

Interview: Intense press coverage prompts new expeditions to Dyatlov Pass

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Johan Gaume and Alexander Puzrin conducting field work in Davos, in January 2021. Credit: Jamani Caillet / EPFL

The Dyatlov Pass Incident is a mystery that still reverberates through the scientific community and divides public opinion. In January 1959, a ten-

member group consisting mostly of students from the Ural Polytechnic Institute, led by 23-year-old Igor Dyatlov, set off on a 14-day expedition to the Gora Otorten mountain in western Siberia amid extremely challenging weather conditions. The expedition met a tragic end: nine members of the group were found dead several days later, many with fractured bones and other severe wounds. The incident spawned a number of far-fetched theories, from murderous Yeti and foul-play by the KGB to secret military experiments. These theories were further fueled by the Soviet authorities who, after the briefest of investigations, attributed the deaths to a "compelling natural force." Of the ten hikers, only Yuri Yudin, who turned back after falling sick on the second day of the expedition, survived.

The incident resurfaced 60 years later when a journalist from New York called Gaume on his cell phone in Lausanne. The reporter asked Gaume, who heads EPFL's Snow and Avalanche Simulation Laboratory (SLAB) at School of Architecture, Civil and Environmental Engineering (ENAC) and the WSL Institute for Snow and Avalanche Research SLF, to help him uncover what really happened to the members of the fateful expedition. Gaume then contacted Alexander Puzrin, Professor and Head of the Institute for Geotechnical Engineering at the ETH Zurich, to assist him with his research. In January 2021, the pair published their findings in *Communications Earth & Environment*.

Their theoretical model indicated that a rare type of small slab avalanche could have injured the hikers and led indirectly to their deaths. But this rational explanation, which contradicted the Dyatlov community's folklore, came under fire. Doubts over the validity of their work triggered a rollercoaster of support and criticism before the theory was finally accepted by the Russian scientific community, after the local authorities reopened the investigation in 2019. This recognition meant a great deal to the researchers—not because they had shed light on a tragic series of events that will never be fully understood, but because it

demonstrated the power of science to accurately and reliably explain and predict natural phenomena.

Their research, and the responses to it, are explored in a follow-up paper published in *Communications Earth & Environment*. In the article, the scientists delve into the human side of their work and the incredible impact it generated, while confirming some of the assumptions behind their model. In this interview, Puzrin and Gaume reflect on the intense press coverage and how it has changed their lives.

After you published your first paper, you fielded calls daily from journalists from publications such as the *New York Times*, *National Geographic* and *Wired*. How did it feel being in such high demand?

Puzrin: At first, it was kind of exhilarating to know that our paper was getting so much attention. It was also a rewarding experience. But as time went on, I found it harder to deal with the constant barrage of calls. It was in the middle of the COVID-19 lockdown, so I was at home with my wife and four-year-old son. My phone never stopped ringing. In the end, it became too much.

Gaume: I had a similar experience. The constant calls became so much that we had to put our foot down. We'd have journalists calling us in the middle of the night because of time-zone differences. And oftentimes, they'd ask us to respond to criticisms of our theory. There's only so much pushback you can take.

Who was criticizing your theory and for what reasons?

Puzrin: After the extensive coverage of our first paper, the story was naturally picked up by the Russian media. Some tabloid newspapers

challenged our assumptions and other parts of our work. For instance, they claimed there wasn't enough snowfall in the area at the time, or that the wind wasn't strong enough to pick up and carry such a large volume of snow. In short, our model—including the most substantive elements—was being picked apart.

Gaume: The critics took aim at two key aspects of our theory, arguing that the slope wasn't steep enough and the conditions weren't right for an avalanche to be triggered. People living in the area swore that they'd never seen an avalanche on the Dyatlov Pass. Most of the criticism came from relatives and conspiracy theorists. We felt as though many people were rejecting our scientific approach because they wanted to maintain a shroud of mystery around the tragic fate that befell the hikers.

Why do you think that was the case?

Gaume: For relatives, the avalanche theory is hard to stomach because it suggests that these seasoned hikers were somehow to blame for their own deaths. As a cross-country skier and winter sports enthusiast myself, this is an issue I'm particularly sensitive to. I've always been careful to explain that experienced skiers aren't immune to the threat of avalanches, precisely because they're able—and sometimes willing—to push themselves to their limits. A beginner skiing down a marked-out piste at a ski resort has almost no chance of causing an avalanche. But a seasoned off-piste skier, for all their skill and experience, is vulnerable to the threat of avalanches. In the Dyatlov case, the group had to assess the likelihood of an avalanche based on the information they had at the time and from the snow surface. When they pitched their tent, the possibility of an avalanche was impossible to discern. It's also important to remember that the Soviet authorities didn't put forward a plausible explanation at the time. They opened an investigation shortly after the tragedy, only to close it again very quickly, concluding that a "compelling natural force" had caused the deaths of the hikers. That

created space for conspiracy theories to emerge. And I guess some people were unhappy that the most scientifically credible explanation was advanced by a group of foreign researchers.

You helped organize three subsequent expeditions to the Dyatlov Pass. What were your objectives, and what did you find?

Gaume: The first two expeditions were carried out for a documentary being filmed by Matteo Born. One of them was in the summer of 2021, where we used drones to measure the angle of the slope in the area above where the group had pitched their tent. We found that this angle is greater than 30 degrees, meaning that an avalanche release was possible. Another expedition took place that winter and revealed traces of a possible [avalanche](#) at a nearby slope. However, we were not entirely sure about the type of instability since we had only far-field video footage.

Puzrin: Therefore, we decided to carry out a third expedition in January 2022 to investigate the slope further. Our goals here were to run another drone survey, generate snow profiles, perform stability tests, and conduct other research, but the weather conditions were so difficult—in fact, similar to those experienced by the Dyatlov group on the last day—that we weren't able to run any tests. However, the two expedition leaders, Oleg Demyanenko and Dmitriy Borisov, achieved something much more valuable than any test result: they filmed evidence of two recent snow-slab avalanches. This finally confirmed that avalanches do indeed occur on the Dyatlov Pass.

As scientists, how did you find treading the line between reason and folklore?

Puzrin: At no point did we set out to provide absolute closure on this

case. Our main aim was to develop models to describe, explain and predict natural phenomena. It's a painstaking process that involves a huge amount of trial and error before you develop a model that works. I've devoted the last 30-plus years of my life to this cause. Our research into the Dyatlov Pass Incident was no different: it was a series of intense highs followed by deep lows. One moment we thought we'd developed a robust theory, only to be plagued by doubt again soon after. The fact that the Russian [scientific community](#) accepted our findings—and that our hypotheses were confirmed by recent field expeditions—means a great deal to me. Not because we can confirm the exact series of events that led to this tragedy over 60 years ago; we'll never be absolutely certain what happened to the members of that group. But because it reaffirms my faith in science. For me personally, this whole experience has been about standing up for the scientific method as a valuable, reliable way of explaining natural phenomena.

More information: Alexander Puzrin et al, Post-publication careers: follow-up expeditions reveal avalanches at Dyatlov Pass, *Communications Earth & Environment* (2022). [DOI: 10.1038/s43247-022-00393-x](#).
www.nature.com/articles/s43247-022-00393-x

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