Posthumous society

On the implications of a transition via transhuman- to posthuman society

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First of all, i would like to make a few distinctions between my idea of posthumanity and other possible readings of that term; This article is not about "non-humanity", in any of its many facets. It is not about the total annihilation of the human race, because: a) there are way too many of us around for that to happen all too spontaneously, b) none of us will be around afterwards, which makes it un-interesting, and c) it's a sure thing anyway, so why waste breath. I try to avoid getting caught up in male creator-fantasies (presumably something like trying to compensate for our incompetence to bear children). And i would also like to ignore the attempts of certain nutcases who are getting hyped up about augmenting human capabilities via the hardware/wetware (implantation & hookup) interface. Such attempts will probably become factual, be nothing to write home about, and way too expensive to effect many. Our lives may very well be aided, assisted, caged & directed by machines, even more than today. But the (magical) tendency to go cyborg seems to me like overworked & reactionary ideology of humanity, the crumbling self-esteem "of man" seeking to be upgraded by the wonderful powers of the machine. I deem these powers essentially irrelevant. Let us not get lost in this fascination and fear in the face of the loss of human primacy. Why go through such a hassle to improve a bag of bones? (Now don't even start talking about those simpletons who dream of eternal "life" in digitality...) [1]

The only other serious transhuman theory as i see it would be one that assumes contact with extraterrestrial intelligence. However, as far as i can tell - and know my physics, interstellar exchange is not meant for itsy-bitsy life-spans such as we humans are confined to. It may be that other longer- lasting life forms will evolve out of this society to colonize outer space, however space is not a place for human wetware.

The question is: will we witness a (non-eradicating) transition away from a society based on - and dominated by - humanity, sometime before the extinction of humankind altogether actually comes to pass? In other words, if humans still will be around and there will be real implications for the lives of multitudes, how

would pervasive, self-replicating and intelligent technologies affect society?

Posthumanity evolves out of the transhuman stage. A transhuman society not only consists of relations between human individuals, and/or not only human individuals partake in it. There are other "actors" embedded in the social fabric and the nature of the mesh of relations itself may change. As such, a farm can be seen as a transhuman society; human and animal individuals partake in it. However, in most farms, the question of dominance is clearly regulated: Masters in the house, serfs in the barn. Accordingly, Orwell's "Animal Farm" [2] could be considered a posthuman society. Here mastery has passed on to the animals (with all unsavory consequences). To sum it up, the question: "Who (in some way) dominates society?" is a fundamental criterion for my concept of posthuman society. In a posthuman setting humans may go on participating (in the example "Animal Farm" they of course do not - but i mean in general), but they do not have the power to define the structure of societies' relations; they do not (and possibly cannot) organize alone any more.

The metaphor of the farm however too easily leads us to the idea of a "society with machines" in which the machines either replace the masters or the slaves. Just as the pigs turn into humans in "Animal Farm", we seemingly can't help imagining intelligent machines going homomorphic - taking on human characteristics.

This mindset goes into the direction of the talk of having personal relationships with robots (replacing human relations) - and that computers will tell us what to do when we wake up in the morning. I don't want to say that such scenarios may not come to pass, however they lead us to simplify-out what i would consider one of the most interesting aspects of post- /transhumanity: machines (and other developments, possibly in genetic engineering [3]) need not be subject to our concept of individuality...

The "in-dividual" subject has already been deconstructed by others. But essentiality, individuality of life's perception seemingly leads human being to the attractor of subjectivity. In contrast, machines, products of engineering, as fruits of our rational (dividual - as i use it as opposite to in-dividual) thought will not naturally tend to individuality. [4] So to adapt to human nature, dealing with essentiality and individuality might very well turn out to be the greatest challenges in building so-called artificial intelligence out of digital computers. To communicate intelligently, machines need more indefinite binding to individuality, to meaning, to the world of emotion. But a subject, as mediator between an individual consciousness and a world of information, need not be re-constructed artificially. What good would the full- fledged reconstruction of the cognitive powers (which i believe can only be done including the full sensual, motoric and emotional capacities of a body) of a (human) social subject do? Humans we already have (superhumans we do not desperately need) - and in fact, i don't think we can be reconstructed with the given means anyway, at least not

