This article presents advice for teachers about using sociocognitive conflicts to promote academic learning. In doing so, the conditions under which sociocognitive conflicts are constructive or disruptive are examined and the relevant research is reviewed on social development, cooperative learning, and social influence. Two types of conflict elaboration—epistemic and relational—are identified. Epistemic elaborations focus students on task resolution leading to positive cognitive outcomes, and correspond to a cooperative relationship. Relational elaborations focus students on competence differentials and lead either to compliance or to competitive confrontations. Implications for education are discussed.

Imagine that Janet, age 5, is asked to look at a toy village built on a table beside her, made of three houses of different colors arranged in a specific way around a little lake. Janet is given three similar houses and is required to reproduce the same village on her own table. This table is rotated by 180 degrees. In order to perform well, Janet will have to place the houses by taking into account and coordinating the front/back and right/left dimensions. But at this age, Janet may just reproduce the village without performing any of the required transformations. This spatial coordination problem is an example of the tasks used in the Piagetian tradition to study cognitive development.

In Piaget’s view (1950), cognitive development progresses through different stages and sub-stages. In this approach, conflicts are essential, since they are seen as a drive for developmental change. They represent contradictions between different actions of the child or between what the child anticipates from action and the observed results. These contradictions lead children to move from their initial views toward a higher level of development (Piaget, 1926, 1932). Thus, conflicts are responsible for internal adjustments and developmental changes.

Developmental social psychologists have stressed the social nature of conflicts. They proposed that inter-individual conflicts are essential to the stimulation of cognitive development. These conflicts of communication or sociocognitive conflicts involve confrontations with a partner posing a different response to the same problem, and have proved to be beneficial for learning in different contexts (Doise, Mugny, & Pérez, 1998; Levine, Resnick, & Higgins, 1993).
Throughout Europe and other parts of the world, teachers are using sociocognitive conflicts to promote the cognitive development and academic learning of their students. Intellectual confrontations influence cognitive development, learning, and retention in many important ways when they are structured constructively. The aim of this article is to define the conditions under which these conflicts are constructive or disruptive and to provide teachers and other educators with advice on how to strengthen the positive cognitive outcomes resulting from intellectual confrontations.

**Constructive Confrontations**

**Sociocognitive conflict: A social developmental approach**

Piagetian tasks (e.g., spatial coordination and conservation problems) have been widely used to study the effect of sociocognitive conflicts because different solutions or perspectives can be proposed by different children, depending on their cognitive level or their relative focus. Thus, Mugny, Giroud, and Doise (1978-1979) found that peer interaction leads to some progress in cognitive development (compared to an individual condition) when a sociocognitive conflict takes place. In the same vein, Ames and Murray (1982) have stressed that contradictions are more beneficial when they occur during real social interactions with a partner. In other words, both cognitive divergence (conflict of responses) and social discrepancy (with a partner) are required.

**Advice 1:** Promote sociocognitive conflicts by asking children with different cognitive levels to compare their viewpoints or solutions. Progress tends to occur both for lower- and higher-level children when they are confronted with each others’ solutions (Mugny & Doise, 1978). Progress by the higher-level child suggests that the more advanced performance induced by the sociocognitive conflict is not a mere imitation effect but a genuine cognitive progress.

**Advice 2:** Promote sociocognitive conflicts by arranging tasks in such a way that different points of view are possible and can be confronted. Cognitive progress was also found in research involving confrontations between two children at the same (low) cognitive level. In one experiment (Doise & Mugny, 1979), each child was placed facing the other in a spatial coordination problem (the rotation of the toy village), ensuring that their spontaneous responses contradicted one another, due to the opposition of points of view (e.g., each child wanting to place houses with reference to his/her own right and left). Results showed that, although these children had faced a partner at the same cognitive level who proposed an erroneous response, they both showed progress on an individual post-test. A similar demonstration was made using confrontations with an incorrect response at the same low level (Mugny, Doise, & Perret-Clermont, 1975-1976) and with a response even more erroneous than the one proposed by the children (Mugny, Lévy, & Doise, 1978). These experiments indicate that sociocognitive conflict, that is, confrontation of points of view, can induce some progress. Moreover, progress may be greater when the conflict is more intense.

