

1

Beginnings

Our past is always constructed in our present. The events we have lived many years ago come to our memories with a significance that partly fits our lives today. The *madeleine* Marcel Proust tasted with his tea in a Parisian café did not simply bring back the bygone world of his holiday at his grandmother's provincial home but also created a new perspective *hic et nunc* that fitted his current state of mind. And while the events described in *À la Recherche du Temps Perdu* are quite anodyne, we are captivated by Proust's regeneration of these events.

We, the authors of this book, both now live far from the places where we were born. We are both specialists in the study of a special form of talk in education – in argumentation and learning. This might seem a very narrow kind of specialisation, and indeed, the number of scientists who focus on this topic is very small. However, scientists in the learning sciences talk a lot about argumentation. It may even be said that the term 'argumentation' is overused. It sometimes means discussion, or debate, dispute, or simply talking together whilst exploring reasons for or against an issue. One of the themes of this book is that types of talk have distinctive learning outcomes and that what we call *argumentation dialogue* is a very specific kind of talk with potentially considerable learning outcomes.

This is our present state of mind. It does not come from nowhere. It certainly comes from the general *Zeitgeist* that envisions education through dialogue, far from authoritarian teaching. It also comes from the teachers we met and who shaped our aspirations. But it also comes from our past experiences, and since we are both interested in forms of talk, our memories regenerate bygone events of our youth with the significance we give them today. We thought that before beginning this book, we could tell

a bit of our past histories, particularly in relation to dialogical and argumentative practices or indeed their absence.

I (BBS) was born in Paris. Among my first memories as a young child was the fur craft workshop that my father ran and that partly served as our home. Many Jewish immigrants from Eastern Europe organised themselves in groups of co-workers in workshops after World War II. Unending discussions took place in the workshop. I heard them discussing, haranguing, or bickering in their broken French, Yiddish or Hungarian whilst hammering leathers on large wooden boards. The topic of their discussions was often politics, as post-war difficult times drew together communists and anti-soviets. Although I did not understand most of what was said, I felt that the discussions were not only about politics. Somehow, they were not 'about' anything in particular but were rather a way for these men to articulate themselves in a place where they still felt like strangers. The tone was mostly passionate and often adversarial, but the workers seemed to like it. I also felt that the prosody of the discussions was different from what I heard outside. At that time, I attended an *école laïque*, a typical state school with republican values. There we learned to recite, to present, to be clear and precise, and also to avoid emotional turns of phrase.

The maternal side of my family was Algerian. My uncle was a rabbi who emigrated in 1962 after he flew from Algeria to France when independence was proclaimed. He taught me the basics of the Hebrew language and of biblical exegesis. I remember him incessantly asking me about the meaning of verses. The invariable reaction to my interpretations was a challenge to them or even a rejection. Since I was methodical, I tried to remember the interpretations he suggested, but when asked about the same verse a year later, the restitution of his own interpretations did not satisfy him. And his (auto)objections seemed to me quite reasonable. My learning experiences with my uncle were very different from those I had in school. The difference did not concern only form but also the epistemological. I experienced with my uncle the interpretation of texts as a divergent and infinite quest, whilst at school it was clearly convergent and finite. Very early on, at school, I learned to develop ideas in a thesis-antithesis-synthesis pattern. And I liked it very much. And I also liked to translate texts from Latin and Greek, believing at that time that understanding a difficult text was a matter of using voluminous dictionaries well. To the contrary, I felt quite irritated by Hebrew exegesis, according to which what seemed to me to have been accepted was always called into question.

I preferred what I grasped then as the sincerity and method of my experiences at school to my encounter with Jewish texts.

My clear preference for the methods of thought that I learned at school put me often in curious situations at home. I remember an anecdote that struck me when I was an adolescent. I began being interested in mathematics and enthusiastically engaged in solving difficult mathematical problems. My mother – a real Jewish mother, who must be aware of all that her children are doing – asked me one day: ‘My son, could you tell me what a polynomial is?’ I opened my mouth to answer in the way I had learned at school, giving a clear definition, but I suddenly realised that such a formal answer was senseless for her. I remained speechless and bashful. She had been a seamstress for years in the workshop my father ran, and like many immigrants, she had worked very hard to give her children the opportunities to ‘succeed in life’ in a way that had not been available to her. I felt guilty that I was . . . unable to tell her anything about the ideas I manipulated daily, whose reality seemed to me evident. I was unable to share with her my excitement about something I did intensively.

