janis (1982) in his analysis of Cabinet-level fiascoes. Leonard and Swap (1999) suggest that devil's advocate is a good way to invite dissent and thus creativity, as have numerous other studies and reviews (Cosier, 1978; De Dreu & West, 2001; Katzenstein, 1996).

The origins of such a technique lie in a practice of the Roman Catholic Church in the early 16th century. When a person was proposed for beatifica-

tion or canonization to sainthood, someone was assigned the role of critically examining the life and miracles attributed to that individual, his duty was to especially bring forward facts that were unfavorable to the candidate. Research that has attempted to investigate the efficacy of this technique has tended to use one or another operational definition of devil's advocate.

In many studies of devil's advocate, especially in the organizational behavior literature, researchers compare a situation where an expert makes a proposal with one where this expert's proposal is critiqued by a devil's advocate. A variant on this procedure is a comparison between groups who are in consensus versus groups where one person criticizes the favored proposal. Most research shows the devil's advocate technique to provide some benefit to decision making compared to the expert or consensus conditions (Cosier, 1978; Mason, 1969; Schweiger & Finger, 1984). The literature appears to be mixed as to whether devil's advocate is superior to some form of dialectical inquiry. The latter offers an alternative for consideration, whereas the former simply criticizes elements of the preferred position (Katzenstein, 1996).

A recent study, however, raises questions about the efficacy of role-playing techniques such as devil's advocate. In fact, it offers evidence that there may be negative unintended consequences of such a technique. In one study (Nemeth, Connell, et al., 2001), individuals in groups of four deliberated a personal injury case in an attempt to reach consensus. In one condition, one of the four consistently maintained a deviant position (favoring high compensation) and argued her position from a scripted set of arguments. In a second condition, an individual behaved exactly the same way; the only difference was that she was assigned the role of devil's advocate: she was asked to take a position that differed from the others. In both cases, the person was a confederate. In both cases, the arguments were identical.

The thinking that was stimulated by these two conditions of dissent, however, was quite different. Those faced with the authentic minority generated a greater proportion of internal thoughts, generated by the individual herself rather than thoughts that paraphrased others' views. Perhaps of more importance is the fact that, whereas the authentic minority stimulated thoughts on both sides of the issue, the devil's advocate stimulated thoughts that supported the person's initial views. There was evidence of cognitive bolstering. In other words, the devil's advocate stimulated thinking that confirmed initial views rather than stimulating divergent thinking about the issue or even much consideration of the opposing view.

The Value of Authentic Dissent

Throughout this chapter, we have argued that consensus, where no dissenting or deviant viewpoints are expressed, has potential downsides. People may readily assume that the majority view is correct and adopt it without reflection or serious consideration of alternatives. One might assume that such dissent is valuable to

the extent that it presents an alternative, which may be correct. In fact, minority views that are superior do enhance the quality of group choice (McLeod, Baron, Marti, & Yoon, 1997; Stewart & Stasser, 1998). However, their value is more extensive than this. Dissent liberates people to voice their own authentic views. Perhaps more important, it stimulates individuals to think about the issue from more perspectives, to take more facts into account, and to think in original ways that permit the detection of new solutions (Nemeth, 1995, 1997).

The expression of dissent, however, is not without costs. Often, there is increased conflict and reduced morale and harmony (Jackson et al., 1995; Williams & O'Reilly, 1998). Thus, it is reasonable to speculate whether such stimulation can occur without the reduction in morale; to some extent, this motivated research on techniques such as devil's advocate. Yet, as we have seen, such techniques are not nearly as effective as authentic dissent. More important, they may be accompanied by enhanced confidence in one's original belief, a smugness that may occur because one assumes one has considered alternatives though, in fact, there has been little serious reflection on other possibilities.

At this stage of our understanding of the potential for role-playing techniques such as devil's advocate, it would be premature to suggest that one cannot mimic dissent in such a way that stimulation of creative thought ensues but without lowered morale. A recent study tried to mimic authentic dissent quite precisely but, again, pointed to the likely advantages of authentic dissent over any kind of role playing (Nemeth, Rogers, et al., 2001). This study, in which individuals in groups of four discussed a vacation scheduling problem in a firm, had several conditions, two of particular importance here. In one condition, an authentic minority took a position that differed from that of the other three and maintained it over time. In a second condition, an individual took the same minority position at the outset but was then asked to role-play the devil's advocate, arguing over time with exactly the same arguments as the authentic minority used. In other words, the conditions were identical except that one was asked to role-play a devil's advocate. In both the authentic and the consistent devil's advocate conditions, the person believed the same position and argued it the same way, yet the impact on others' thinking and problem solving differed.

In this study, individuals were asked to generate as many good solutions as possible to the general problem of vacation scheduling. The findings indicated that the authentic minority stimulated more solutions, and more creative solutions, than did the consistent devil's advocate. Given that, in both conditions, the person argued what she believed and used the same arguments, many found the results to be surprising. If you think a person is arguing what her or she believes, even when asked to role-play a differing position, why would this not have the same impact as someone arguing what he or she believes without being asked to role-play?

One reason is central to the entire issue of role-playing techniques. The dissenter is doing precisely that: playing a role. Thus, there is ambiguity as to whether the behavior (or arguments) comes from conviction or from the

demands of the role. Second, you can't really argue with people who are role-playing. Their role is a script, and thus, they cannot change their mind (even this would be scripted in advance). This brings us to the point of why authentic minority views are so effective in stimulating divergent and creative thought and why role-playing techniques may be far less effective.