**Controversy in information exchange: A cooperative learning approach**

The impact of confrontations with a directly opposed position has also been studied in the context of information exchange. People confronted with an opposed position report more uncertainty regarding their partner’s position, but at the same time they are able to identify more precisely the nature of their partner’s reasoning (Tjosvold & Johnson, 1977, 1978).

**Advice 3:** Encourage controversy in pro-con issues while stressing cooperative context. Controversy exists when one person’s judgments are incompatible with those of another person and the two seek to reach an agreement. Academic controversy has been studied in the cooperative learning tradition (Johnson & Johnson, 2002). This entails students’ involvement in intellectual conflicts. Students have to “prepare a persuasive case for their position, present their position in a compelling and interesting way, refute the opposing position while rebutting criticisms of their position, take the opposing perspectives, and derive a synthesis or integration of the positions” (Johnson & Johnson, 1995, p. 1). Thus, controversy implies a mix of competitive and cooperative elements. It leads to motivational, interpersonal, and cognitive gains. It
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enhances epistemic curiosity (i.e., motivation to understand and to acquire new knowledge) and a search for additional information. It favors a more positive attitude toward the issue and the other students when compared to a concurrence-seeking approach in which students seek to avoid confrontations. Moreover, controversy favors learning by stimulating the elaboration and the understanding of both perspectives.

Obstacles to Constructive Confrontations

Research confirms that confrontations of points of view between partners can elicit potential benefits across a large range of social and cognitive outcomes. Nevertheless, not all confrontations are positive. One basic limitation concerns the prerequisites needed to benefit from inter-individual confrontations (Doise & Mugny, 1984; Mugny, De Paolis, & Carugati, 1984). Two levels of prerequisites can be identified. These concern cognitive competence (some basic cognitive structure is required) and social competence (some basic abilities to communicate and to interpret information are necessary).

The second, and more important, limitation concerns the way conflicts are regulated with respect to social and interactive dynamics (Carugati, De Paolis, & Mugny, 1980-1981). Sociocognitive conflicts are especially effective when confrontation cannot be ignored (for example, when two other partners propose an obviously erroneous response, rather than one partner). However, various dynamics can be identified that reduce the benefits of confrontation.

Compliance and noncooperation

Advice 4: Discourage avoidance of conflicts. It has already been mentioned that in pro-con issues, concurrence seeking, where confrontations and conflicts are avoided, is not as positive for cognitive outcomes as controversy, where the different positions are explored (Johnson & Johnson, 1995). Moreover, confrontations must not be reduced to compliance. Compliance consists in yielding to the partner’s response (a mere imitation). It is an easy way to avoid and end conflicts, but it reduces progress.

Advice 5: Strengthen reciprocal and active participation. Indeed, imitation seems to be encouraged by asymmetrical relations, as when a child works with an adult (Carugati et al., 1980-1981; Mugny et al., 1978-1979). However, in peer relations, social interaction likewise needs to be reciprocal to allow cognitive elaboration. Cognitive co-elaboration is disrupted when a more advanced partner simply imposes his/her own point of view without explanation, when decision making is unilateral, when a leader is imposed, or when communication is not possible. This underlines the importance of active involvement of both partners (Damon & Phelps, 1989). In order to benefit from a confrontation, individuals need to maintain the divergence and argue their positions.

Competition and defensive positions

Advice 6: Avoid competition. Johnson and Johnson (1985) have compared conflict procedures in terms of their cooperative (controversy) versus competitive (debate) framework. Debate derives from competition; it appears when one person’s judgments are incompatible with those of another, and the teacher declares a winner on the basis of the best presentation. Debate is less beneficial than controversy as far as information exchange, epistemic curiosity, and attitude change are concerned (Johnson & Johnson, 1989, 1995; Johnson, Johnson, & Tjosvold, 2000). The less positive outcome of debate, as compared to controversy, has been confirmed in a meta-analysis (Johnson & Johnson, 1989, 1995). It appears that a confrontation of positions in a competitive context reduces cognitive outcomes by activating defensive reactions. Sticking with one’s own initial position and refusing to integrate alternative positions can be an example of these defensive reactions aimed at protecting perceived self-worth and self-competence.

