In his stimulating essay on creativity and conflict resolution in Chapter Sixteen, Howard Cruber raises a number of important questions, which we discuss briefly before presenting some guidelines to creative conflict resolution.

**CREATIVITY RESULTING FROM CONFLICT**

The first question is, if "creativity requires conflict," under what conditions of conflict is creativity likely to emerge?

One of the creative functions of conflict resides in its ability to arouse motivation to solve a problem that might otherwise go unattended. A scholar who exposes his theories and research to the scrutiny of his peers may be stimulated to a deeper analysis if a colleague confronts him with conflicting data and theoretical analysis. Similarly, individuals and groups who have authority and power and who are satisfied with the status quo may be aroused to recognize problems and be motivated to work on them as opposition from the dissatisfied makes the customary relations and arrangements unworkable and unrewarding, or as they are helped to perceive the possibility of more satisfying relations and arrangements. Accepting the necessity for change in the status quo (rather than rigid, defensive adherence to previously existing positions) is most likely, however, when the circumstances arousing new motivation suggest courses of action that pose minimal threat to the social or self-esteem of those who must change.
Thus, although acute dissatisfaction with things as they are and motivation to recognize and work at problems are necessary for creative solutions, these things are not sufficient. The circumstances conducive to creatively breaking through impasses are varied, but they have in common that "they provide the individual with an environment in which he does not feel threatened and in which he does not feel under pressure. He is relaxed but alert" (Stein, 1968). Threat induces defensiveness and reduces both tolerance of ambiguity and openness to the new and unfamiliar; excessive tension leads to primitization and stereotyping of thought processes. As Rokeach (1960) has pointed out, threat and excessive tension lead to the closed rather than open mind. To entertain novel ideas that may at first seem wild and implausible, to question initial assumptions of the framework within which the problem or conflict occurs, the individual needs the freedom or courage to express herself without fear of censure. Much research (see, for example, Carnevale and Probst, 1998, and Chapter Three of this volume) has demonstrated that a competitive, as opposed to cooperative, approach to conflict leads to restricted judgment, reduced complexity, inability to consider alternative perspectives, and less creative problem solving.

NOVEL POINT OF VIEW

The second question is, how is a novel point of view developed and constructed?

Gruber rightly stresses the importance to creativity of a novel point of view that stimulates new questions. Throughout this handbook, there is stress on the fact that a novel perspective regarding conflict is to view it as a mutual problem the conflicting parties can work on together, cooperatively, in an attempt to discover mutually satisfactory solutions. As Chapter One emphasizes, reframing the conflict so that the conflicting parties see themselves as being in a collaborative rather than oppositional relation with regard to resolving their conflict is crucial to creative resolution. It not only produces an atmosphere conducive to creativity but vastly expands the range of potential solutions as well.

Although reframing makes a conflict more amenable to a solution, the ability to reformulate the reframed mutual problem so that, in turn, one can find a solution to it is dependent on the availability of cognitive resources. Ideas are important to creative resolution of conflict, and any factors that broaden the range of ideas and alternatives available to the participants in a conflict are useful. Intelligence, exposure to diverse experiences, interest in ideas, preference for the novel and complex, receptivity to metaphors and analogies, the capacity to make remote associations, independence of judgment, and the ability to play with ideas are some of the personal factors that characterize creative problem solvers. The availability of ideas is also dependent on such social conditions as the opportunity to communicate with and be exposed to other people who may have
relevant and unfamiliar ideas (such as experts, impartial outsiders, people facing similar or analogous situations); a social atmosphere that values innovation and originality and encourages exchanging ideas; and a social tradition that fosters the optimistic view that, with effort and time, constructive solutions to problems that initially seem intractable can be discovered or invented.

**TIME AND CONFLICT RESOLUTION**

The third question is, do creative solutions emerge only after extensive time and effort are focused on the problem, or are there conflicts that permit solution in a relatively short time?

Gruber is surely correct to emphasize that such profound, intellectual problems as those addressed by Darwin and Einstein require extended time and effort. Similarly, one can assume that such complex conflicts as those in the Middle East and the Balkans—or in an embittered dysfunctional family—also involve prolonged creative effort. But not all problems are profound, and not all conflicts are deeply enmeshed in difficult personal, social, economic, and political conditions.

**PLAY AND CREATIVITY**

Fourth, why is play the midwife of creative change?