via engineering methods. [5] Machines are better at playing chess, they can weld, calculate and manipulate do many things that we once thought required intelligence. Nevertheless we would not call these machines intelligent, we rather see them as an extension of our human intellect. I think the transition towards intelligent machines will continue in such a gradual manner, via an incremental development of further sophisticated aides. The network would play the central role in this game of becoming intelligent. As such, no monolithic subject need evolve.

There are basically two paradigms for technology of intelligence; The tool-form and the life-form. Both are always intertwined and develop out of one another. So accordingly, the life-form, post-artificial intelligence, might evolve out of the tool-form as an "intelligence tool". To return to our transhuman farm, we might not want to first develop full- fledged animals, but instead start out just with sowing (non- subjective) plant-seeds. Vegetarianism is better anyway...

Let us go back to my definition of post-/transhuman society; I didn't only speak of individuals as constituting society, i also described society as having the consistency of relations. We humans probably will - and should - keep on interfacing and relating in the ways known and natural to us. We should (i propose) stop adapting our ways to the demands of the clumsy electromechanical, & formally invocational [6] interface. It's simply a matter of overall mental, social & physical health that i'm concerned with, as well as love of flesh. However, non-human participants (i do not call them social subjects) might find very different forms of relating. Among themselves. I believe that their relations still would be about collaboration and communication. [7] Yet the "form of interface" - and with it - of the topics and materials, as well as the participants themselves, might be quite different.

So this would be my scenario for the time ahead: Machines in a transhuman society would feature highly intermeshed communicative powers, as well as certain productive and manipulative capabilities. - But lacking full emotionality of desire, (according to the principle of the agent) they would remain something of a highly sophisticated extended arm of articulate human will. (In this respect, as far as i support this approach, i can also be called augmentist).

This scenario can at the least be called problematic. Introducing new agents between human relations does not eradicate the power-structures that we have before us at this time. On the contrary, it may very well enforce them. It might be that mainly the already long and powerful arms would be extended by technology. Mechanic/electronic agents of surveillance and control are becoming pervasive everywhere they seem profitable. Combined with greater capabilities for unified interrelation of information, complex inferences (and so on.. insert your techno-flowery expression here) that are in development, technological control of other humans by the rich & powerful can become a whole lot less tedious - and (always

considering the limitations of resources) very widespread. All of this is well known. I would not like to see an inhuman intelligent search-and-destroy robot armada, unleashed from the problems of morality and morale that contemporary organized bodies of violence face, shooting well-aimed holes into our social fabric of freedom. Torture and terror are already rationalized more than far enough. And even if it all remains speculative (especially concerning the scale and consequence) at the moment, the problem is that it might happen.

But how would such a highly-sophisticated information/robot/genemonster-somethingsomething work? Well, i have an idea, but i don't think it will work.;-} In fact, i don't believe that such technology can be "linearly engineered", masterminded to work at all, without implementing some crucial flaws in for a bargain. (This is of course the lesson to be learnt from the failure of "conventional AI" to model the complexity of cognition.) So as long as digital machines remain tools (as such designed by humans, designated to be useful), they can at best become an integral part of symbiotic collective intelligence with humans. And even that sounds hard to believe and truly like a lot of work.

The more the engineered part of a machine is replaced by individual use and interaction, the less tool-like and more life-like it becomes. Therefore highly advanced, intelligent and interactive (in the sense of actually acting) technology will have to evolve - as simplistic as it may sound - in some way autonomously. Personally, i call this form of development autogenic processing (AP). [8]

Technical conception, designing and engineering follows the ideology of dividuality, that everything can be broken down into a complexity of rationalizable elements - in contrast, natural evolution, coming from natural structuralities (and not just adapted to them), is highly individual. The structures that we produce artificially are only as adapted (and as such efficient and sustainable) as our concepts for them. So what we are trying to do, from the vantage point of AP- designing, is to return back to individuality, through volume & complexity in materiality and time, units and iteration. However, the result might be an altered individuality, an alternate way of structuring. Machines may evolve a non- subjective (whatever that means) form of adapting perception to our world. When i speak of natural structuralities as a rough concept for the complex organization of our world, then i also suspect that post-artificial structures could constitute a new nature.

