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In Modulation Mode: Factories of Knowledge

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"Welcome to the Machine!" This was the way the university welcomed students in a satiric drawing by the German artist and writer Gerhard Seyfried in the 1970s.[1] Taking a closer look at the drawing, however, the "machine" turns out to be more of a factory, because it arranges the automated mass production of the specific commodity of knowledge in the universities. Seyfried's knowledge factory also has elements of a ghost train (with all kinds of horrifying surprises for those riding it), a flipper device (the students as flipper balls being launched and propelled), a three-tier Nuremberg funnel (although knowledge here is funneled in – as it should be in a factory – in masses and anonymized). These kinds of illustrative transfers of central components of the factory as fordist core institution to other institutions have always been widespread. Yet what does it mean, when even at the transition to post-fordist modes of production the metaphor of the factory still continues to be applied to the university?

A "factory" is generally understood to be an assemblage of machines and workers, through which all aspects of production are striated, mechanized and standardized on the basis of the division of labor. An assemblage of machines and workers – that means

what is at stake here is the relationship between these two components, their exchange and concatenation. Karl Marx accordingly developed two different perspectives of the factory in the chapter about the factory in *Capital*[2]: from one perspective, it is the "collective labourer, or social body of labour" that determines the production process as "dominant subject". Here it is primarily a matter of the "combined co-operation of many orders of workpeople, adult and young, in tending with assiduous skill, a system of productive machines". From this perspective it is hence the living labor and virtuosity of the workers, who are responsible for operating and tending the machines with the help of their skill. Seen from the other perspective, however, the machinery comes into view, "the automaton itself is the subject, and the workmen are merely conscious organs, co-ordinate with the unconscious organs of the automaton, and together with them, subordinated to the central moving-power." Operating the machines here becomes service to the machine, virtuosity is transferred from the worker to the machine, the living labor of the workers is enclosed in the machine. And according to Marx, it is precisely this second aspect that characterizes the *capitalist* use of machinery, the modern factory system.

This view of the factory, reduced to one of two perspectives, as a capitalist usage of machinery turning subjects of production into objects of the machines, and turning machines into subjects, exactly corresponds to Gerhard Seyfried's view of the university as factory: it is not only knowledge itself that becomes a commodity here, but also the knowledge producers' modes of subjectivation – according to Seyfried's picture unambiguously identified as the subordination of the students, who thereafter appear solely as passive components of the knowledge factory, as formatted knowledge *re*producers.

Seyfried's picture identifies the university as factory and machinery: upon passing through the portal, the students immediately find themselves on a conveyor belt. They are sternly and constantly moved along with the aid of various rough mechanisms of drilling and machinic harassment: through the gears of basic knowledge, the disciplining sluices of exercises, the stress-presses of exams, the imprisonment of administrative rules, the mills of specialized knowledge, all the way to the final examinations that undertake the inclusion of the docile and the exclusion of the stubborn rejects. Exclusion is imagined drastically here as permanent removal from the knowledge factory, taken to the extreme in Germany of the 1970s as "employment ban". Inclusion, on the other hand, means a specific form of the segmentation of space, the hierarchical arrangement in space, literally the imprisonment into space. Within the territory of the university as factory the conveyor belt perpetually conveys the students towards uniformity as standardized graduates.

The main statement of this picture is simple: the university-factory is a monstrous machine, in which initially different and diverse students are turned into uniform people and made fit for exploitation in a uniform society. In light of the advanced conditions of the commodification of knowledge and the striation, homogenization and market-economicization of the universities, of course this metaphor of the university as factory appears more fitting than ever. But it does not go far enough.

Knowledge Production and Training as Permanent (Self-) Obligation

Seyfried's picture does not cover the potency of the actors, nor does it cover their entanglements. In analogy to Marx' one-eyed look at

the factory, it emphasizes the students as victims, constructing a sharp opposition between the institutional apparatus and the students dominated by it. It not only misses the contemporary amalgam of repression and students' self-government, but also omits all the other components of the factory university: the teachers in all their hierarchical gradations, the spheres of influence of the administration, and the many aspects of service, from the cleaning crew to the cafeteria and security staff, whether they are tenured or radically outsourced and precarious.

