**Box 1**—A screenshot of an online exhibit of the manuscript and panel collection **1247** at the NLN, which was shared—during the C19 pandemic—in connection with a series of seminars connected to this collection of panels and manuscripts from B.M. Keilhau's and P.C.B. Boech 'mountain journey' in 1820. My 2021 contribution here.

When I was concluding my doctoral work it became evident that my interest with *visual* models. I went from the ARENA-programme (Advanced Research on the Europeanisation of the Nation-state) to SINTEF (the Norwegian Foundation for Research on Science and Technology), where I worked from 2000 to 2007. Since then I have worked at KHiO (Oslo National Academy of the Arts) as a Professor of Theory and Writing, from 2013 onwards. In academia model-thinking was overshadowed critical theory and history: a situation not dissimilar from the situation in the art-field.

My contacts with OSEH—and in particular the project Critical Petroaesthetics—has given me a similar impression. But the framework of environmental humanities provided me with the opportunity to work at developing model-thinking on the backdrop of natural history. In particular, the invitation to discuss a collection of panels and manuscripts (in this order, owing to the priority I have to the visual contents of this material) from geologist B.M. Keilhau and his friend the naturalist P.C.B. Boech in 1820: with a perspective from Koldedalen in Jotunheimen d. July 14th.
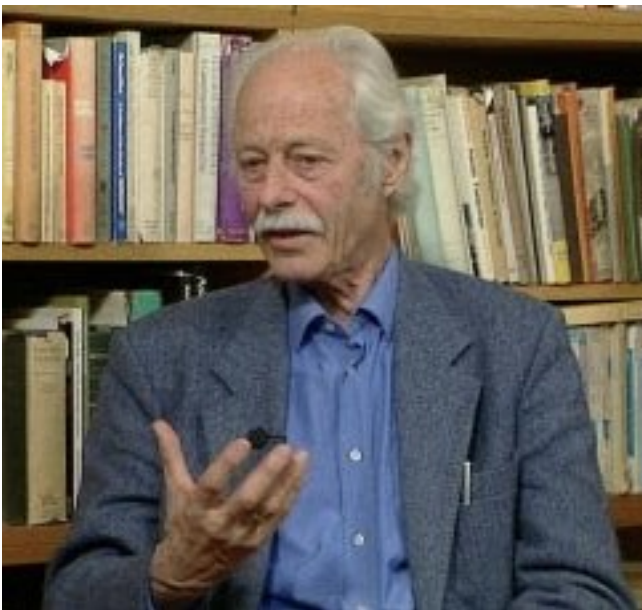
Box 2. portrait of F. Barth (1928-2016) in his office at the Museum of Natural History, Oslo

The date of the storming of the Bastille in 1789: the French Revolution, also called the bourgeois revolution. B.M. Keilhau was a member of the Physiographic Society, along with e.g. the mathematician Niels Henrik Abel. Together with P.C.B. Boech they embarked on a Grand Tour in Europe. A year after the field-survey to what became Jotunheimen, a law abolishing aristocracy in Norway was adopted by the national parliament in 1921 (when it operated under the *aegis* of the Swedish protectorate, where aristocracy was not abolished). The drawings and notes from the field-trip were published as a logbook (in an expanded version) that year.

It was the property of the Norwegian Trekking Association, and played a role in establishing Norway as a country of *mountains* (not only defined by fisheries and farming). The collection eventually became part of the NLN archive (Na-
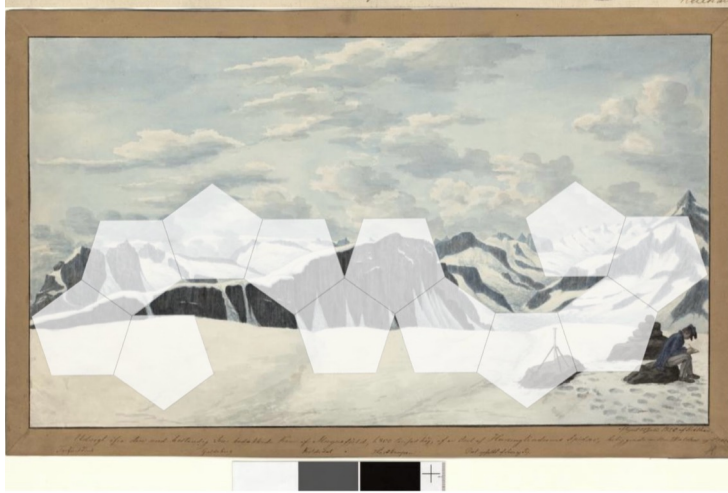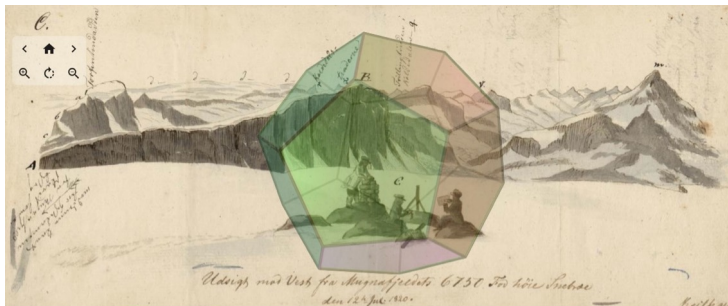
tional Library of Norway) hosting a series of 3 seminars on the document during the C19 Pandemic. The seminars came to gravitate from the historical (**I**) towards the artistic perspective (**III**), *via* Seminar II which was dedicated to the survey, drawing and cartography of the mountains. They were part to the *series 112*, named after the *environmental* **§** of the Constitution (1814): the legal frame-work of legislation, which does not rule in court, but rules Parliamentary legislation.