"Process" here is defined as activity according to given information - and acting on (manipulating, dealing with) information. [9] If this activity leads to the construction of new processes which in turn may construct others, and so forth, i call it autogenic.

A processing is the whole bundle of active processes, algorithms (the "given" information governing execution) and the "raw material" of the environment, the data to be processed, the food to be eaten, the warmth to be enjoyed. As such,

processing is but a rationalization (in terms of discretifying, identifying) of activity and ultimately consciousness. “Information” in this context describes all things assumedly discrete, as i define information as the discretion of the object. It is not limited to abstract information represented in a medium, but certainly includes that form.

The construction of new processes out of the forerunning means reproduction. Processes must be produced from the states given in the environment, data in a medium, material things in actuality. To be maintainable, such production must form a reproductive cycle via different states in the running processes; If we have a processing with terminating processes, the running processes must produce states to reconstruct processes, for the processing to continue. If among the running processes there is an underproduction of states necessary for the construction of new processes, the processing dwindles, in case of an overproduction it can grow exponentially. All these developments may be defined by the algorithm, however in a well-designed, sustainable (“healthy”) processing, they are heavily dependant on the environment.

All of this is basically a reformulation of evolutionary theory, However using mainly information-theoretical vocabulary to draw parallels between different levels at which processing/evolution materializes. I do not take on a pre- defined concept of sexuality for reproduction. Accordingly, i use the term “evolution” in a more classical sense, as the development of new forms of processing from the already given. I would propose, that mutation in evolution need not be error (just as the clear-cut lines between the species need not be), but rather that there is always a high level of individuality in the structuring essence of biological existence (the natural structuralities of cells, organs, nerves etc.), which allows for an effortless mutation, selection and - evolution.

If we view the human animal as a processing, as activity in an environment according to given information represented in the nervous system, we can demonstrate an important capability of some autogenic processes: Animals can learn. Processing itself can alter the algorithms that govern it. An auto-evolving autogenic processing, or to a Computer Scientist: self- modifying code. Computer Scientists might go on to say that this can wreck havoc and i readily agree... But might it be a plausible solution to very carefully design auto-evolving processes with well-governed instances to govern self- modification of the algorithms? Careful or not, explicitly intended self-modification is a problem. Mainly the problem of the environment.

It is however important to note that the natural examples of autogenic processing are not explicitly self-modifying (as well as they do not have explicitly represented algorithms). Only very seldom will you see an animal intellectualy masturbating, teaching itself something out of virtually nothing (there are however some freaky homo sapiens specimen..); Auto-evolution is normally bound

to some kind of individual nexus between environment and algorithm. Biology does it via chromosome- errors and mating. Neuronal networks via electric attraction and “Prägung” (formation, learning by exposure & repetition). However we humans are impatient. Self-modifying algorithms theoretically unleash great power to adapt and expand exponentially fast (theoretically!). Well-designed, they might be an option, if the self-modification is kept close to the environment. They might be an option that will happen. As a matter of strategy, we will have to follow different threads, viewpoints, paradigms and ideas.

In the case of trans- & posthuman society we are talking of artificially initiated processings. They are bootstrapped via some other technology that is already in place and available to the designer; Bootstrapping and initiating are the big problems in this endeavor, of course. The media containing the processing’s reproduction must be furnished appropriately, algorithms need to be well-adapted, a material or immaterial environment is needed, for the process to act upon, plus (possibly) interfaces to further feed the environment (if it is a processing is mediated in a system). Here the algorithm, the information informing, or “ruling”, the process’activity (execution), would typically be designed so as to help fulfilling some form of human desire.

