"Let Us Now Forget" by Peter M. Asaro

In his papers, Geof presents us with an intriguing prospectus for an inquiry into memory practices in the sciences. The first paper introduces his project, and attempts several sketches of how we might look at memory practices with a more critical eye. First by freeing ourselves from a tendency to favor "conscious" sorts of memories and instead paying attention to how we spread knowledge around the environment through specialized practices, and how these practices are organized into regimes. The second paper, "Synchronization 4: Hermes, Angels, and the Narrative of the Archive," examines the theoretical treatment of memory by the science of Cybernetics, and how this conception of memory resonated with the historical narrative Cybernetics told of itself to produce a powerful rhetoric of "Universal Science." Before diving into the details of Geof's reading of Cybernetics, I want to comment on his treatment of memory practices more generally.

In his outline of memory practices, Geof offers several axes along which to distinguish these practices. The first, I must admit is a bit daunting: it is a continuum, and at its extremes lie the numinous present and the mnemonick deep. I haven't convinced myself that I completely understand the intended distinction, but it seems to draw attention to our temporal, aesthetic and moral relation to memory. That is, I think this continuum expresses our normative relation to history. In the paper, the histories of both the numinous present and the mnemonick deep are actually in the present, the difference being how we view these histories.

As I read it, for the numinous present memory is the readily available history which defines the present and situates our choices for the future. Our relation to this memory is one of grateful indifference–we are neither fully inspired nor fully condemned by the past. We seem pleased that the past has carried us here, but our dreams are of the future and we do not care to look back. The past is merely a means to the numinous present and is not to be dwelt upon.

For the mnemonick deep, history is rich with hidden treasures. We look back longing into the past, which has become obscured by the intervening years of neglect and interfering events. The past is something to savor and dwell on. The mnemonick deep has the potential to captivate our attention and distract, leading us backwards into the future.

In the mnemonick deep the present is appreciated all the more for being the completion of the struggles of the past, while in the numinous present we can appreciate the present for being what it is in spite of the past. Thus history stands only in the present, and we either choose to look through it to the present, or past it to the future.

The second axis concerns the form of the traces left by memory practices. Even biological memories are not always conscious. They are stored away to be recalled to consciousness and remembered later. Memory practices can be ways of eliminating biological and conscious memory altogether through augmentation–the purpose of such practices is to extend and enhance the abilities of individual minds. In this sense, archives are the great depositories of our most valuable unconscious memories. These archives take many forms, with a continuum running from "institutions" at one extreme to "recordings," or what Geof calls "hypermemory," at the other.

Some memory practices infuse the world with memory by physically reshaping it in ways that are more conducive to our needs. Whether through policies, procedures, architectures, environmental

engineering, or some combination of these, memories become "institutionalized" in the very structure of the lifeworld.. Once memories are institutionalized, they no longer need to be remembered as such. The image of Bruno Latour's "sleeping policeman" comes to mind. A speed bump is left in the road as a reminder to slow down–a lieutenant, who stands "in lieu" of a real policemen to enforce the speed limit. The bump is not representational of any specific event or traffic accident, but rather effects a policy non-symbolically.

There are also symbolic memory practices–inscriptions and recordings of specific events and features of the world. Here, experiences are not to be forgotten but translated into representations with as much fidelity as possible, and stored as indelibly as possible, to be recalled later as vividly and accurately as possible. This "hypermemory" employs the technologies of writing, recording and data-processing to capture a present for future analysis. In the absence of such analysis, hypermemory is inert, and so it demands reflection. At the extreme, the events stored in hypermemory include even the traces of their having been accessed as memories.

The final axis, which Geof discusses in the second paper, concerns the structure in which history is conceived. This axis is really a dichotomy between synchronic and diachronic history. Diachronic history embraces the extension of history into a "real" past. That is to say, regardless of the epistemic difficulties involved in accessing the past, it has a real metaphysical extension. Synchronic history, on the other hand, collapses the past into the epistemically accessible present. My sense from reading the papers is that there is a tacit acceptance of synchronic history, even before the concept is fully elaborated.

Each of these axes are getting at different aspects of memory and history: our normative relation to it, our material and semantic relation to it, and our epistemic relation to it. There is, I believe, a correspondence between the numinous present, institutionalized memory, and synchronic history on the one hand, and the mnemonck deep, recorded hypermemory, and diachronic history on the other. With the past safely stored in the physical and social structure of the world, there is little reason to dwell on it, at least in our day-to-day activities. While the hypermemory of mechanized recording leaves vast databases in desperate need of "mnemonick mining."