Even the image of the sincere and innocent first-year student, who trips uncorrupted over the threshold of the knowledge factory and is first exposed to the mechanisms of alienation upon entering the institution, is somewhat too simplistic – even for the situation in the 1970s. Today there are more and more experiences and accounts from students, who view their studies from the start purely as a transitional phase between school and job, who regard teaching as a service financed by their tuition and accordingly demand their share of co-determination: co-determination no longer as grassroots-democratic self-organization, but rather as a relationship between student-stakeholders and service-providing teachers regulated by exchange value.[3]

The ideal of a step into the university fostering emancipation from patriarchy, family, school and rural communities presumes that the subjects also want, plan and take this step. Yet the tendency seems to be that the step from the institutions of school and family to the university no longer takes place as a break, but rather as a seamless transition into a mode of existence of growing insecurity. If the transition from the institution school into the institution university (and perhaps also into the factory) was, in fact, once a promising new beginning, then it is particularly the seamlessness of this transition (like the merging of unpaid traineeships as a student

with precarious employment afterwards) that indicates the phases (and their significant territories) previously marked by institutions becoming indistinguishable, that also indicates the co-existence of various post-institutional forms of precarization. A central component of permanent self-discipline is the concept of life-long learning, but no longer as an emancipatory Enlightenment idea of adult education, as overcoming class boundaries and a vehicle of social ascent, but rather as a life-long (self-) obligation, as an imperative and life-long prison of continuing education.

The Mode of Modulation

The "Postscript on the Societies of Control" is probably Gilles Deleuze' most famous essay. Almost like a manifesto, the French philosopher summarizes here the theses of his friend Michel Foucault on confinement (and on its crisis, agony and what follows from that), inventing highly quotable formulations on the transformations from societies of discipline to societies of control, along with presenting his strategy of the *creatio continua* of concepts. As marginal as the article may have been for its author, its distribution and reception have conversely had a massive impact. However, the brevity and terseness of the Postscript also have a shadow side: despite all its conceptual potential, the weakness of the article lies in the rather un-Deleuzian pattern of a temporal sequence of discipline and control.

What we are experiencing is less to be explained as a linear development from the societies of confinement and closed milieus in the direction of societies of open circulation, but rather an *accumulation* of both aspects: the social subjugation of worker/student subjects comes along with the subjectivation mode of machinic enslavement; forced adaptation in the institutional

“internment” is accompanied by new modes of self-goverment in a totally transparent, open milieu, and discipline through personal surveillance and punishment couples with the liberal visage of control as voluntary self-control.

Modulation is the name of this merging of discipline society and control society: as the aspects of discipline and control are always to be seen as intertwined, their cumulative effect is even more evident in the example of the contemporary knowledge factory. While the students’ time is organized in detail in modules, molded, striated, and discipline is taken to an extreme, the modulatory state of learning never ends. “Indeed, just as businesses are replacing factories, *school* is being replaced by *continuing education* and exams by continuous assessment.”[4] Yet what Deleuze still describes as separated and subsequent attributions for discipline and control actually flow indistinguishably into one another: in the new mode of modulation, you never stop beginning, and at the same time, you never finish learning.[5]

The imperative of life-long learning implies a twofold appellation: an appellation to mold and modularize not only education or work, to stratify, striate and territorialize all relationships, the whole of life, and at the same time an appellation to be prepared to constantly change, adapt, vary. Modulation is determined by this twofold appellation, it is based on the interplay of the clean temporal and spatial separation and striation of the modules with the inseparability of endless variations boundlessly modulating. Whereas modulation means restraint in one case, the insertion of a standard measure, bringing every single module into form, in the other case it requires the ability to glide from one key to another, to translate unknown languages, to interlock every possible level. If the disposition of modulation consists on the one hand in forming modules, on the other it demands a constant self-(de-)formation, a

tendency to permanent modification of the form, to transformation, to formlessness.

edu-factory: Resistance in the Factory of Knowledge

Following Foucault/Deleuze[6], the first three qualities of the factory were: concentration, distribution in space, arrangement in time. As post-fordist forms of production became hegemonic, there was undoubtedly a process of dispersal, in the course of which the factories increasingly became diffused in society. The factory, now the *fabbrica diffusa*, no longer functions in this transformation simply according to the old mechanisms from the 19th century. Concentration, distribution in space and arrangement in time have not entirely lost their significance, but they have certainly varied their functions. The theory of the *fabbrica diffusa* was invented by the *autonomia*, the Italian struggles of the 1970s. For the Operaist and Post-operaist theories that emerged in and from these struggles, one of the most important components of the diffusion of the factories into society consists in the exodus of the workers from the factory. This is seen here not as an effect, but rather as the catalyst of the far-reaching capitalist transformations of the last decades of the 20th century (post-fordism, immaterial and affective labor becoming hegemonic, cognitive capitalism).

