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Socio-cognitive conflict

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Definition

The term "socio-cognitive conflict" has been coined to label a cognitive conflict experienced by two persons here and now and resolved socially, i.e., a dynamic process that is elicited when different (initially incompatible) points of view have to be coordinated in order to find a solution that is acceptable for all partners (Doise, Mugny & Perret-Clermont 1975; Mugny, Doise & Perret-Clermont 1976). This coordination might be silent but most often takes the form of gazes, gestures, joint actions, verbal exchanges or argumentation. Of course, the conflict is not always perceived as such nor is it always happily solved. This requires joint attention to a common object, mutual respect and a "thinking space" sufficiently secure (emotionally, relationally, institutionally and culturally) for the growing child, or for the adult learner, to dare explore alternative views while still preserving basic identity needs. Empirically studying socio-cognitive conflict is a way to observe the emergence (the genetic moment of “rising”) of a given, momentary (and, under certain circumstances, soon to be stable), new "possible". It calls attention to the transformative and inventive (not only reproductive) experiences of knowledge construction: it is possible to learn even without an expert on board. It opens the way to educational designs developing the skill to confront, reflect and imagine alternative possible worlds.

Synonyms: conflict of centrations; conflict of perspectives; social cognitive conflict.
Keywords: socio-cognitive conflict; perspective taking; thinking; development; learning; conceptual knowledge; social interactions; dialogue; intersubjectivity; cooperation.

Introduction

Inspired by both Piagetian developmental psychology and social psychology, initial investigations on socio-cognitive conflicts were first conducted in children, opening a field of investigation known as "genetic social psychology" (Psaltis & Zapiti 2014). Its first findings (see: Perret-Clermont 1980; Mugny, Perret-Clermont & Doise 1981; Doise & Mugny 1984) concerned mainly the impact of such confrontations on the cognitive development of the individual partners. They evidenced that the need to (try to) reach a joint agreement necessitates and gives rise to an integration of the different views in a new cognitive organization at the collective and the individual level. In Piagetian terms, this meant that socio-

cognitive conflicts were observed to be occasions for the children involved to move to a more advanced operatory stage, because of the cognitive restructuration that the *here-and-now* encounter with a dissenting peer had required.

This fact established, further research looked into the conditions under which socio-cognitive conflicts in children and adults are likely to occur, and then on how they are solved with or without cognitive gains. As research developed, in the laboratory and in the field, with varying methodologies, the discussion extended to different levels of analysis in order to account for the communication processes involved; the construction of the intersubjectivity between the interlocutors (not only peers but also experimenters gaining the research status of interlocutors); and the role of institutional settings, social representations, norms and signs in framing the thinking spaces and the conversation modes.

Beyond the implications for psychology, educationalists (in schools and in vocational training) have been interested in the meaning of these findings to design activities that offer participants opportunities not only to learn about already established knowledge, but also to develop as creative thinkers exploring new ideas and (co)-constructing their minds. In such a perspective, children and adults (including researchers) are not only adapting to the world (and to knowledge) as it is (or seems to be), but they are also developing the possibility of confronting, reflecting and imagining alternative perspectives, alternative possible worlds (Iannaccone et al. 2019).

Opening the possible in terms of cognitive growth

The concept of socio-cognitive conflict describes moments during which thinking is an activity that is simultaneously social and cognitive, open ended, and susceptible to leading to reasonable resolutions. Socio-cognitive conflicts can lead to learning gains not explainable in terms of imitation, tutoring or social influence: hence they allow for a type of learning that is not only a matter of appropriating existing knowledge but also of creating new understandings. This prevents learners from being reduced to the status of targets of transmissive actions via an asymmetrical power game. They are now observed as (co-) authors of their own development and engaged in making sense of their social and material world in order to transform it or to adapt to it and to act (Perret-Clermont et al., 2019).