We could challenge this framework, and ask whether it is proper to equate memory and history in this way. History is, afterall always about a narrative retelling of events, facts or patterns. Memories, and even records are not always narrative, but merely subject to narrative within historical interpretation. And we could ask if there isn't something worth distinguishing in the memory practices involved in explaining the geological formation of rock layers, collecting census data, and placing items along the route of one's morning routine, though in each case it is possible to construct an historical interpretation from the traces of the past. I believe cybernetics, despite its effort to "destroy memory" did not feel history should be forgotten, indeed, they were almost obsessed with historical narrative. Rather, they saw each of these sets of practices as having its own advantages and disadvantages, and moreover recognized the value of having an historical record around to be rewritten and reinterpreted.

I want to pause now and take a moment to sketch out Ross Ashby's Cybernetic conception of memory, and its place in Geof's framework and how it might fit in a new ontology. For Ashby, memory is little more than an explanation for the behavior of a system whose mechanisms of behavior are not directly observable. Within the cybernetic ontology, the world is made up of state-determined

systems, and thus by knowing the state of the system and its rules for moving between states, we can safely reduce history to the most recent state and still correctly predict the next. Of course, for the system, information is very important, as it is the means to satisfying all the needs of the system. But information that is merely stored and results in no structural change is of no use as such. Only information which results in a structural change in the system can make a difference in the behavior of the system. Learning is the process of reforming the system, better suiting it to survival.

Thus, it seems that Geof has quite appropriately placed Ashby's theory of memory close to the "institutionalization" end of the continuum. Individual images, experiences and memory traces, what psychologists would call "episodic memory" are merely extra baggage for the system to carry around. It is much more efficient to utilize information in structural changes to the system or its environment, what psychologists would call "semantic memory." It is episodic memory which Ashby sees as being epiphenomenal–narrative descriptions of past events may explain the reasons for the dog cowering in the corner at the sound of a car (it was recently hit by a car), but it fails to explain the causal mechanisms in the dog's brain which encode the experience of the accident as cowering behaviors.

In his paper "Memory without Record," Heinz von Foerster goes even firther to lay out an argument for the advantages of what he calls a computational memory over a recorded, or episodic, memory. He starts by building a multiplication table, because he has so much trouble remembering the products of two numbers. He then calculates how much typing paper he'll need for a multiplication table covering numbers up to 10-digits in length, and concludes he'll need a stack of paper 10^{15} cm high, or 100 times the distance between the Earth and the Sun. Of course looking up products in such a table is just as infeasible as constructing it. Yet, with a simple algorithm, it is easy to compute the product of two ten digit numbers with pencil and paper, and even easier with an electronic calculator. So not only does Ashby argue for the biological necessity of "institutionalized" memory, von Foerster argues for the absurdity of recorded memory.

Geof's second paper focuses on how the cybernetic conception of homeostatic memory played out in the rhetorical strategies of cybernetics. He argues that there were three histories at work in the cybernetic narratives: 1) world and human history, 2) the disciplinary history of cybernetics, and 3) the homeostatic memory theory internal to cybernetics. He further argues that the rhetorical strategy of cybernetics was to move between these histories and to intermingle them through recapitulations.

While he demonstrates some intriguing resonances through his analysis, I'm not quite sure what Geof wants us to take away from this paper. He's already done a good job in a previous paper showing the universalizing ambitions of cybernetics. And, insofar as any discipline wants to be a "universal science" we should hardly be surprised that they should attempt to subsume all the other sciences, and their histories. And it doesn't seem completely necessary that they should have to perform these elaborate convolutions of time to construct such universalizing historical narratives.

On the other hand, Geof points out how cybernetics applied its own concept of memory to itself. Cybernetics was self-reflexive, it used its own methods in its consideration of itself, both historically and pedagogically. But other disciplines have engaged in self-reflection using their own methods, most notoriously post-colonial anthropology, but also the social studies of science. However, cybernetics appears to have been reflexive from the very start. It also experienced this self-reflection as a recapitulation–both of other sciences and of its own disciplinary history.