From and in this theoretical environment, a new generation of activist researchers has developed in the last decade, who have taken on particularly current interpretations of the knowledge factory and established their field of action far beyond Italy as a global one. Not without reason, in 2006 the transnational network of activists in the field of education gave themselves the name *edu-factory*. The factory that is meant here is again the *knowledge*

factory[7], but this time in its twofold form: the old figure of the university in its exchange relationship with the purported social and territorial outside, with society and the metropolis, but also the assemblage of institutions and cooperative networks of knowledge production that has become diffuse.

The edu-factory mailing list was started in 2006, dealing with themes relating to the neoliberal transformation of the universities and forms of conflict in knowledge production.[8] A first round of discussion focused primarily on conflicts at the universities, the second on the process of the hierarchization of the education market and the constitution of autonomous institutions. And specifically these two lines are also what define the relationship of the edu-factory to the university, its double exodus strategy: here exodus does not mean simply leaving the university, but rather the battle for autonomous free spaces *in* the university and simultaneously self-organization and *auto-formazione* beyond existing institutions.

Just in time for the *onda anomala*, the wave of protests, occupations and strikes at the Italian universities in late 2008, the edu-factory collective published the book *L'università globale: il nuovo mercato del sapere* (manifestolibri)[9]. The book summarizes the most important texts from the online discussions, and in many presentations throughout Italy it has become a hinge for the discourses fanning the flames of the *onda anomala* and accompanying it. In the introduction to the book there is an interesting contradiction relating to the name of the network, which represents the paradox of the edu-factory. The central slogan is: *Ciò che un tempo era la fabbrica, ora è l'università*. As once was the factory, so now is the university. Yet two pages later, we read that the university does not function like a factory at all. I

think this obvious contradiction leads us to realize that the university as factory is no longer to be read only as a metaphor.

Nevertheless, let us return to the association of the university as factory that was established at the beginning of this article, which remains at the level of the metaphor. In the course of the remarkable spread of struggles, occupations and strikes at European universities in recent months, the edu-factory organized countless meetings (mostly, but not only in Europe), which primarily addressed the invisible concatenation of these singular struggles. To promote one of these events, which took place in conjunction with the German education strike in June 2009 at the TU Berlin, the organizers in Berlin used none other than Gerhard Seyfried's picture from 1977, which so strikingly illustrates the university as factory and yet misses the most important characteristics of the transformations of knowledge production in cognitive capitalism. I think that the re-circulation of the simplifying picture, like the contradiction in the factory definition of the edu-factory, is not based simply on a kind of enchantment with the powerful metaphor of the knowledge factory as an apparatus of repression, but rather that it – consciously or unconsciously – takes recourse to the possibility conditions of resistance in the mode of modulation.

With Marx we saw that the two perspectives of the relationship between workers and machines in the factory were reduced to the aspect of subjugation to the machinery. In "Postscript on the Societies of Control", the modes of subjectivation are not omitted at all, but we encounter the problem of the temporal sequence of discipline/repression (including the forms of resistance to this) and control/self-government. If we want to understand today's modes of existence and forms of knowledge production not simply as emerging from the sequence of discipline and control, we must

assert a complex and modulating amalgam of social subjugation and machinic enslavement, but also draw up possibilities of new modes of subjectivation and forms of resistance, especially taking into consideration the changing complexity of this amalgam. An understanding of modulation as the simultaneity and interaction of discipline and control can neither take recourse to the old forms of resistance in the days of the factory, nor can the resistive counterpart be conceived simply just as a deterritorialization of control opposite reterritorializing discipline. The pure appellation to decentrality, deterritorialization and diffusion is not sufficient to draw lines of flight from the assemblage of social subjugation *and* machinic self-government.