Advice 7: Avoid negative judgment on competence. Tjosvold & Johnson (1978) indicate that in a competitive context closed-mindedness is combined with negative judgments directed both toward the alternative position (the idea) and toward the partner (the person). These reactions can, in turn, have negative consequences for learning. In particular, when competence is challenged during confrontation (i.e., when participants see their competence denied by their partner), participants experience more uncertainty, more internal distress, derogate the partner to a greater extent, and indicate
greater closed-mindedness than participants whose competence is approved (Tjosvold, Johnson, & Fabrey, 1980), but also for whom no competence evaluation was mentioned (Tjosvold, Johnson, & Lerner, 1981).

**Advice 8: Orient students towards mastery of the task—instead of demonstrations of performance—when they discuss conflictual issues.** Research on achievement goals generally distinguish performance goal (the goal to prove one’s own competence) from mastery goal (the goal to learn the task). Darnon and Butera (2003) showed that when students are instructed to master the task, conflicts appear to be beneficial for learning. Under performance instruction, conflicts tend to deteriorate it.

In summary, confrontations may create the conditions for cognitive development and reasoning, but these benefits can be hindered and confrontations can be disruptive. Conflicts are constructive when the elaboration is of a socio-cognitive nature, and less beneficial or even disruptive when the elaboration is relational (Carugati et al., 1980-1981; Mugny et al., 1984). This dual dynamic has been also addressed in the domain of social influence research, and this is relevant to the context of learning, since in most learning situations new knowledge is introduced through social communication and social interactions (Butera, Johnson, Johnson, & Mugny, 2002).

**Social Influence in Aptitude Tasks**

In a way that is analogous to the social development approach, conflict elaboration theory proposes that social influence is based on conflict. It conceptualizes influence patterns as a function of the conflict elaboration determined by the nature of the task with respect to which the influence occurs. Aptitude tasks have a particular relevance for our argument here. These include reasoning, knowledge acquisition, accuracy judgment tasks, problem solving, and learning tasks. They are characterized by two dimensions: (a) there is a correct answer but individuals do not know what this answer is, and (b) giving a correct or an incorrect answer orders individuals in terms of their ability (Butera & Mugny, 2001; Mugny, Butera, Sanchez-Mazas, & Pérez, 1995; Quiamzade & Mugny, 2001).

**Advice 9: Promote the search for the correct response instead of the quest for recognition of positive competence.** Judgment discrepancy in aptitude tasks introduces uncertainty regarding the correct solution as well as uncertainty regarding one’s own aptitudes. Consequently, a divergence in judgments can have two kinds of implications, one concerning the search for the correct answer, and the other related to one’s own competence and the avoidance of appearing incompetent. These two issues give rise to two contrasting elaborations of the conflict. The first issue concerns a properly epistemic or sociocognitive elaboration, and relates to knowledge acquisition; the second is concerned with a more relational elaboration associated with social comparisons of competence. The type of conflict elaboration that occurs depends on three factors: perception of the source’s competence, perceived self-competence, and the threat the source’s competence may represent for targets (Mugny, Butera, & Falomir, 2001; Quiamzade & Mugny, 2001).

**Competence threat**

**Advice 10: Reduce competence threat.** Competence threat is induced when social comparison occurs exclusively in terms of a competence differential (who is more competent: the partner or me?), and not in terms of the epistemic validity of contrasting judgments (which response is more appropriate?). The attention on the competence differential focuses the divergence of judgment on self-worth, particularly with respect to competence, and not on task processing (Mugny et al., 2001).