I began my university studies in mathematics. When I entered the *École Normale Supérieure*, I used books such as the *Bourbaki* series that gave the illusion of beginning from scratch towards the elaboration of sophisticated constructs through deductive steps and definitions of new mathematical notions. The memories from my studies with these books, taught by illustrious mathematicians who wrote them, are still present in my mind. I remember that the apparent simplicity of the writing concealed a very high degree of complexity. Whenever I saw ‘it is clear that . . .’ in the middle of a proof, I knew that I would probably have to invest a lot of effort in order to see such a crystal-clear truth. Also, I never understood why new ideas and new definitions were introduced. I should confess that these books were too difficult for me. However, I was mesmerised by the beauty of their presentation. I felt as if a secret was to be found therein and that the reward of my efforts would be the revelation of this secret. In parallel with my studies at the university, I began learning Talmudic texts. These texts typically consist of protocols of discussions amongst sages. These protocols often show undecided and open discussions and multi-level commentaries on those discussions without clear definitions of the ideas at stake. Although the mathematical and Talmudic worlds seem to have several similarities, they are very different. The first relies on clear definitions and inextinguishable proofs. The second always leaves room for doubt and for new directions. And as a young adult, although I appreciated both worlds, I saw no connection between them.

I enjoyed very much earning what is called the *Agrégation de Mathématiques*, a French certificate for teaching mathematics at the college level. This certificate, which focuses on how to present/teach all possible topics in undergraduate studies, reflects another positive aspect of French education: the taste for encyclopaedic overviews of ideas at an elementary level. For the first time in my higher education, after five years at the university, I could understand the significance of ideas presented very abstractly, as well as their usefulness. And like all my pals, I became very fluent in lecturing on exciting ideas in mathematics and telling stories about them. For the first time in my life, I could speak mathematics.

I then began teaching mathematics in France and then in Israel at various levels. My first experiences in different cultures and different levels were frustrating. I failed to convey a sense of aesthetics in mathematics or its appeal to rigour and method. I realised that mathematics learning in classrooms is sown with failures or major obstacles, but I especially experienced a very poor level of talk in mathematics classrooms. My mathematical stories were not of interest to my students, and I often failed to understand them. Even so, I specialised in mathematics education, wrote textbooks and elaborated computerised environments to help students learn difficult ideas in mathematics almost only by themselves. I completed a PhD in Mathematics Education. My supervisors, Maxim Bruckheimer and Tommy Dreyfus, were mathematicians who had contributed to the promotion of mathematics education as a new research field. However, I felt that in order to understand why and how children engage in productive talk in mathematics, I should suckle from more general breasts. My experience at the Learning Research and Development Center (LRDC) at Pittsburgh University was a turning point in my career. The center had been dominated in the past by influences of the cognitive revolution (with Allan Newell and Herbert Simon at Carnegie Mellon University in Pittsburgh). However, under the direction of Lauren Resnick, LRDC instigated new directions in learning and instruction, especially the incorporation of cultural psychology into the study of learning. I capitalised on the extraordinary diversity of first-class scientists at LRDC to complete my professional development in the learning sciences. To cite only a few influences, I learned from Micki Chi, Gaea Leinhardt, Stellan Ohlsson, Leona Schauble and, of course, Lauren Resnick during my post-doctoral studies. Resnick's article 'Reasoning in Conversation' (Resnick et al. 1993) is certainly a landmark in the encounter between learning processes and forms of talk. In the early nineties, the relations between

forms of talk and reasoning processes were not articulated yet. However, the word ‘argumentation’ was in the air.