What happens when two people have conflicting views on a precise matter and, not withstanding that they are both convinced of their standpoints, they nevertheless accept to respect and explore the others' perspectives (see: perspective taking) in order to establish if they can make a decision based on a shared understanding? Such a process does not necessarily presuppose that one is "right" and the other "wrong", nor that each one has a part of the "truth" and that a mere addition of their perspectives will lead to the solution. It is simply an open situation of unexpected cognitive conflict that obliges each interactant to become aware that a different perspective on the same common issue exists, embodied, here and now, in another person. When a common decision is needed, and the emotional situation is safe, it encourages the

interlocutors to make efforts to decenter from their own perspective. The fact of having to acknowledge this divergence without having to comply to the other's opinion opens *possibilities* for thinking because it leads the interlocutors into questioning (openly or silently) their premises: Why is the interlocutor saying this? Why is one partner not understanding what the other is saying? Isn't it evident? Is it possible to defend and coordinate these varied views and arguments to move beyond the dissonance that they create? Of course, on the way, the partners in the discussion might discover that they do not share common ground. But this will appear only if there is a socio-cognitive conflict that raises the issue.

The cognitive process elicited thereby is a complex one. It is dynamical, requiring distance from one's initial position in order to place it in a larger scenery that includes the other's position. This opens the possibility of creating new perspectives; it is a social and dialogical process. It requires open-ended (and sometimes partly implicit) argumentation based on the presupposition that a possible common answer is probably not known yet and has to be constructed and defended.

"Each possible is the result of an event that has produced an 'opening' within itself i.e., a 'new possible', that in turn, if actualized, will create new 'openings' on other possibilities" (Piaget 1976, p. 282, our translation). What might be confusing in Piaget's approach is his (over)-emphasis on the logical side of actions, tasks and interpersonal coordination. But his inspiration can be useful in conducting minute descriptions of logical reasoning in interaction, and in particular in conflictual intellectual interactions (Schwarz et al. 2008). They shed a new light on the interdigitation of social, cognitive, and emotional processes and on how they weave the material and symbolic context that they are part of (Grossen 2001).

Genesis of the concept of socio-cognitive conflict

Why was this concept proposed? In the 1970s, in schools, in academia and in politics, the debate was hot between proponents of different types of explanations of why learning was (un)happily affected by social processes. The most widespread expectation of teachers was that they had to present proper models to their students, who would then learn by imitating (or memorizing) them adequately. The transmissive model was predominant, with a static understanding of what knowledge is, and a prescriptive view of teaching. Most teachers had no experience of how knowledge is produced. Social class differences in school failure were reported by sociologists and known by the public. They were commonly interpretated as "socio-cultural handicaps" (whatever this meant). Some years later, these social representations of intelligence, learning and teaching became an object of research (Gilly 1980; Mugny & Carugati 1989).

Academic empirical research already had a century of experience addressing issues of intelligence, learning and development in different languages. But in the general context of the Cold War, the different theoretical lines developed in the East and the West tended to ignore each other. In Geneva, a younger generation was eager to recover this multidimensional heritage and debate, reading Piaget, Mead, Wallon, and the first available translations of Vygotsky. They had urged Piaget to create a chair of social

psychology. He had invited Serge Moscovici, Claude Flament and then Willem Doise. It is in this very specific context that a new line of empirical investigations started in Geneva, concerned with the role of *socio*-cognitive conflicts in the development of the mind.

The notion of "conflict" is central to explain development in Piaget's theory. Bärbel Inhelder was launching innovative research projects in order to provide descriptions of how children face cognitive conflicts in various activities and learn from this "micro-genetic" experience (Inhelder et al. 1992). She was careful to distinguish the two types of conflict and of learning. In type 1, there is tension between what is expected and what happens: children (because of their action scheme or representation or hypothesis) have an expectation that is partially or totally contradicted by their observations; this creates a disequilibrium, a kind of intellectual dissatisfaction. In type 2, children are experiencing two contradictory expectations because of two different schemes (or hypotheses) that are opposing each other. A very puzzling situation. The concept of "socio-cognitive conflict" was then introduced to draw attention to the social dimension of these conflicts: the cognitive contradiction experienced by the children usually takes place during a joint activity or a conversation. If they interiorize this social experience, they can reflect on it. Hence, it is central to investigate the role of the alter in such situations. Smedslund (1966) made the case that "conflicts of communication" played a key role in development. Empirical studies were needed to exemplify Smedslund's assertions and to examine under which conditions the alter did not need to necessarily be a more expert person but could be a peer who is just as ignorant (see: ignorance). This was the task of the first experimental studies of socio-cognitive conflicts. Later on, Kohler (2020) will describe the complexity of these socio-conflicts that occur often simultaneously on different planes and in interdigitated ways, for instance, when students, among themselves or with a teacher, discuss a problem in physics: they hold different perspectives, past experience, semiotic resources, motivations, intentions and goals.