Almost all students of creativity emphasize the importance of playfulness to the creative process. As Gruber points out, the play ethic permits one to engage in fantasy and to consider fantastic and unreal ideas, which sometimes can be transformed into workable solutions. It also permits fun, humor, and relaxation of internal censors that inhibit expression of challenging, unconventional, far-out ideas. Families, groups, and organizations as well as individuals who have the play ethic are apt to discover novel solutions to the problems and conflicts they experience.

**INDIVIDUAL WORK AND COLLABORATION**

Fifth, what are the differences between creative individual work and creative collaboration?

Gruber's fascinating experiments bring this question sharply into focus. From his research, as well as that of others, it is evident that an individual is not at a disadvantage, compared to a collaborating pair of people, if she has access to the different perspectives (which are available within the pair) necessary to constructing
an appropriate integrated picture of the reality with which she is dealing. However, the individual could reasonably assume that, if she is limited to her own perspective, it would be much more difficult or perhaps impossible to do so. On the other hand, a pair of subjects, each with his or her own perspective concerning the reality being perceived (but with sufficient information between them), is also able to construct a valid picture of the reality if they are cooperative. In fact, they are able to generate more such pictures than the individual problem solver is.

One can generalize by stating that collaborative (as compared to individual) problem solving—when the collaboration is effectively cooperative—usually provides more resources, more diversity in ideas, and more social support for the work involved in creative problem solving. On the other hand, individual as compared to collaborative work does not require the skills and attitudes involved in effective cooperation, which include communication, perspective taking, trust, empathy, control of egocentricity, and the like (see Chapter One for fuller discussion of the skills and attitudes involved in effective cooperation). Thus, individual work is apt to be more creative if it is difficult to establish effective cooperation, while collaborative work is apt to be so if there is effective cooperation and the collaborators have more resources available to them than are available to an individual.

The Egg Drop Exercise
As Gruber and we have emphasized, constructive resolution of conflict often requires that the disputants be able to see old things in new ways. Here we describe an innovative training experience, developed by Kenneth Sole, for exploring conflict and creativity under conditions of cooperation and competition. We also outline several guidelines for conflict resolvers for use in facilitating a creative process in conflict situations.

The Egg Drop
This is an exercise in intragroup creative problem solving conducted under conditions of intragroup and intergroup competition and conflict. The participants are put into teams of five to ten individuals and informed of the task. A coat hanger has been hung from the ceiling, and one dozen raw eggs are suspended from it by strands of cotton thread. A ladder leads to the structure. The teams are then instructed that the objective of the activity is to be the first team to build a freestanding "apparatus" that successfully catches and holds a falling raw egg, unbroken, six inches above the floor.

Each team is furnished with an identical kit of "stuff" (string, tape, cupcakes, instant soup, hairpins, and so on), and instructed to build an apparatus to catch the egg of their choice. The eggs are each numbered sequentially. The teams are informed that they may use only the materials in their kit to build the apparatus.

In addition, each team is asked to select a member of their group to sit on a panel of judges. They are instructed not to consult with any of their prior team members regarding the creative process. In addition to the rules provided, the
judges may decide (unilaterally) to impose additional rules for the teams to follow. These rules are delivered to the teams via formal proclamation.

When the judges begin the competition, each team member suits up in garbage bags and rubber gloves and then begins work on designing the apparatus. As soon as a team is ready, one member is required to call "Ready." At that time they must announce (within fifteen seconds) the number of the egg they wish to catch. From the time the team declares the egg they plan to catch, they have three minutes to position their apparatus for catching the egg. By the end of the three-minute period, one of the team members must cut the thread that holds the chosen egg. Each team is limited to two egg attempts per apparatus.

No member of a team may touch any egg, suspension threads, or hanging structure at any time. A judge noticing violation of any of these rules imposes the penalty of confiscation. The other team(s) confiscate one item from the kit of the offending team. Teams have thirty seconds to select the item they wish to confiscate. If a team member informs the judges (or a judge) of violations, the penalty is doubled. Decisions of the judges are final.

This exercise gives participants a rich (and ridiculous) opportunity to explore creative problem solving under conditions of competition and conflict. The experience can be particularly useful for intact workgroups or for other groups experiencing conflict, because it allows exploration of conflict dynamics under relatively benign circumstances. During the exercise, conflicts typically emerge between the teams, between the panel of judges and the teams, and within a team between individuals with differing ideas and styles of problem solving. All of these conflicts have implications for the creative problem-solving process.