My first studies after I was appointed at the Hebrew University in Jerusalem were dedicated to talk in mathematics classrooms. I hoped that I could adapt general methods I learned at LRDC to mathematics. However, I quickly understood that the topic of mathematics is one of the most recalcitrant to new forms of talk: it is too authoritative and too much centred on logic and formal proofs. I began articulating a new pedagogical vision. I began using the term ‘argumentation’, but I did not know exactly what I meant by it, from an educational point of view. I remember very well a beautiful cruise on the Ionian Sea in 1997. I took with me the *Fundamentals of Argumentative Theory* by Frans van Eemeren and his colleagues (van Eemeren et al. 1996). Each of the islands I visited was the occasion for reading a new chapter. Sea (water), sky (ether), earth, and sun (fire) – almost nothing else on those splendid and scorched places. I finished the book at the end of my adventure, knowing that I had touched the foundations of something big that would excite me in the future, but I did not know how because the book was about well-established theories with no apparent implications in education. However, I fuzzily felt that the numerous references of the *Fundamentals of Argumentative Theory* to Greek and Roman rhetoric could also mean that fruitful bonds could be created with other cultures and especially with other contexts. I knew that the educational context that was missing in the book was a new world to be discovered and studied.

During the next years of my career, I realised that it is very difficult to create conditions for productive argumentation. Somehow, the educational system has lost a tradition of oral learning practises. Progressively, I became aware of the fact that my Talmudic training bore very rich habits of talk that had been gradually abandoned. In addition, I discovered that I lacked definitions and theoretical tools to define what I envisaged by argumentation in an educational context. Two encounters were decisive in this matter. First, I spent a sabbatical at the University of Neuchâtel, where I met Anne-Nelly Perret-Clermont. My visit helped me to appropriate tools from social and cultural psychology. My collaboration with her also helped me to understand the work done by neo-Piagetians with respect to socio-cognitive conflict and to realise that my interest in argumentation for learning was theoretically and practically worthy. My encounter with Michael Baker was a pivotal event in my scientific development. His articles in 1999 and 2003 already bridged between the general argumentative theory and the learning sciences by focusing on changing the epistemic

status of propositions in collaborative interaction. I felt that Michael had created the beginnings of bridges between the two and that, nevertheless, a lot of work was still to be done. A third thing that I discovered – I think quite in parallel with Michael – is the incredible potential of computerised representational tools for facilitating unguided argumentation. Accordingly, I capitalised on European Union-funded projects to develop with my research team and other European institutions' two tools, Digalo and Argonaut, for facilitating productive argumentation and its moderation by a teacher.

Like Michael, I felt like a builder who can create a new (virtual) reality in which talk is richer and can help to discover new knowledge, often without the help of a teacher. I found that when an adequate design is created, the resilience of what happened in argumentative settings was impressive. Animated and rich discussions remain in our heads or in our hearts, like the disputes there at my father's workshop. Somehow, creating adequate designs, even if it involves immense work and demands a lot of creativity, generates talk in places where people were almost silent. With meticulous designs, students can engage in vivid discussions in mathematics instead of inscribing arid proofs. In history, they can engage in heated debates, they can speak about the past, and they can speak about themselves. In civic education, they learn to live together, not by learning about democracy or about kinds of political regimes, but by participating in discussions in which they do not agree with the other but respect him or her, listen to him or her or build on his or her ideas. To some extent, I feel that I modestly contribute to the writing of a new history – the history of educational talk – and that I assist in one of its most exciting periods.

I [MJB] was born in Yorkshire, the largest county of the north of England, to a long line of Welsh coal miners and tenant farmers on my father's side and an undeterminably long line of Jewish and gentile tailors and seamstresses on my mother's side.

I suppose that my first argumentative opponent was my father – or, rather, he was a non-opponent because arguing with him was not permitted. So I carried on the argument with him in silence. In any case, talking was not his strong suit in general: that was my mother's domain (when asked a few years ago if she had any hobbies, she replied 'Yes, *talking*'). But there was no debate with mother either; rather, a flowing conversation about previous conversations – what she said and he said and I said, and 'No! He didn't say that, did he?' And 'What did you say in reply?' – and questions about what I felt or liked.

But I must have felt a need to express my voice, or at least to be able to show that my father was, of course, wrong on everything (of course, he was not), but in a way that was somehow *not* like the affectively charged, intense flow of words of my mother. I think it was some kind of desire for dialogue, looking back, where dialogue was a way of peacefully and rationally talking about things that was the opposite of authority, violence and feeling. Where was that world I imagined and yearned for? It was first of all in the public library.