Desire in itself however is just an emotion among many, one that is kindled by and clings to objects of reality, tends to objectify and finally fetishize reality. I reject the approach according to which desire’s rationalization the individual’s will is treated as exchange currency for all other emotions. People do not do things because they want to do them, they act because they feel like it. All emotion propels action constitutes meaning. The question of desire, meaning and their mediation remains very important.

If we leave that question behind for now, we come to the scenario of a transhuman society; A society of humans in growing symbiotic intellectual/ emotional and material/productive relations to machinistic extensions of their subjectivity. Ideally, these autogenously developing (which in this case means hermeneutic circle, reproductive cycle) agents would have the role of extending into collectivity, into decentralization of power, into transcendence of cognitive processing... Problems will be dealt with as they arise.;-}

In a transhuman society, humans are in some way still an integral part of reproduction. They feed meaning, manual labor, data etc. Consequently one criterion for a posthuman society might be fulfilled when the reproductive cycle were closed on the level of materiality; Machines reproducing machines without any human intervention, be it in the material or immaterial domain. Evolution of (post-)artificial life would no longer depend on humans and most probably start deconsidering the human condition. Leaving behind human meaning, finding its own forms. We may not be able to hang onto power, collectively as a race, indefinitely. But we should not prematurely hand over power to individuals to use

technological progress as a tool against other humans.

As soon as people realize how they can wreck havoc with autogenic processing, some will probably start designing processes to wreck havoc. Even if we do not know for sure if “it can be done”, it nevertheless would seem wise to me to consider the possibility, follow and accompany developments of technological innovation that go into the direction of autonomous self-reproduction and redevelopment closely. In case such nefarious processes arise, the creation of an “immune system” should seem imperative. Such an immune system or rather, an immune processing, would be a project and processing that constructs process units that (basically and abstractly) maintain a certain form of structuring in the world that surrounds them. The initiation of such processing of course will be developed in conjunction with study of natural immune/ecology-maintaining processes.

So let us suppose “computers could program themselves” and let’s go on to suppose they would program themselves to be able to perform many intellectual tasks that only humans could do before. In such a case, there would be real implications for the class of so-called “knowledge workers”. This does not mean that humans will not find work (manual labor also didn’t disappear with the advent of industrial robotics), there will always be hinges in social structures for humans to move. We will always have something to do - it depends on the conditions. However another bastion of human primacy will be taken. Human labor will largely be made redundant. Perhaps there will be a day when no task performed by a human could not also be done by a machine. Possibly not even our emotional competence will remain unsimulated.

Then what will humans do? The answer to this question depends on the manner in which humans will organize their society’s cooperation. If the distribution of power (in its material, monetary and immaterial form) remains as violently unjust as it is, we might get into big problems. Provided a situation in which many forms of material and immaterial labor are beginning to be made redundant (but the simulation of subjectivity not yet fully accomplished), humans might turn to turning the world into a big power-play. Exercising the remaining capability to dominate and fight one another... Possibly global wars over the last things non-virtual natural resources. (The factor of ecology and resources should never be disregarded when speaking of the future.)

Even if these were events that lie far in the future, those would be wars humanity can only lose. We would have the choice of mutual anihilation or serfdom. What difference would it make if we were ground up in inhuman machinery or lorded over by robot-kings, talent-classes, other humans? Not much. It may happen sequentially, or all at once.

The end of humanity is a fact. The further existence of the human race can not be taken as a goal in itself. Everything else would be a racist ideology. Only the

individual human condition is a concern among us humans that is worth fighting for.

As such, the mode of organization of cooperation in collaboration and communication, between us humans and beyond, is of imperative importance. Self-organization in network- societies that reject hierarchies as their principle and truly embrace sustainability might be a better option for dealing with power. Power that already finds forms not yet overcome, but might already be on the search for new media. Therefore, conscious formatting and consequent organization of the activists' lives would give depth to the project of integrating oneself into development.