At first glance, it might seem that competent sources are necessarily threatening because their competence can be viewed as prevailing over one’s own. This would prevent any deep influence, whereas less competent sources would allow targets to elaborate the message (Maggi, Butera, & Mugny, 1996). Nevertheless, research has indicated that source competence by itself does not predict social influence patterns. The nature of the social comparison and the consequent threat to competence needs to be considered. For example, confrontation between an incompetent source and an incompetent target leads to constructivism (that is, a deep integration of the information provided),
unless the comparison of competencies is made salient. In one experiment (Butera & Mugny, 1995), participants were required to evaluate their own and the source’s competence in a way that either did or did not reinforce a competitive comparison of competencies. The results showed that when a competitive social comparison of competencies was induced, subjects denied the source’s competence and tried to confirm their own point of view instead of solving the task in a dynamic similar to downward comparison (Wills, 1981).

Confrontation with an expert is threatening to one’s own competence when adopting the expert’s response implies acknowledging one’s own incompetence (Butera & Mugny, 2001). Indeed, results show that when targets who perceive themselves as competent are confronted with an expert source, they are motivated to deny the source’s competence in order to preserve their own competence rather than trying to solve the task. When the threat to competence is removed, participants attribute competence both to themselves and to the source, and process the information provided by the latter more deeply (Mugny et al., 2001).

Representation of knowledge acquisition

Advice 11: Encourage decentering and the representation of knowledge as the construction of complementary positions. In Piaget’s view, progress results from the integration of alternatives at a higher level. This is possible through a decentering process that allows children to defocus from their own point of view. Results from the social influence literature have suggested that decentering can have positive effects on cognitive outcomes such as reasoning (Butera & Buchs, in press). Decentering seems to be spontaneously associated with different kinds of low-status sources, such as minorities and novices. Nevertheless, decentering can also be induced by orienting knowledge representation. This has been done by presenting two different representations of the same object as being complementary and positively interdependent (Butera, Huguet, Mugny, & Pérez, 1994). When knowledge is presented as a form of coordination of complementary points of view, cooperation is considered as an appropriate way to behave with respect to others (Gruber, 2000). Indeed, with decentering, participants confronted with a high-competence source no longer felt threatened and displayed better performance than when decentering was not introduced (Butera, Mugny, & Buchs, 2001). These results show that inducing a representation of knowledge as a coordination of complementary points of view can reduce competence threat and enhance learning.

Advice 12: Match the influence relationship with the audience’s expectations. Some studies have investigated the matching of democratic/authoritarian style of legitimate epistemic authority with perceived competence (Mugny, Quiamzade, Pigière, Dragulescu, & Buchs, 2002) and level of college students (Quiamzade, Mugny, Dragulescu, & Buchs, 2004). This research focuses on contradictory information integration. Results suggest that students who perceive themselves as less competent or students at the beginning of a university course benefit from a unidirectional influence relationship with a source adopting a rather authoritarian style. In contrast, students who perceive themselves as more competent, or students more advanced in their university course and who value their intellectual autonomy, will require a more flexible relationship with a source employing a more democratic style.

Thus, research suggests that a parallel can be drawn between real-world interaction situations and experimental social influence situations (Butera, Caverni, & Rossi, 1999; Doise et al., 1998). In both cases, two regulations of conflict, epistemic or relational, can be identified. Epistemic elaboration corresponds to a cooperative relationship and focuses participants on task resolution, leading to positive cognitive outcomes (information processing, reasoning, learning). In contrast, relational elaboration focuses participants on a competence evaluation. This elaboration can direct the relationship either towards the acceptance of one’s own inferiority (compliance, informational constraint) or towards a competitive confrontation (debate, conflict of competences, downward comparison). Relational elaboration has been shown to be less beneficial than epistemic elaboration.

Conflict in Peer Learning

Recent research has also investigated peer learning in light of cooperative processes and social
influence approaches. These two approaches have been integrated by investigating the effect of resource interdependence (the way information is distributed between partners) during dyadic cooperative learning (Buchs, 2002; Buchs & Butera, 2001). In positive resource interdependence conditions, students receive only a part of the information they need and access the other part through their partner (Ortiz, Johnson, & Johnson, 1996). Working with complementary information in this way induces decentering. In resource independence conditions, students have access to all the information before discussion and so possess identical information.