But what strikes me as strange about this argument is that the recapitulations involved so much

narrative history. Sure, they were struggling for a reinterpretation of history in cybernetic terms, but why do this with linear narratives? How cold such histories constitute a destruction of memory? Did they really want to collapse scientific history into eternally recapitulated history? I think ultimately the answer is no. Eventually they tried to escape from rhetoric and narrative altogether. As early as 1962, Ashby urged a shift away from written record of scientific knowledge and toward materially instantiated models o knowledge in his paper "Simulation of a Brain":

> A second use of the model is one that has not so far developed appreciably; yet it is bound to become important in time. I refer to the use of a constructed model as an archive and repository for collected knowledge. A good example is given by our knowledge of the mechanisms at the base of the brain. Year by year, the physiologists and psychologists are adding fragments to the accumulated knowledge, and it is becoming too evident that the parts are interrelated in a fearfully complex way. The neuronic centers responsible for reflexes and instincts act on the centers for the vegetative nervous system and on the endocrines; these act on each other, on the cerebral cortex, and on the muscles; these interact and have effects on the emotional centers, and so on, through a number of parts whose list is being added to almost daily. To describe all these parts piecemeal in a textbook of physiology and to expect the student to work out the interactions in his head is to give him a quite impossible task. It seems likely that a model must be built, either as an analog or as a program, that can be added to, so that the student and advanced worker (and perhaps the diagnostician) will have available something that can answer the various questions that can arise. The model would then itself be both archive and computer.

What then is left of the historical narratives? Indeed, given the power of these rhetorical strategies, and the seeming success of cybernetics as a "universal science" whatever became of it? Geof gives us the dates 1943-1975 as the period of interest, but why does this period end in 1975? What ended? And how did Cybernetics close its chapter of history, which seemed to extend as far into the future as it did to the past?

If anything marks the end of the cybernetic movement, it is the *Cybernetics of Cybernetics* (May 14, 1974), compiled at the time of the demise of the Biological Computer Laboratory here at the U of I. As its title suggests, this is a "hyperreflexive" work, it recapitulates the great texts of cybernetics, its lectures and pedagogy, and even the student projects of the BCL. But it is more archive than narrative history or textbook. A "Parabook" appears in the middle with indexes and acknowledgments, and it even includes a detachable "Metabook" with conceptual maps of the various contributors and key terms. Despite its radical structure and intent, the whole book resonates like the death knell for cybernetics, because its history is, in some sense, complete. There is no more cybernetics to be done, at least not any that requires the laborious recapitulation necessary to connect to this history. It is both an archeological memory trace, and the end of cybernetic history.

So I think that Geof's framework offers us a unique look at the rise *and fall* of a universal science. The cybernetic methodology did live on, in the sense that discourse in many diverse fields are still being broken down into systems, information, feedback and networks–all the more so since the advent of the Internet and "Cyberspace." But since 1974, nothing of great significance has been added to the cybernetic corpus.

I want to conclude with a quote from Plato. As Plato recounts in his dialog with Phaedrus (275a):

> In the region of Naucratis in Egypt there dwelt one of the old gods of the country, the god to whom the bird called Ibis is sacred, his own name being Thoth. He it was that invented number and calculation, geometry and astronomy, not to speak of draughts and dice, and above all writing. Now the king of the whole country at that time was Thamus, who dwelt in the great city of Upper Egypt which the Greeks call Egyptian Thebes, while Thamus they call Ammon. To him came Thoth, and revealed his arts, saying that they ought to be passed on to the Egyptians in general. Thamus asked what was the use of them all, and when Thoth explained, he condemned what he thought were the bad points and praised what he thought the good points. On each art, we are told, Thamus had plenty of views both for and against; it would take too long to give them in detail. But when it came to writing Thoth said, "Here, O king, is a branch of learning that will make the people of Egypt wiser and improve their memories; my discovery provides a recipe for memory and wisdom." But the king answered and said, "O man full of arts, to one it is given to create the things of art, and to another to judge what measure of harm and of profit they have for those that shall employ them And so it is that you, by reason of your tender regard for the writing that is your offspring, have declared the very opposite of its true effect. If men learn this, it will implant forgetfulness in their souls; they will cease to exercise memory because they rely on that which is written, calling things to rememberance no longer from within themselves, but by means of external marks. What you have discovered is a recipe not for memory, but for reminder. And it is no true wisdom that you offer your disciples, but only its semblance, for by telling them of many things without teaching them you will make them seem to know much, while for the most part they know nothing, and as men filled, not with wisdom, but with the conceit of wisdom, they will be a burden to their fellows."

And so I leave off with these questions: If we are to measure the harm and profit of employing synchronic memory practices, how shall we judge them? What can be learned from the story of cybernetics? and how can we even ask such questions without our more archaic forms of memory?