Other tool-architectures may help us dream up new social structures and vice versa. And if my hypothesis that post- artificial structures can potentially constitute new nature(s) turns out to be right, the context in- and out of which these structures are formed is of defining importance and responsibility for the future.

"Errichten oder Vernichten" - A German advertisement for Lego presented German boys with the question "Construction or Destruction". It is age-old wisdom that it's easier to unmake something than to build it. We nevertheless see progress in all forms of structuring the world we live in why? Because they have their own dynamics. Structure can be found in endlessly different dimensions the universe is not caught up in a dichotomy between entropy and order it is absolutely both at once. That does not however mean that one modality of structuring is meant to prevail indefinitely. If two different modalities meet, what would seem like construction to one might be destruction to another.

Our biological evolution, based on DNA-genes, is the standard example of autogenic processing. The information represented in DNA governs its own replication. This is also the standard example of a processing that is not contained in a system (at least not by definition earth can not be called a discrete system) but is nevertheless mediated information with structures generally based on the modality of organic chemistry.

Virus and bacterium are two prime examples of different modalities clashing as well as coexisting... At least they share the basic structure of DNA. The situation could get a whole lot more tricky when utterly differently based modalities meet. One of the areas most threatened by artificially initiated autogenic processes certainly would be biology; Nanorobotics (which i deem still a lot further off than some prophets might hope) and other "more material processes" could turn out to be a great environmental hazard to wetware [10], as our whole biological ecology is pretty much accustomed to DNA being the only carrier of reproductive information. The first autogenic processings are bound to be a whole lot more crude than their natural examples they might at first do nothing, and then destroy more than they can (usefully!..?) construct. What would the initiation of an "immune system" to meet those kind of dangers look like?..

And don't the problems start between us humans, isn't the social structure deeply involved?

Since this is not supposed to end as a lament that folks actually should be nicer to one another, let's have a look at some of the tasks at hand...

When working on intelligent machines, we can develop the tool- form or the life form. I propose using the methods most appropriate to reaching the life-form (autogenic processing) in projects that are rather aimed at the tool-form (non-subjective network agents). Essentially, i think there is no real alternative. It is our task at hand to ensure a sound transhuman condition posthumanity remains a dream. It's up to you to decide if it's a nightmare.

One important task that i see and do not fulfill for the time being, would be to colonize robotics. Techno-scientists in the realm of mechatronics and robotics already have a strongly raised awareness for the potential of autogenic processing. This tendency is born in the ethos of space-enthusiasm, technological perfection in machinistic recreation. These are exciting fields, that may become a great motor of intellect for growing generations. Like nano- & genetechnology, this is a field that techno-scientistic society is setting its hopes (and funds) on. Unlike the other two however, robotics might have the chance of becoming widespreadly applicable, without overwhelming costs, in the not-too-far future.

I pose the old question anew: Does meddling with technological progress make sense? I cannot quite shake off the fear of the spirit i once called, coming to haunt me. If we develop technology, where will it lead us to? Won't well-meaning innovation in the end be instrumentalized and what is well- meaning about innovation anyway?

But the technology question might also be turned into: Is it worth the effort? Let us not forget that, as we know of the social dimension of technology, we should also take into account its dynamics of power. Progress needs resources, innovation is a race who has more fuel to define the direction of the branches development will take? The question also could be: will integration necessarily just mean running along, or can it mean effective (directional) spearheading and subversion?

Im pretty sure that fundamentally most of my audience will agree that "There Is No Alternative" (TINA). Most of them would of course have felt qualms if they had found themselves in research that turned out to aid development like that of an atomic bomb... But in everyday life the nineties have seen a very widespread acceptance of and involvement with new technology throughout the social movements as soon as they could afford to. We run along with technological progress. And running along means running along. Even the free-software movement has been concerned more with re-writing proprietary architectures en libre, than with developing new ones. "Don't hate the media be the media!", or: "Don't hate the machine, be the machine" [11] TINA turned empowerment. Is it

really that way? Neither technology nor humanity should become ends in themselves. The modern human has become accustomed to a certain level of high-tech, of doing just because it can be done. This is not supposed to be moralized, but percieved. The future may also hold for imaginative and creative anti-technology, in some way or another.