**Advice 13:** Beware of the detrimental effect of competence threat when your students work on identical information. Results indicate that working on identical information enhances confrontations between partners, as well as the competence stakes (Buchs, Butera, & Mugny, in press). In this context, the partner’s competence appears threatening to one’s own competence and is detrimental to learning. Thus, the more students perceived their partner as competent (self-report measure), the more poorly they performed (Buchs et al., in press). This result was replicated when a partner’s competence was manipulated through the quality of information transmission from a confederate.

**Advice 14:** Beware of the quality of information transmission when your students work on complementary information. Working on complementary information, in contrast, encourages positive interactions and strengthens cooperation and involvement (Buchs et al., in press). Nevertheless, learning is not invariably positive in this condition of informational dependence and requires good quality informational input from the partner. In contrast to the identical information condition, partner competence is positively linked to students’ performances. Thanks to decentering, the other’s competence is no longer threatening, but is useful instead.

In brief, the teacher’s use of resource interdependence can lead to different interaction patterns between students and orient conflict regulation, which in turn affects social and cognitive outcomes.

**Conclusion**

Teachers should note that research has suggested that relational regulations focused on competence evaluation are less beneficial than epistemic regulations focused on task resolution and progress. In some cases, relational regulations are conceived just as a cancellation of the benefits of epistemic regulation. In other cases they lead to poorer cognitive outcomes than a control condition, with respect to both compliance and competitive confrontation.

**Advice 15:** Pay attention to social comparison dynamics. Darnon, Buchs, and Butera (2002) have proposed that relational elaborations may not merely block the benefits of epistemic elaborations, but can also orient attention toward self-regulation processes and activate defensive strategies; both reactions are detrimental to cognitive outcomes. Thus, teachers intending to use conflicts to improve learning and cognitive outcomes should pay attention to social comparison dynamics. If competence is at stake, benefits from confrontations can be undermined.

Johnson and Johnson (1993) and Johnson et al. (2000) have suggested that, generally speaking, acquisition is good in controversy, moderate in debate, and poor in concurrence seeking. Therefore, even competitive confrontations can be considered better than confrontation avoidance. This point might reduce educators’ suspicion regarding academic conflicts and encourage them to favor confrontations occurring during their classes. Moreover, stimulating cooperation and focusing on positive social interdependence could be a good way of preventing the potential detrimental effects of relational elaborations and help educators implement constructive confrontation situations. For this purpose, working on representations of knowledge acquisition by presenting knowledge as a coordination of complementary points of view can be useful. Inducing decentering stimulates cooperation and learning.

Finally, the above approach, in addition to having generated a great deal of basic research, has been complemented in Europe by a series of studies examining the social construction of cognitive competencies in problem-solving tasks close to those actually used in school (Foot & Howe, 1998; Perret-Clermont & Nicolet, 2001; Perret-Clermont, Perret, & Bell, 1991). This approach has confirmed that overt confrontations in which participants argue their points of view are positive for school tasks.
**Final advice:** Try it! Your students will benefit and your teaching will become more effective.

### Notes

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1. In both conditions, subjects have to allocate points regarding four competence attributes. When a focus on competitive comparison is stressed, points have to be divided in a negatively interdependent way: a total of 100 points must be split between the source and the self (so the more points that are distributed to one, the less the other can receive). In contrast, in independent allocation, 100 points can be accorded to the source and 100 points to the self, so that the issue of competence is less competitive.

2. In order to illustrate this point, dyads were presented with a box with two openings. One member of the dyad was asked to look at one opening (and saw a square) while the other was asked to look at the other opening (and saw a triangle). It was then demonstrated that in order to have a complete view and to acknowledge that the object in the box is a pyramid, both points of view have to be coordinated.

### References


