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Linking geology and art: observations to interpretations of the Sanetsch Fold, Helvetic Alps

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Illustrations of field outcrops are a fundamental tool for scientists in both research and learning as an important method of documenting interpretations. Whether field sketches, photos, concept diagrams or virtual outcrops, researchers through time have used a variety of different ways to visualise outcrops. What do the views and annotations a researcher chooses to represent a field outcrop tell us about the evolution of understanding and uncertainty in geology?

Here we investigate a variety of illustrations of a well-studied outcrop in the Helvetic Alps of Switzerland, at the Col de Sanetsch. The Urganian limestone is folded into a 500m high NW-facing fold pair, exposed in the South face of Spitzhorn (2807m). The fold has a complicated structural history, as it contains an array of SE-dipping normal faults which have been overlapped by Cenozoic turbidites before folding. Views of the outcrop are very accessible, by cable car or road, but the entire outcrop is a cliff and almost completely inaccessible.

During field mapping in 2022, watercolour sketches of the outcrop were completed from different viewpoints, along with photos and GPS points. We compare these with historical illustrations of the outcrop by other researchers, from sketches in field notebooks to photographs and figures in published papers. By analysing how the outcrop has been drawn and therefore how the researcher has perceived the geology, we can better understand how they have worked and where they fit in the evolution of ideas. This has implications for our own work, finding the right tools and the best perspective to clearly illustrate our work, understand the science and communicate interpretations.