I believe these are open questions that can only be interpreted critically depending on the situation. The situation we are in now is certainly strongly technological. As far as we continue our contributions to the "project of technological progress" (whatever that may mean) we need more feasibility studies - more radical experiments...

I call to get involved in developing projects that aid intelligence in new, connective and interactive forms. I do not primarily call for the simulation of human intellect, however i do call for "critical coding", for technological development that breaks with forerunning paradigms if necessary. My personal take is that a close look at phenomenology might help us in finding alternatives to brute-force attacks on intelligence (eg. neural networks). Thinking about new, flexible forms of representation, as well as enacting meaning might be the outcome. Developments such as the Semantic Web working group [12] and generally the growing popularity of mapping analysis, seem to be interesting approaches, steps forward on the level of representation. But to transcend that level, we need a more profound and critical theory to apply. [13]

We must integrate ourselves into progress without becoming progressives; Progress as a paradigm eternally discounts the present to the advantage of the future. Let steps in a path supplant progression, becoming as it is. As such, it doesn't matter if posthumanity is actually reached. Whatever we predict, other things will happen, and if anything we predict actually works out, it'll probably be much slower than we thought.

Notes

[1] For more meat such as these (silicon meat that is), just do a search for "transhuman", "Kurzweil", "posthuman".

[2] George Orwell, *Animal Farm*, Secker & Warburg, Great Britain 1945.

[3] I do not however understand how (maybe some) genetic engineers and enthusiasts can believe that tinkering with a highly typical and individual system, based on rather crude, schematic and dividual models, will lead to anything very rewarding. Instead i would keep to the carpet of electromechanics for the time being they probably will be used to bootstrap advanced biotech

further down the line. (Biotechnology cannot of course be rolled up so easily in a few sentences there are also other aspects to consider..)

[4] For more on this dividuality - individuality thing, and a definition of information that reaches into the material world, look out for some information-theory coverage coming up. For preliminary fragments, see also: Gabriel Pickard, "Flexible Darstellung komplexer Sachverhalte" in *nichthierarchischen Informationsstrukturen*, http://werg.demokratica.de/archives/00000051.html (German only); See [9] also.

[5] In this manner i avoid the question of artificial consciousness for this topic, which will easily push us into a conservative ideology of subjectivity. In a phenomenological world-view we need not worry about the others' consciousness and get metaphysically agitated.

[6] See Chris Chesher, "Why the Digital Computer is Dead", http://www.ctheory.net/text_file.asp?pick=334

[7] I am pushing a certain terminology to describe cooperation; As consisting of collaboration (the actual work agreed on and done together) and communication (the activity binding the working group).

[8] Im not sure if the term autogenic is correct in this context, would "autogenous" fit better?

[9] This theory will be expounded later; It constitutes an advantage upon the simplistic model for the will/desire/execution/meaning nexus that i propose in: Gabriel Pickard, "Beyond the Computer", in *sarai-Reader 03,* "Shaping Technologies", Delhi/Amsterdam 2003

[10] See http://www.etcgroup.org for a contemporary critique of the hazards of nanotech.

[11] This is a bit misquoted from: Matteo Pasquinelli, "Radical machines against the techno-empire. From utopia to network", http://www.rekombinant.org/article.php?sid=2264; This valuable essay does not call for "running along" at all.

[12] See http://ww.w3.org/2001/sw/

[13] At the moment i'm planing some software projects that will develop around the lines of information representation, smart interfacing and manipulating, inferencing etc.. and merge into social tools of cooperation. I'll try to document this process of planning with a series of various texts aimed at

explaining the actual workings of the planed projects, but also at putting the concerted effort into a context. A slight problem remains: i do not pretend to know yet, clearly, how to concert that effort. There are still enough problems out there take on. Feel like joining? :-}