Research on socio-cognitive conflicts and developmental gains

The concept of "socio-cognitive conflict" has been used in quite a variety of lines of research, ranging from mere replication (or contradiction) of the initial results to raising fundamental questions in psychology, for instance: the difference between knowledge and social representations; the role of cognitive processes in social influence; the distinction between the psychological vs the epistemological subject; emotions and identity (Rijsman 2004) as part takers in these socio-cognitive processes; asymmetric relations as limits to shared thinking. The concept of socio-cognitive conflict has also inspired innovations in educational design, in particular in cooperative activities (Roselli 2000; Buchs 2004), including computer supported collaborative tasks aimed at learning through participation in argumentative conversations (Schwarz & Baker 2017). In no way is it sufficient to just put children together to work around a task and see them progress. Due to a lack of space, the profound transformations that the educational strategy needs to undergo in order to take seriously into account the

learners' perspectives within the complexity of real field situations will not be addressed here (but see, for instance, Barth 1994; Perret & Perret-Clermont 2011; Kohler 2020).

The proponents of the concept of "socio-cognitive conflict" had first to establish that socio-cognitive conflicts were observable and could be studied. Then, empirical research was needed to verify that the expected cognitive gains were developmental, i.e., pertain to "deep learning" (operatory change) and are not mere repetition of expressions heard, imitation or compliance. This was done starting with a four-step paradigm (pre-test, interaction or control phase, post-test 1, post-test 2), inviting children to solve, alone or together, various problems in different experimental conditions. The two post-tests, generally conducted a week and then a month later, allowed a follow-up of the effect of the interaction in terms of learning gains and to assess their solidity. Perret-Clermont (1980) also used these post-tests to observe how the newly developed concepts generalized to other tasks. This has evidenced a change of "structure" (as Piaget calls it) of the child's mind, i.e., a move from the initial stage of development (pre-operational) to the next one (operational). This was important because of the on-going debates around the distinctions between *surface learning* (retrieving information on the physical and social world, and on one own's actions, gained via observation or transmission from others) vs *deep learning* (developing internal operatory structures that organize the mind); adopting an *opinion* vs *constructing a concept*; expressing *one's own understanding* versus *complying to the expectations* of a social demand. Piaget touched on this in the introduction to his 1929 book but had never investigated empirically the dialogical and methodological dilemmas that he high-lightened there. This will be done in further development of the research around socio-cognitive conflicts (Sinclaire-Harding & al. 2013).

In order to have a chance to video-record socio-cognitive conflicts, experimental situations were carefully designed with an effort to optimize the chances to generate such conflicts and their positive resolution thanks to a meaningful task with a common goal requesting a joint decision (e.g., a fair sharing of juice; the joint reconstruction of a village; etc.): children who didn't know each other previously and, as a consequence, had no image of the partner's "intellectual authority"; peers with different views according to the pretest but developmentally not too far apart in order to be able to understand each other; and a welcoming atmosphere (closer to play than to schoolwork). The positive results obtained with this initial design led to a systematical examination of the factors affecting progress after socio-cognitive conflicts.

Even a more advanced peer is likely to make developmental gains due to an interaction with a less advanced partner. This was the most striking result in the first generation of studies. Intermediate subjects are shown to progress even when they have been confronted with a non-conserver. Furthermore, in settings that offer different viewpoints (e.g., sitting at different places in the village task), children tend to have different perceptions and progress even when they are similarly incompetent (Carugati et al. 1979). The incompatibility of their responses requires them to think differently. This finding was soon meticulously replicated by Ames & Murray (1982), and this process further investigated by others at

different ages (e.g., Schwarz et al. 2000). Vertical relationships with authority figures are likely to induce the child into giving priority to the management of the asymmetry via obedience or compliance. Horizontal relationships - such was Piaget's claim - are more likely to allow the child to focus on the task and its logics, and peer interactions are then more likely to support cognitive development. But experimental results report that being an adult does not make it impossible to have proper potentially fruitful socio-cognitive conflicts with children: this happens when an adult, in a not too "awkward" manner (Lévy & Grossen 1991), gently contradicts the children's assertions while helping them to maintain their attention centered on the cognitive issue (and not on an implicit power game). The beneficial social interaction does not require well-conducted explanations nor sophisticated verbal productions. It does not even require a solution to be found on the spot. Being puzzled is essential. And this sets different socio-cognitive strategies on the move (Gilly et al. 1988; Laux et al. 2008).