A world I discovered very young. The hushed silence, the smell of books and the varnished oak shelves – the latent tension and seduction. I saw the rows of shelves and realised that here lay another world, my world. After a while, I discovered the section marked ‘Philosophy’ and delved into it because, contrary to sections such as ‘Geology’, ‘Sport’ and ‘Music’, I had no idea what that was. Bertrand Russell’s *Problems of Philosophy* made me realise that a world of reason and argument (and beauty) existed on subjects that seemed to have something to do with important questions in life. Then, reading Russell’s *Why I Am Not a Christian* – would I be refused if, as a thirteen-year-old boy, I tried to borrow such a contentious book? – enabled me to become an argumentative opponent, a young rebel, in a different sphere of life. They (the elders) politely suggested that I might want to consider leaving the Protestant church to which my parents had sent me, once, at the approach of my confirmation, they had asked me the stupendous question: ‘Do you believe in God, Michael?’ ‘What does it matter what I believe?’, I thought, ‘God simply *is*; that could have nothing to do with my belief.’ So I replied (the insolent boy that I was): ‘I don’t understand the question.’ Words could be part of a dialogue game and have consequences, too.

I studied philosophy and psychology at the traditional University of Durham (UK), not so far further north from where I had been brought up. There they taught us that philosophy – the analytical philosophy of the 1970s and preceding decades – simply *was* argument, logic, reasoning, dialogue, debate. The budding philosopher was supposed to be a sort of ‘scientist of language’, who defended no particular point of view and who should be able to analyse and expose the errors in any point of view whatsoever! How marvellous: that should enable me to say something smart about anything and everything. Another thing I learned was that these kinds of rational, calm, logical discussions seemed to be in some way specific to a particular social *milieu*: this was how English gentlemen and gentlewomen spoke. And I was not one of them. Therefore, did I in fact have the right to learn how to talk in that way? I assumed I did.

What playful joy to be able to discuss endlessly arguments for and against all and any views, most of which I didn't really understand anyway.

But argumentation, dialogue, getting to the foundations of things had become part of who I was. My PhD in cognitive science, at the Open University (UK), completed in 1989, was largely about that, brought up to the tastes of the day: a computer programme that was (barely) capable of negotiating and arguing about the nature of knowledge. Was it in some way dedicated to my father and, in a quite different way, to my mother, neither of whom, in their different ways and for their different reasons, did that kind of thing?

I went to live and work in France after my doctorate and was fortunate enough to have been recruited by one of that country's foremost fundamental research institutions, the *Centre National de la Recherche Scientifique*. There I fell into the bottomless pit of trying to understand the 'full' complexity of argumentative phases of dialogues between teenage children in science classrooms. This was real unconstrained dialogue, not the kind of short example that logico-pragmatic researchers invented to illustrate their theories. I suppose that my approach was Wittgensteinian (the 'first' Wittgenstein), in that having thrown at the data all the logico-pragmatic machinery I could muster, I still felt that the most interesting part of what was happening was precisely what could *not* be captured by such analysis (analogous to the 'mystical' of the *Tractatus Logico-Philosophicus*): conceptual shifts, interpersonal relations, emotions.

I began to read French philosophers from the inside – inside the culture, the place and the language. It was a transformative experience. I had been taught, in England, that philosophy *was* argumentation, dialogue. Now I found that for twentieth-century French philosophers – they were not in fact really 'philosophers' from the point of view of Anglo-American philosophy; rather, they were literary, social and political theorists – dialogue was the opium of the people, a kind of verbal smoke-screen elaborated by the ruling class to cover up fundamental class struggles. Strangely, it was only French-language religious philosophers – whether Catholic (F. Jacques) or Jewish (E. Levinas) – who considered dialogue and argument worthy of philosophical development. Here philosophy was not 'argument' – what was the point of all those arguments that led nowhere and changed nothing? – it was the activity that creates concepts (G. Deleuze) or that was oriented towards social action. And people didn't seem to 'debate' around the dinner table and on television in France in the way they did in England, either. This was no reasonable discussion between gentlemen and gentlewomen in a philosophy seminar;

it was a verbal fight with no holds barred. So what was the point of arguing anyway if it became a verbal fight?