When a person is willing to differ from a majority, we call it courage. People understand the difficulty of maintaining a minority view; they know that people often are not sure they are correct and may fear ridicule and rejection (Nemeth, Endicott, & Wachtler, 1977). Thus, when we see that they are consistent, that they evidence a belief in a position that differs from the majority, we accord them admiration and courage (Nemeth & Chiles, 1988). We also wonder why they do this. In general, people do not assume that the minority view is correct, but the majority's consistency raises doubt about the majority position and stimulates a reappraisal of the entire issue (or stimulus array). In the process, people consider more information, look at that information in more ways, and evidence more complexity of thought. As a result, they make better and more creative decisions (Gruenfeld, 1995; Nemeth & Rogers, 1996; Nemeth, Rogers, et al., 2001). Without authentic differences and the courage manifested in their expression, it may not be possible to simulate the kinds of differing views that stimulate divergent and creative thought.

Looking to Corporate Culture

If we assume that most techniques aimed at mimicking dissent will suffer from the fact that they require playing a role and that this, by definition, limits their ability to stimulate divergent thought, we can do one of two things. We can mislead or deceive people into thinking that the person is not role-playing, or we can concentrate on how to "welcome and not fear" (Fulbright, 1964) the voices of dissent. Our assumption is that morale is not necessarily lessened by dissent; in fact, such a voice may be both liberating and energizing.

If we look at accounts of "hot groups," we see teams that are characterized as "vital, absorbing, full of debate, laughter, and very hard work," that "pump out ideas and possibilities at an astonishing rate" (Leavitt & Lipman-Blumen, 1995, pp. 109, 111). In keeping with the premise of this chapter, these are groups not given to easy consensus. In fact, they are characterized as climates where "numerous noisy and seemingly disorganized discussions are more the rule than the exception" (p. 111).

Rather than argue for morale and harmony through some kind of fit or superordinate goals or cohesion (Collins & Porras, 1994), some corporate cultures appear to invite dissent. Motorola, for example, is described as having a contentious culture, where business units are pitted against each other (Cabana & Fiero, 1995). GE has workout groups where employees voice their gripes. One Marriott policy states that if managers can't explain why they are asking employees to do something, the employees don't have to do it (Collins & Porras,

1994). Hewlett-Packard awards a medal of defiance to continue work on an idea contrary to the views of management (B. O'Reilly, 1997; Summerfield, 1990). It is difficult to assess whether these practices are simply rhetoric rather than deeply held and widely shared norms, but they do recognize the potential value of dissent.

The fact that rules or rhetoric do not, in and of themselves, give value to freedom of expression or dissent in a company is apparent in comparisons between companies, such as IDEO, that have successfully used brainstorming principles (Hargadon & Sutton, 1997; Sutton & Hargadon, 1996), and research on brainstorming. The research studies have investigated the efficacy of brainstorming rules: (1) concentrate on quantity of ideas; (2) don't criticize others' ideas; and (3) elaborate and build on others' ideas (Osborn, 1957). Repeatedly, such rules offer some benefit to a group's ability to generate ideas over no such rules. However, they rarely achieve the level of the individuals generating ideas alone (Diehl & Stroebe, 1991).

At IDEO, a company that specializes in design (and a profitable one at that), these rules are printed on the walls of the company. However, the culture is more than written rules. In the expressed attitudes and behaviors of individuals, in the rewards provided (both symbolic and tangible), one can see the embodiment of these rules. The behaviors and norms give meaning to the words. In such a culture, people feel free to generate many ideas without criticism or much fear of it and continually elaborate on each other's ideas.

We have yet to fully understand how such a culture emerges and how it is maintained. Companies whose product is creativity—creative designs that work—may be especially likely to support a culture of diversity and dissent, one illustrative of hot groups. Perhaps the early days of a company, when the workforce is small and on a mission, are conducive to this sort of atmosphere. The early days of Apple Computer evidence such a climate where young people seem relatively unconcerned with status, dress code, size of office, and moving up the corporate ladder. When the mission is important and everyone's contribution is needed and valued—perhaps this is the setting for contentious, energetic, creative cultures.

In more established corporations, perhaps the research and development units might achieve such a culture. However, to the extent that every worker has knowledge and ideas to contribute, we suggest removing the reasons for fear of reprisal or ridicule that exists in most companies and instead motivate people to voice the problems they see and the solutions they recommend. This is likely to require much more than diversity, much more than rhetoric, and much more than techniques that simulate opposition. Perhaps we need to truly recognize the benefits of diversity and dissent (Morrison & Milliken, 2000; Nemeth, 1995, 1997).

Note

1. It should be pointed out that many view this as a Western notion of creativity, in contrast to the Eastern view, which may concentrate more on states of personal

fulfillment or an expression of an ultimate reality (Lubart, 1999) or even be an exercise to create meaning out of irrationality. Whether one views the concept from the East or West, creativity is not the same as logic, and maxims and rigid boundaries are detrimental to creative thought. It may be more solvent, almost spilling out of the mind in divergent ways. The ability to allow one's mind to do this spilling is what Zen Buddhists practice their whole lives. One way by which they prod creativity is to present themselves with a dilemma that logic cannot answer (Suzuki, 1964).

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