The full ambivalence of the *fabbrica diffusa* in the mode of modulation, its mechanisms of appropriation and its potential for resistance, also allows us to understand the sites of knowledge production not only as sites of the commodification of knowledge and the exploitation of the subjectivity of all the actors, but also and especially as sites of new forms of conflict. And this could ultimately also be a reason for the edu-factory's insistence on a struggle for the traditional site of the knowledge factory, for autonomous free spaces *within* the university. The factory was and is the site of concentration – as far as the valorization of labor and forms of resistance is concerned. In a situation of precarization, but especially of diffusion, of the extreme dispersal of cultural and knowledge workers, schools and universities are perhaps the last places where concentration is possible. In this sense, it may indeed be said: What once was the factory, is now the university. And at the same time it is clear that the university assumes new functions as a concentrate in the mode of modulation. Potentially also as a site of organizing, of conflict, of struggles.

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[1] Seyfried's satirical drawing became famous especially on the cover of the first edition of a widely read university-critical book: Wolf Wagner, *Uni-Angst und Uni-Bluff*, Berlin: Rotbuch 1977.

[2] Karl Marx, *Das Kapital*, Erstes Buch, IV.13.4., MEW 23, 441 f. [http://www.marxists.org/archive/marx/works/1867-c1/ch15.htm#S4]

[3] Experiences like this, however, should neither lead to moralistic admonishments, nor to cultural-pessimistic complaints about the young people of today. Instead they should be linked – as in Deleuze's concluding remarks in his "Postscript on the Societies of Control" – with the insight that the new subjectivations lead to a new necessity to analyze them, and that new critical stances and new forms of resistance also emerge from this: "Many young people strangely boast of being 'motivated'; they re-request apprenticeships and permanent training. It's up to them to discover what they're being made to serve, just as their elders discovered, not without difficulty, the telos of the disciplines."

[4] Gilles Deleuze, "Postscript on Control Societes", in: ibid.., *Negotiations. 1972-1990*, New York: Columbia 1995, 177-182, here 179.

[5] In this sense – and going beyond Deleuze – my concept of modulation covers aspects of discipline as well as those of control. Deleuze takes his concept of modulation from Gilbert Simondon's

L'individu et sa genèse physico-biologique, employing it only within the framework of the second paradigm, especially in his aesthetic writing from 1983 on: in *Francis Bacon*, where he describes Bacon's diagrammatized form as "a temporal, variable and continuous mold, to which alone the name of modulation belongs, strictly speaking" (134), or in his first cinema book *The Movement-Image* (especially p. 24). Here too we already find the dual relationship of molding, of the mold on the one hand (in this case in photography, which embodies the "immobile section") and modulation on the other (exemplified by the movement-image of the film, the "mobile section", here especially by the two methods of the moving camera and montage: "Photography is a kind of 'molding': the mold organises the internal forces of the thing in such a way that they reach a state of equilibrium at a certain instant (immobile section). However, modulation does not stop when equilibrium is reached, and constantly modifies the mold, constitutes a variable, continuous, temporal mold." (24) On the concatenation of aesthetic and political modulation, cf. Gabu Heindl, Drehli Robnik, "Öffnungen zum Außen: Der Entwurf des Diagramms bei Deleuze und das Diagramm des Entwurfs bei OMA, Eisenmann und UN Studio", in: *UmBau – Theorie der Praxis* 19, 2002.

[6] Deleuze, "Postscript on Control Societes", 177.

[7] Cf. Irving Louis Horowitz and William H. Friedland, *The Knowledge*
Factory - Student Power and Academic Politics in America, Chicago: Aldine 1971; Stanley Aronowitz, *The Knowledge Factory: Dismantling the Corporate University and Creating True Higher Learning*, Boston: Beacon 2000.

[8] What was especially remarkable was the stringency of the instituting process. Instead of installing an open mailing list, the list was initially only opened for two longer rounds of discussion and then closed again – also to the surprise of many list participants. Single authors determined specific thematic lines for one week each with their input. This stringent form imbued the debates with a coherency and intensity that can usually not be maintained for a long period of time on open mailing lists. The address for subscribing to the mailing list, which meanwhile mainly informs about current struggles and conflicts around knowledge production in various regions of the world, is edufactory-subscribe@listcultures.org, the URL for the web site is: http://www.edu-factory.org

[9] The English version will be published soon by Autonomedia.