**General Guidelines for Creativity and Conflict**

The discussions that follow the exercise can cover many of the themes outlined in the guidelines we offer here. The ideas and processes summarized here have been informed by the work of many scholars and practitioners, among them Howard Gruber, Kenneth Sole, John Cleese, Donald Treffinger, Scott Isaksen, Brian Dorval, and Peter Carnevale.

**Challenge the Myths about Creativity.** Treffinger, Isaksen, and Dorval (1994) identified four common myths that many people hold about creativity:

1. "I'm not a creative person" (creativity is a rare and special quality possessed by only a few).
2. "Creativity is too mysterious to be taught" (creativity is a supernatural and uncontrollable phenomenon).
3. "Creativity equals arts" (creativity only exists in relation to artistic endeavors).
4. "Creativity is madness" (creativity is associated with eccentricity and insanity).
The egg drop exercise often puts people face-to-face with these and other assumptions that they hold about the creative process and their own capacity to be creative. These myths negatively influence people's approach to problem solving under many conditions, but particularly under conditions of perceived threat that are associated with many conflict situations. Training should support people in exploring these assumptions and in broadening their understanding of the creative process to include how they solve conflicts and other problems in their lives.

Use Time and Space Arrangements to Create an Oasis for Creative Problem Solving. John Cleese, who first found fame in Monty Python's Flying Circus and has been a consultant to many organizations on creativity, coined time-space oasis to depict a situation where the most basic conditions are met for functioning creatively (Cleese, 1991). The condition of time has two dimensions, length and endurance. People must have a sufficient amount of time to open up and see things flexibly and creatively, particularly if working in a conflict situation where they are operating primarily in a critical mode. Thus, the competition to be the first to complete the egg drop apparatus reduces the group's time and usually stresses their ability to innovate. Once in a creative mode, disputants need ample time to create, but not so much time that they tire and become discouraged. Cleese recommends ninety minutes as a good amount of time for a working session (thirty minutes to open up and sixty minutes to work constructively).

The other component of time is the need for disputants to persist and endure, even after a marginally acceptable solution presents itself. Research has shown that humans tend to be poor decision makers because they often choose the first acceptable solution to a problem that emerges, even if it is far from being the best that could be developed. Truly creative solutions are usually discovered only after persisting in exploring the problem and its potential solutions. Prolonged and deep engagement with a problem can lead not only to a high level of innovation but also to deep and enduring satisfaction among the disputants with the agreement they produce.

The second dimension of the time-space oasis is having access to a different space. It is often useful for disputants to remove themselves from their customary environments to be able to think afresh. The many demands and distractions of one's usual environment, whether related to the conflict or not, draw one back into habitual or standard ways of seeing a problem and responding to it. A new environment (particularly a confidential one) can allow disputants some degree of freedom to try out new perspectives, behaviors, or ways of working with a problem. This is a primary reason that exercises such as the egg drop, which are removed from actual work or conflict settings, can be useful in helping disputants explore relational or conflict dynamics.
Develop a Serious but Playful Atmosphere. As Howard Gruber indicated, playfulness is often central to a creative process. Humor, play, and a sense of fun can all contribute to releasing tension and opening up one's view of things, ultimately leading to development of a novel point of view. The egg drop exercise captures this relationship between play and a new perspective. The rules of the exercise are always presented in the most formal of manners, but the task, the uniforms, and the objects involved belie this formality and communicate a high degree of silliness. This climate is experienced by the participants as especially conducive to experimenting, making mistakes, and attempting the uncommon or ridiculous.

But humor, playfulness, and fun are tricky endeavors when working with difficult conflicts. Particularly in escalated conflicts, disputants often approach their problems grimly. Having a conflict resolver introduce humor or play could easily offend or enrage in these situations. If introduced, it must be done with sensitivity and artistry. To establish a climate that allows for humor or play, Cleese (1991) recommends that we separate the idea of seriousness from that of solemnity. He claims that it is rarely useful to be solemn, and that serious topics can often be approached with a touch of humor. Conflict-resolving practitioners could greatly benefit from training to develop the social skills useful in creating a serious but playful problem-solving atmosphere.