Another set of results concerned children from disadvantaged backgrounds. Different studies, among which Coll Salvador et al. (1974), had shown that, even on Piagetian tests, at a given age, they are more likely to perform poorly in the pretest. This was replicated in the socio-cognitive conflict studies but only for the pre-tests because the amount of progress evidenced after the socio-cognitive conflict is such that finally, in the post-tests, their rate of success is similar to the children of more advantaged origin (Perret-Clermont, 1980; Mugny, Perret-Clermont & Doise, 1981). This "recovery" is all the more remarkable considering that the phase of social interaction lasted only 8 to 15 minutes. Similar findings were found when comparing rural vs urban children (Nicolet 1995), or boys and girls (Perret-Clermont & Schubauer-Leoni1981). In this last study, fine grained analyses were conducted to understand what was happening during the pretest that could account for these inter-group differences. They evidenced that middle-class children are more likely than the others to progress already during the pretest. Hence pretests are not neutral. To middle-class subjects who remain centered on the cognitive issue (not being too intrigued by the social meaning of the adult's conduct or fearful of his judgment), they offer potential socio-cognitive conflicts via the adult's questioning (Lévy & Grossen 1991). From there on, the classical 4 phases paradigm will be reconsidered as offering 4 events to the children forming a designed "experimental micro-history" (Perret-Clermont & Schubauer-Leoni 1981; Tartas et al. 2016): the type of interpersonal relationship experienced during a phase affects the possibilities of the next phase not only because of the learning gains, but also via the transfer of social scripts, emotions and interpersonal attitudes.

How is the socio-cognitive conflict resolved?

The replications and variations of these studies concerned, among others: the characteristics of the tasks including the norms and emotions related to them (Doise & Mugny 1984; Nicolet 1995); the institutional contexts (Iannaccone & Perret-Clermont, 1993); the material and social sources of feed-back (Schwarz & Linchevski 2007); the narratives justifying the action (Light & Perret-Clermont, 1989); the social representations (Psaltis & Zapiti 2014). These so-called "independent variables" are in fact dependent on how the participants interpretate the situation and their role and identity. This meaning making activity

will (or not) allow them to identify a conflict and engage in different strategies to solve it. A cognitive restructuration of the issue is not the only possible outcome, some social solution might be privileged (Sommet, 2014; Butera & al. 2019): children are alternatively likely to be overall concerned by being polite, honoring a friendship bond, saving face, winning what they (wrongly) perceive as a competitive game, or defending the (supposed) prerogatives of their gender position. Researchers (and teachers) are quite likely to miss the fact that what the children are trying to manage is often not what they expect.

Conclusion

In education, as Grossen (2008) remarks: emphasis is often "put on mutuality, sharing, negotiation of a joint perspective or shared meaning, coordination, intersubjectivity, etc. All these aspects are indeed fundamental in communication processes but it should not lead us to ignore the fact that communicative processes are made up of convergences and divergences between the interlocutors, and that tensions (or conflicts) are part of any conversational dynamics" (p.248). Not only intra-mental processes are at work but also inter-personal ones. Facing disagreements in a constructive way creates new horizons for the thinkers. The concept of "socio-cognitive conflict" has called attention to the possibility that these tensions open for cognitive growth.

Research has explored the multiple conditions that must be fulfilled for socio-cognitive conflict to lead to better cognition. They concern the care to be taken in order to construct a "thinking space" (Perret-Clermont 2015) sufficiently secure (emotionally, relationally, institutionally and culturally) for the growing child, or for the adult learner, to dare explore alternative views while still preserving basic identity needs. The art of creating such thinking spaces awaits more contributions from educators, mediators (Greco, 2020), diplomats, and artists. Yazgi & Sandoz (2021)'s present participative theater play is a nice example of an invitation to decenter in order to invent possible solutions to tensions.

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Cross-references

emotion
goal
here and now
ignorance
intelligence
Mead
norms
perspective
perspective taking
Vygotsky

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