It was at this time, in the early 1990s, that I first met Baruch Schwarz, in Lyon, as he was passing through for a research workshop. I discovered his research on argumentation in the math classroom, and it seemed to correspond to everything that I was not. Whereas I had got lost in microanalysis without end, the work of Baruch had breadth, as well as depth and rigour. He had mapped out a whole new field of argumentation in education, the types of tasks where argumentation could be of some benefit, the ways in which it could lead to learning, how teachers could support it, the role that computers could play and so on. So we had a field to work in.

Over the coming years, we organised seminars together on argumentation and education, and we brought together a small group of like-minded researchers. What drew us all to this? It seemed so obviously important because the ability to argue, to debate, rationally was, after all, one of the pillars of the European university since its inception. So why weren't there more of us, working on this? There were – or at least people who took up the idea of 'argument' in education as a fashionable or progressive banner. And then there was the matter of computers, designing interfaces that students could use to create diagrams of arguments together. And there were unwieldy projects financed by the European Union that enabled us, each with his own project, to get funding to go into classrooms and see what kind of culture of argumentation and debate could be found there. We were both involved in series of such projects for over fifteen years.

To close this autobiographical reflection on dialogue and argumentation, I would like to tell a story about a school in which I did field work with a younger post-doctoral colleague (François-Xavier Bernard) on the southern outskirts of Paris¹. This was a technical high school, where the unsaid truth was that it was for the children who weren't so academically minded. We went there, to experiment with software that enabled children to debate societal questions (such as the advisability of French nuclear energy policy) in small groups with the help of a teacher who had been specially trained in the use of media in education.

Apparently, the study simply didn't work. The students (around sixteen- or seventeen-years-old) refused to argue, to debate, in the way that we wanted. They played around and wrote to each other on the computer in the way they probably spoke to each other outside the classroom, with a special kind of slang inspired, on the outskirts of Paris, from gangsta rap videos. 'But Monsieur, we can't do this, don't you get it?', said one of the

boss boys of the class, ‘We’re bad students!’, he laughed, together with the rest of the class. This made me think of an accusation that a French school teacher had made to me over ten years before according to which, in working on argumentation, I was unfairly only catering to the good students, the ones from well-to-do families. It seemed that she thought that argumentation, with its noble ancient philosophy and French private Catholic school ancestry, was not for the ordinary masses.

I refused to believe it.

Any rational researcher would have given up and gone to another school where the children were, for whatever reason, more cooperative. But we decided to stay with the teacher and her class to the end of the study, months later. Taking a much closer look at the way in which the students discussed, speaking to each other, or via the computer, we found that, of course, they were able to argue; their reasoning was just as subtle as anyone else’s. That much was obvious, but their subtle reasoning was wrapped up in a kind of discourse, a way of speaking – insults, jokes, slang and all – in which one does not usually expect to find it. We had to abandon the study in the end, when one day a group of boys started fighting in the classroom (not about the debate but about sneaking onto others’ computers to delete their work and write obscenities in its place). The teacher said stop; with the introduction of that new way of working in the classroom, it had simply got out of control.

I know that that teacher, who said to me well over ten years ago that education founded on argumentation, debate and dialogue was only for the smart bourgeois kids, was totally wrong. It is for everyone; it’s a psychological and communicative skill shared by everyone that can be channelled towards educational ends. It is simply that, at first, when I spoke in that gentleman’s discussion at a bourgeois English university, with my northern England accent, my companions no doubt thought I was less smart than they because they couldn’t at first hear beyond my accent to hear my arguments. I had no such accent when I wrote.

These were conversations, discussions, disputes or debates that we had carved into our memories as testimonies of our life with others. For us, the people arguing in the fur atelier, of a father’s refusal of argument, of the English gentleman’s practice of debate in a bourgeois university, the kids in a tough school in the Paris outskirts who could argue but didn’t . . . all remain present as vivid *milieux* that moulded our selves. These are not random social discursive practises; something intense emerges from them. Of course, the term ‘intensity’ is totally fuzzy. Argumentation is about