Fig. 1—Diagram of the live-session of the learning theatre (DE551 Synthesis course 2023), make by Annikken Wilhelmsen. The diagram at the backdrop of Fig. 3 is also by her. The three step activation of the swirl signature (top left): 1) what have we here; 2) where does it move; 3) how far has it comes in terms that have already been achieved.

When Louis Hjelmslev (1943) theorised *material content* and *material expression* his purpose was to delimit linguistics—the science of language—from what it is not: he relegated material content and expression to physics and (social) anthropology (Eco, 1976). That is, types of knowledge that are defined by very different methods: the one pledged to observation of laboratory experiments, the other to field observation. Or, in the broader scope, to experimental science and natural history. On the boundary to language we therefore find something partly this and partly that.

The field of linguistics would remain *dialectically* connected to this compound understanding—though by definition beyond its scope—while also feeding some basic assumptions on *materialism*. In other words, *dialectical materialism* is anticipated as much as it is postponed. Arguably, this deferral was also at work in what one might call *assumed* Marxism (i.e., turned into the *doxa* of political doctrine). I am referring here to the ambivalent relation to natural science in the USSR, where natural scientists had some slack to reflect independently on matters of society.

If we today may sense the necessity to return and query 'dialectical materialism' it is partly on this basis: as much as the North American corporate sector would like to take credit for being at the forefront of the development of AI, it is quite clear that a number of the contributors to the development of AI are from the USSR (or, more broadly, formerly communist East- and Central Europe). And the assertion on people from the natural science & technology sectors in this region were the most articulate on matters concerning social development, history and politics.

Fig. 2—A compression of the pictorial data from the live-session (sampled from the two preceding compressed handouts 3 & 4). The model moving from the signified to the signifier is sampled from Em Mikalsen's piece, based on the work discussed at the end of this compressed handout.

This observation is based on my fieldworks in Eastern-/Central Europa and the Balkans (Yugo-slavia) from the early to the late nineties. Proposition: dialectics and materialism were never strictly unified in the praxis that we are referring to here. Which is why we will turn to them separately here, and see if they can be unified within the makeshift framework of physics and anthropology: as inadvertently assigned by Louis Hjelmslev. At least, his work on the matter is timed to Hitler's defeat at Stalingrad in 1943.

Clearly, turning to Adorno & Benjamin's ideas on negative dialectics, it is possible to articulate dialectics by turning to the semiotic mediation between the material content and expression: as the *signified* and *signifier*. That is, moving back and forth between the *productive* mediation of the signified by the signifier; and the *receptive* mediation of the signifier by the signified: reception leading, as it were, to the materialisation of the production.

However, if left to this, this version of dialectics would remain idealist, if not tethered to a deeper practice-based understanding of materialism (featuring contrastive learning modes).

This is where we get to the basic methodological tenets of AI, which is really not new. What is emergent is the passage of the practice—which I will turn to shortly—from *poiesis* to *technè*. Which means that we need to address aspects of this passage which was already there (that is, within and beyond *digital* AI). In an interview by Jensen Huang, a day after the launch of GPT 4, co-founder and chief scientist at Open AI, Ilya Sutskever, who comes from the background referred to above, explained the basic tenets of the intelligence that we coin 'artificial'.

These tenets are: **1)** the amount of data needed for networked learning is defined by a *critical threshold* [i.e., criticality needed to bring stacking and overflow to an avalanche]; **2)** the source of networked learning lies in the *compression* of such data [i.e., the skills at this determines the possibility of networked learning]; **3)** networked learning ensues from programming directly from these data [i.e., the data produced by compression]. But nothing in the three preceding points has to do with technology strictly speaking, but with a kind of "non-pedagogical" form of learning.

That is, what we call—with a derogatory understatement—*rote learning*. In the *idealist* framework it is a form of learning that precisely can be relegated to machines, should the opportunity present itself. In a *materialist* framework, however, it constitutes a focal and valued form of learning. When coined as 'networked learning' it can readily be integrated into creative learning ecologies, such as featuring in the *learning theatre*, Cedric Price and Joan Littlewood's work with the *fun palace*, and Brian Eno's focus on *scenius* (rather than genius) in works of *musical & pictorial composition*.

That is, to name a few. Within this framework the collective materialisation of content generates the possibility for people to find their way: to individualise up to a point, to programme their activities up to a point, and communicate up to a point. Gilbert Simondon (1964) provided a foundation for articulating information in this framework, according to a definition of information not unlike Sutskever's definition of data. Here, information is not defined as the noise disturbing the clarity of signal—which is a projective ideology of authoritarian systems—but as material form.

Materialism, in this assignment, allows for the development of a generative practice relating to creations which—from the idealist vantage point—will be dismissed as idealist. In the learning theatre sessions in the final synthesis course, at KHiO's design department, the last project presented deserves to be mentioned here: while the reflective piece handed in by the candidate was *pervasively* incoherent, in an experimental attempt to convey its argument as a *private language*-content, her reading of it in the learning theatre came out as the *voice* of coherence.

In the scope of idealism, the compound work—piece and performance—presents a troubling incongruence (which will likely be dismissed for this reason). However, if the piece featured the compression of idiosyncratically compiled data from home-grown research, the performance a

programming of upcoming activities from this compression, then the compound demonstrates an alternative/materialist practice of information: the yield of compression is the pattern of *what has been removed*, which was implicit in the piece and *materialised* when it was performed. That *intelligence* generated in this way, is essentially *artificial*.
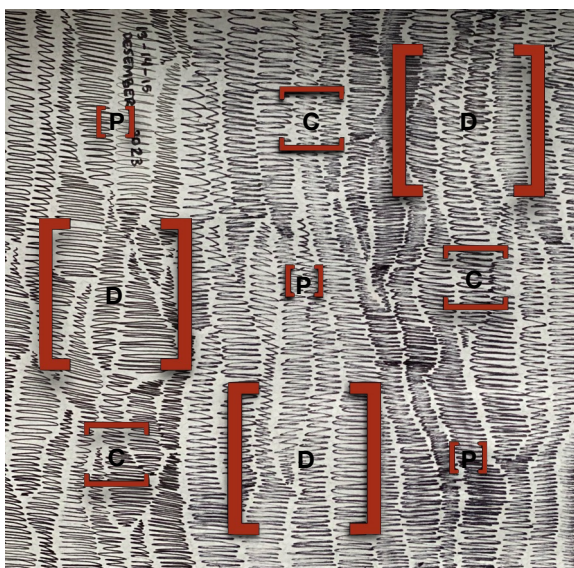
The problem, however, is that it is readily lost to idealism. Materialism, on the other hand, clearly offers the possibility of its being *held*. When the content materialises—by the act of staging the stage (i.e., the workings of the mousetrap)—as the witnesses to something that they did previously did not see, the immediate effect is that the collective materialisation brings up an affordance to *locate* the piece (as the placeholder of individuation). In sum, then the signified materialises collectively as contents, it shifts to become a signifier of the piece (as material expression). In this sense a signifier of the signifier.

Fig. 3—"rote learning": 1) **D** is data: 2) **C** is compression; 3) **P** is programming.