Foster: "Optimal" Tension. Tension is the primary link between conflict and creativity. Conflict signals dissatisfaction with something or someone. This dissatisfaction brings tension into the system. If standard approaches to reducing tension are ineffective, it increases. This increase can eventually motivate people to seek new means of reducing the tension (or to keep hammering away with the old means), which can lead to adaptation or innovation and eventual reduction in tension. However, too much tension in a system can impair people's capacity to think creatively to envision a new approach.

The egg drop exercise introduces many sources of tension. The intergroup competition over winning, the limited and obscure resources that the teams are asked to work with, the constant evaluation of the judges, and even the request that the members wear trash bags and rubber gloves all increase tension. The tension works to engage the participants, but it also adversely affects their ability to think creatively, even if there is only minimal intergroup competition. Optimal tension, therefore, is a state where there isn't too little tension regarding the problem being faced in a conflict (where the disputants are not sufficiently motivated to deal with the issues and the conflict remains unresolved) or too much tension (which can lead either to conflict avoidance because it is so threatening or to conflict escalation as the tension limits one to an oversimplified black-and-white perception of the issues).

Thus, it becomes critical for conflict resolvers to develop the skills necessary to assess the level of tension in a conflict system, to diagnose what level is optimal.
for a given system, and to discover levers for increasing tension (such as through using open confrontation or empowering members of low-power groups) or decreasing it (such as through using humor or temporarily separating disputants from one another).

Foster Confidence to Take the Risk of Being Outlandish. Self-confidence is an individual characteristic that can affect a person's ability to take the risk involved in developing a novel point of view. However, a person's confidence level can also be significantly affected by the situation and by those in power (or perceived to be so) in the situation. Conflict specialists who emphasize their expertise and knowledge in a problem-solving session tend to elicit dependence and less confidence from the disputants, with the consequence that fewer novel ideas and recommendations are generated by the parties. A conflict specialist who supports and encourages the ideas of the disputants, highlighting those aspects of their ideas that are particularly useful or innovative, is likely to draw out a flow of ideas that expand the menu of perspectives and alternatives. It is important for facilitators to remember that the open flow of ideas and information is a dynamic responsive to the support (and playfulness) of the facilitator.

Have Appropriately Phased Open (Divergent) and Closed (Convergent) Thinking. This is the yin and yang of the creative problem-solving process. Creativity is most often associated with openness of ideas, a free-flowing of thoughts, images, symbols and so on. Decision making, though, is most often associated with moving toward closure: converging on the alternative or set of alternatives that best address the problem. A creative problem-solving approach to conflict requires both. Disputants must have the capacity and opportunity to open up to understand a problem from various perspectives and to generate many, perhaps novel, ideas or solutions, as well as the chance to (eventually) reach closure by taking a good, hard look at those perspectives and ideas and determining if they are any good and if they will work in a particular situation.

The open and closed modes of experience are in opposition to each other, in that it is difficult to remain open to new alternative possibilities while trying to close in on a final decision. It is therefore useful to alternate from one mode to another during the problem-solving process. Alternating between the open and closed modes can be useful during various phases of the problem-solving process, such as when defining or redefining the issues, generating solutions, or planning methods of implementation or achieving constituent buy-in. It is useful to defer judgment (delayed evaluation of the alternatives) when in the open mode, and then weigh both the strengths and weaknesses of the alternatives when moving into the closed mode for decision making.

Typically, conflict moves people into the closed mode and produces rigid thinking with restricted judgment, reduced complexity, and narrower range of attention.
Exactly why this occurs is unclear, but scholars have speculated that it may be due to a number of factors: the conflict triggering a negative affect such as anxiety, a competitive orientation overloading cognitive functioning and leading to preoccupation with formulating strategies and tactics to prevail in the conflict, or simply providing too much cognitive stimulation. If this occurs, conflict resolvers must find the means to reorient disputants, at least temporarily, into an open mode.

Recent research by Carnevale and Probst (1998) has identified an important qualifier to the causal chain of “conflict equals tension equals impaired cognitive functioning.” The research found that people’s cognitive functioning does become more rigid and restricted if they either anticipate or engage in competitive conflicts, but not when they expect or engage in cooperative conflict. People in a cooperative experience are better able to combine categories, see commonalities in their positions, and better locate integrative solutions than those in competitive conflicts.

