

BOREL AND GAMESMANSHIP

MARK GORESKY

In his 1998 *Notices* article, Borel described the enormous effort and meticulous care that went into the writing of the Bourbaki works. He went on to express his pride in the fact that the authors of these works ultimately remained anonymous. But his favorite story of hidden authorship concerns what is now commonly referred to as “Chevalley’s Theorem”.

After Borel heard C. Chevalley first lecture on this theorem, he told Chevalley that he needed to have the same result for characteristic $p > 0$, and did Chevalley’s proof work in this case? When Chevalley did not answer, Borel began to pester him at least to publish the proof so that it could be referred to and modified as necessary. Chevalley, according to Borel’s story, felt the result was too trivial to merit publication. But Borel persisted, and eventually in a fit of exasperation Chevalley gave Borel his notes, saying, “Do whatever you want with these!”

Indeed, the notes did not cover the case of characteristic p , but only a few extra remarks were needed. So Borel, following Chevalley’s notes, wrote up the theorem including the characteristic p case, added a footnote to say that A. Borel would be using the characteristic p case in a forthcoming paper, put Chevalley’s name on the manuscript, and gave it to A. Weil, who was the editor of the *American Journal of Mathematics*, for publication.

There were a few tense moments when Borel and Weil feared the ruse might be discovered, particularly when the list of accepted papers was circulated among the associate editors, which included Chevalley. But they surmised correctly that Chevalley rarely looked at his mail, and it was not until the bound volume arrived on his desk that Chevalley found the paper with his name on it. His surprise and confusion turned to anger. Chevalley stormed into Borel’s office. “What is the meaning of this?” he demanded. “You told me to do whatever I wanted with your notes, and that is what I did with them,” Borel answered. Now recalling the conversation, Chevalley realized that he had lost the argument and left the office, closing the door behind him.

Borel could be terrifying, and it was rumored (especially among the younger mathematicians) that if you wanted to stay healthy, you would best keep out of his way. But I believe his sometimes gruff demeanor was simply an expression of his natural competitiveness and self-confidence.

I recall a fancy meal in a formal French restaurant in Zürich on the occasion of Borel’s sixtieth birthday, when our whole party—Borel, W. Casselman, R. MacPherson, and I—was almost asked to leave by the manager after Borel had taken out his pen and corrected the French spelling and grammar on the huge glossy menu. We were saved, I believe, only by Borel’s distinguished appearance and commanding presence. At the end of the meal, Borel removed from his vest pocket an envelope containing a new credit card, removed from his wallet the old credit card, put the new one into his wallet, and broke the old one into about ten pieces, making a little pile beside his empty wine glass. During a lull in the conversation, I picked up two of

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these pieces, studied them, and said to him, "Why, it appears that you have broken the wrong card." He looked at me defiantly without saying a word. After several moments of silence I ventured, "You don't seem to be very worried." This was the cue he had been waiting for. "Well, in the first place," he admonished, speaking slowly and deliberately, "I checked it three times before breaking it up. And in the second place, and even more important, I am becoming familiar with your peculiar sense of humor." With that, having beaten me at my own game, he broke into laughter, which quickly spread to the whole table.