



Box 1—Say that what we see in this photo reduces to a wall of an aqueduct (a), some greens (g—nettles, moss etc.) and a broken fence (f). We can write them as the sum $a + g + f$ if we can move each of them and do whatever we want with them. A sum of *elements*. But they are also elements of a *sum*. Here we are interested in the *sum* and the relations the elements may have to one another by virtue of being held by that sum. Then we will write it $a @ g @ f @ t$. We define this sum as *proximal* (cf, below), while the first is fragmental.

When we talk about *proxemics* we can readily give into the lure of considering *personal*, *proximal* and *perennial* (PPP) as different sizes to fit: as small, medium and large. However, the PPPs feature different ontologies. The *perennial* I define as nature in aspects that is so removed from us that we consider it “eternal”. The *personal* defines nature within the scope of our needs. The environmental *exchange-pattern* we understand as problem-solution is like this: solving a problem *moves* it from the *perennial unto* the *personal*. Then it *next* becomes “perennial” to people *buying into* it.

The reason for this is simple: other than to the *problem-solver*, the solution becomes just part of the world for all *users* who didn’t solve the problem. The underlying problem-solution *nexus* becomes part of the horizon (here, called the *perennial*). The seal of *usership* is divided: 1) the solution caters to one’s needs [*personal*], 2) the problem-solution nexus is lost to a depth beyond our reach [*perennial*]. What still misses is a definition of the *proximal*: structurally located *between* the *perennial and* the *personal*. A between-space where problem-solution *doesn’t* apply. Clearly.

In the proximal zone we shift between *confusion/trouble* on the one side, *clarity/awareness* on the other side. The ratio trouble/clarity does not work by the tick of problem-solution: it defines the *proximal* as a zone that appears to unfold under a different set of dynamics, based on resemblance and complexity. It eschews what one might call the *extended math* of accountability: that is, math that relates problem-solution in *story*. However, there is a real issue that it cannot/doesn’t deal with. Which is the considerable amount of time spent/energy exchanged in the *proximal* zone. Clearly.



Box 2—Here, the proximal sum features an aspect that was absent in **Box 1**, since someone has tied together the elements of the sum, with elements that are *made*. In this case, a work of mourning a broken friendship. Coming to terms with trouble is *not* problem-solution. Acting within the proximal can bring clarity in life-processes alongside it (i.e. proximal).

The issue that I would like to address as directly as possible is how mathematics can unfold differently than as the *narrative of cause-effect* (which has been the main narrative of math in STEM): one that is differently involved *than* as a performative cogwheel in the production of causal events (exchanges across the perennial/personal veil). By contrast the exchanges in the *proximal* between-space are *levelling* ones. Ones that make a variety of events *available* to one another, rather *than* causally wired. There are tons of relations like these in our lives. We can consider them as meaningful, but mainly on a note of entertainment.

They readily lend themselves to re/telling. And perhaps this is a way of hatching an understanding with *some* explanatory power. But mathematically speaking there are other things that we can do: such as, combining *drawing and hencing*. That is, activities that summon group theory and topology, before

calculus and geometry. Principally, because group theory and topology are involved with each other in a way that *resembles* how they conjointly blend into an environment: in aspects the *same, similar, different* and *other*. And therefore are apt to *model* resemblances in the proximal.

Scholium: what is called *homomorphism* in group theory is called *homeomorphism* in topology. Homomorphism is commonly defined as a *structure-preserving map between two algebraic structures of the same type*. But what prevents a homomorphism from being simply a tautology ($A = A$)? In topology, however, *homeomorphism* between two objects defines if *they can be deformed into each other by a continuous, invertible mapping*. These two definitions are *proximal* when a homomorphism in group theory is conceivable only *alongside* a topological homeomorphism.

The principle of proximity here determines the sense in which something can be *held* (because topological homeomorphism arguably *holds* homomorphism in group theory [i.e. it is handy to cut short of tautology]). Homomorphism and homeomorphism resemble each other in the sense that they are in aspects the same, similar, different and other: while topology features preservation through deformation (i.e. *drawing*), group theory preserves structure algebraically (i.e. *henging*). Conjointly, homomorphism and homeomorphism are held by *artistic* and *anthropological* extensions.

In my experience, so far, people in mathematics, humanities and social sciences react to this focus and these assertions as to “poisoned ivy”. Which is why I am inclined to start thinking of a cultural trauma in our civilisation (cf. Freud’s *malaise*). Let us assume that, at this level, that *trauma* is caused by *troubling resemblances*: that is, lacking in cogency and clarity, and therefore abandoned, then repeated. It is not likely that the trouble will dissipate, which is also why it recurs. This is one definition of trauma. That is, the recoil of something we are not ready to think, despite arguments.

My thesis is that the consistencies between drawing and henging, can hold topology and group theory if a *conjoint* application exists (in thought) and can be operated (by extension), it will be apt to model other resemblances. That is, it is consistent—by itself holding resemblance—with resemblances *in general*. And thereby will be able to model *specific* resemblances. Which is why we speak of a *model*, and *not* a theory. Which is not an anti-theoretical statement, but rather a statement on the importance of models *both* to description and to theorising. That is the point.

The fledgling experiments I have been doing with paper-models offer/propose a conjoint application, in which the principle of proximity is sustainable: that is, it can be held by the levelling between the two vantage points—topological and group theoretic—that triggers/reveals a contingent *levelling* with surrounding events and activities (which thereby can turn from troubled to clarified).



Box 3—the elements considered in this photo are a meadow, a fence, sheep and the branch of an elm-tree. The sheep are in a phase of become weaned from milk, and are given solid fodder. The sheep relish elm-tree and in the context it becomes a facilitator: a trim-tab/model. The elm-branch comes from an alley nearby leading up to the Hauge farm in Lærdal. It is related to Christopher Alexander’s timeless way of building, and his theory of centres.

Trauma can turn to epiphany, outside the therapeutic context: which is the point of *anaptúxis*. Bringing life to (the) matter, as a form of exchange within the proximal. Can we define this exchange *energetically*?

Yes, we can: if levelling amounts to hatching *trim-tabs* from general availability, moving from the general to the specific: relationships that do not determine or solve anything, but can *facilitate*. This is a different form of availability that can be achieved through the conjoint work of drawing/topology and henging/group theory. That is, if we can consider walking up a circle as a form of drawing; and henging as gathering the exchanges happening as a result. Drawing/topology: *what have we here?* [encircling]. Henging/group theory: *what does it hatch?* [from encircling]. Model: *how far has it come in terms that have already been achieved?* [levelling productive and receptive aspects of activities, revealing a life-form].