My interest in models comes from the predilection for *arbitration* before court cases in the longer Norwegian tradition: a tradition that goes back to King Magnus Lawmender (1274); an early example of Jus Commune, in European history. It challenges us to understanding the nature of *truce*, in anticipation and postponement of more rigid court-rulings, in the form of parley that is transactional rather than procedural (which, to some degree, eschews formal definition), as a resident model within the formal legal institution. It is a resident principle/practice of the legal institution, as of old.

Returning to Keilhau. The panels became a crossroads for a number of different interests: my work on *citizenship* in the doctoral thesis, the study of what it can be without the framework of the State (my fieldwork on humanitarian aid in Sarajevo during the war 1992-95), exploring the dynamics of disordered systems (an idea received and delegated from my mentor Fredrik Barth) from geology on this material, using a method analysis through visual diagrams. The interest for this kind of model came from *games theory* (Fredrik Barth) and *topology* (his mentor Edmund Leach).

Topological models define in the twilight-zone of mathematics & engineering: incidentally, Edmund Leach's background (Tambiah, 2016). Fredrik Barth did not have this background, but articulated an interest in the same direction when he developed his understanding of models from John von Neumann's *games theory*. My interest in models also define in the limbo *between* abstract algebra *and* topology: featuring the idea of *mapping* in homomorphism, and its topological relative homeomorphism. Historically this interest emerged with forebears who had background in *law*.

A research problem that interests me mirrors across this gap. In abstract algebra: here homomorphism features the mathematics of resemblance—featuring a domain of departure and a domain of arrival, where the algebraic *identity* between two terms $/f(T_1 + T_2 + T_3 + T_4 + T_5 \ldots) = f(T_1) \oplus$

$f(T_2) \oplus f(T_3) \oplus f(T_4) \oplus f(T_5) \ldots /$ conceals a *paradox*. Namely, the possibility that what we call a *sum* may *vary in different fields of application* (hence the notation $/+/$ vs. $/\oplus/$). In the present example: the sum $/+/$ of the *elements* T_n (…) and elements of the *sum* $/\oplus/$ *resemble* one another— 'same-same but different'. Confusing?

No, they can be the *same*, *similar*, *different* and *other*. It is for us to determine *analytically*. Clearly, this is *not* math, but a mathematical idea that is clarified as we turn to topological models in their analytical application. The concept of *adding* is different (**Box 3**): the lower method of adding which is linear *step-by-step* is not the same as the upper method of adding which runs *criss-cross* and is matrixial. In topological terms it features a hyper-dimensional rotation: as we move from 2D- to 3D-understandings. Conjecture: moving between 2D and 3D is method of triangulation involving imagination *and* symbolism: *a training ground for democratic citizenship?* Model as resident principle?

Box 3—When pages of note-taking *add* page-by-page (lower view [painting: Carpelan 1821]) it is *not* the same sum of elements, as when the elements interact and the *sum* features a whole (upper view, Keilhau 1820). The *dodecahedron* (unfolded below and enfolded above) is a *random* example modelling 'the problem of the sum'. When going beyond the visual metaphor above, Buckminster Fuller' Dymaxion map demonstrates the principle of a *visual model*: i.e. that the grid holding the world map in the foldout, in turn becomes held by the world map when mounted into an icosahedron.