The exact reasons for this difference are as yet unclear, but the implications for practice are important. Conflict resolvers who effectively reframe the conflict as a mutual problem to be solved cooperatively by the parties also open up the disputants’ capacity to think creatively about the problem and the solution.

Adequately Define the Problem. Adequate definition is the aspect of creative conflict resolution that is most often shortchanged. The uncomfortable experience of tension associated with many conflicts often moves people to try to solve the problem quickly. This tendency puts them prematurely into the closed mode of decision making around the nature of the problem, before they take the time to open up and examine the problem from alternative perspectives. Ultimately, this can lead to superficial or even incorrect understanding of the problem at hand, and much time wasted generating and implementing solutions to the wrong concerns.

Ironically, this approach can take more time than if the problem is examined thoroughly up front. For example, what is the egg drop problem? Is it to build an apparatus quickly? Is it to keep the other teams from building an apparatus? Or is it to stop the egg six inches from the ground? Each of these definitions of the problem leads to a distinct strategy for solving it. Spending some time exploring the problem, and perhaps identifying the pervasive concerns behind the presenting problem, can lead to satisfying, long-lasting, and even efficient solutions.

TECHNIQUES FOR STIMULATING NOVEL IDEAS

It is important to recognize that most creative artists, writers, and scientists produce many ideas before they find a good, novel, creative one. In the preceding guidelines, we discuss some of the conditions fostering openness of the free
flow of thought necessary to produce many ideas. Brainstorming (see Osborn, 1953) is a technique widely used to generate ideas. In conflict situations, it may be employed to come up with ideas about the problem or conflict, its potential solution, and action to be taken (Fisher, Ury, and Patton, 1991). In a brainstorming session, whether as an individual or as a group, one is encouraged to use imagination to come up with as many varied ideas as possible, without censoring or judging them, whether produced by oneself or by another. In a group setting, others are encouraged to free associate with, elaborate, and build on the ideas of others.

To encourage novelty as well as quality in ideas, people are encouraged to use metaphors (Lakoff and Johnson, 1980) and analogies. (For example, what new ideas might be developed about a conflict between ethnic groups by using the metaphor of family feud?) Other techniques for stimulating novelty include "synectics," or joining together opposites (Gordon and Poze, 1977); raising questions about ways of changing the situation (Eberle, 1971); substituting, separating, adding, combining, reducing, magnifying, deleting, or otherwise rearranging elements.

As the chapters on change processes (Chapter Eighteen), on intractable conflict (Chapter Twenty-One), and on large-group methods (Chapter Twenty-Six) indicate, another way of getting out of a rut and creating new ideas is to try imagining a desirable future. Beckhard and Reubin (1987), Blake and Mouton (1984), Boulding (1986), and others have used various terms—"envisioning the desired future state," "social imaging," "future search"—to characterize the process by which individuals, groups, or organizations are encouraged to free themselves from the constraints of current reality to develop an image of a better future. In practice, this procedure has been useful in helping people develop awareness of new possibilities and new directions. One could expect such a procedure to be helpful in a conflict situation: the parties are aided in imagining desirable relations in the future and to start the process of thinking how they can get there from the present situation.

A third party, such as a mediator, can bring new thinking into a stuck conflict. She may help the conflicting parties become aware of new possibilities for agreement other than win-lose or lose-lose resolution of their conflict. Thus, as Rubin, Pruitt, and Kim (1994) have pointed out, mutually satisfactory agreements may be reached by (1) expanding the pie, so that there is enough for both sides; (2) nonspecific compensation, which involves having one party receive its best alternative and compensating the other in some other way; (3) logrolling, by having the parties make mutually beneficial trade-offs among the issues; (4) cost cutting, by reducing or eliminating the costs to the party not getting its way; or (5) bridging, by finding an option that satisfies the interests of both parties (recall the discussion in Chapter Nine).

Also, by making the parties aware of their potentially "creative" differences in what they value, their expectations, their attitude toward risk, their time pref-
erences, and the like (Thompson, 1998), we help them see that their differences can facilitate mutually satisfactory agreement.

**CONCLUSION**

Betty Reardon, a noted peace educator once said, “The failure to achieve peace is in essence a failure of imagination” (personal communication). Throughout our history, a considerable amount of human and economic resources have been invested in creating new and deadlier means to wage war. The time has come to invest the energy and resources necessary to innovate and create new and livelier means to wage peace.

**References**


