A Thousand Year Conclusion? Machination and Calculation in the Nietzsche lectures
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In 1880, in The Wanderer and his Shadow, Nietzsche presented a short aphorism: “Premises of the machine age. – The press, the machine, the railway, the telegraph are premises whose thousand-year conclusion no one has yet dared to draw (§ 278).”511 In this single sentence Nietzsche opens up a challenge that Heidegger would respond to in depth. The question of technology is one that is extensively discussed in the Heidegger literature, but this paper looks at the related questions of calculation and machination in the Heidegger/Nietzsche engagement. This engagement can be seen as part of Heidegger’s long term project to draw the conclusions of the machine age. Although his work on the topic of calculation is something that occupies him for much of his career, it seems that it is in the Nietzsche lectures, those around the same time, notably An Introduction to Metaphysics, and in the Beiträge zur Philosophie that calculation really begins to be analyzed as a political issue.512 This would be in opposition to earlier lectures such as the Plato’s Sophist course where the analysis is there but without any hint of its later importance.

In the Beiträge Heidegger claims that calculation (die Berechnung) is one of the three concealments (Verhüllungen) of being, and is closely related to the other two, speed or acceleration (die Schnelligkeit), and massiveness (Massenhaften). Calculation is dependent on the science or knowledge of the mathematical, and set into power by the machination of technology. Calculation is important politically because everything becomes adjusted to its way of thinking, and the incalculable is looked at as the not-yet calculable. Calculation makes a particular way of thinking organization possible.513 Some of these ideas are outlined in the 1938 lecture “The Age of the World Picture,” but although this contains some clear analysis, I think that both the Beiträge and the Nietzsche lectures are much more explicitly political.

512 For a detailed discussion, see Stuart Elden, Speaking Against Number: Heidegger, Language and the Politics of Calculation, Edinburgh/New York 2005.
513 Martin Heidegger, Beiträge zur Philosophie, GA 65, Frankfurt am Main 1989, 120-121.
In 1945 Heidegger lets us know what is at stake here, suggesting that: “on a higher level, the \textit{Auseinandersetzung} with Nietzsche’s metaphysics is an \textit{Auseinandersetzung} with nihilism as it manifests itself with increased clarity under the political form of fascism.”\textsuperscript{514} While this is often taken to be most explicit in the question of biologism, I would contend that this \textit{Auseinandersetzung} can also be found in the question of machination and calculation.

1. Protagoras and Descartes

One of the running themes of the Nietzsche lectures is the problem of Descartes. Descartes is seen as emblematic of a fundamental break, where being becomes understood as that which is calculable. One of the ways Heidegger pursues this theme is to contrast Descartes and Protagoras. While Protagoras’ saying “\textit{panton chrematon metron estin anthropos},”\textsuperscript{515} is usually translated as “man is the measure of all things,”\textsuperscript{516} Heidegger suggests that it is simplistic to reduce this to a Cartesian motto. “We would be falling prey to a fatal illusion if we wished to presume a sameness (\textit{Gleichartigkeit}) of basic metaphysical positions here on the basis of a particular sameness (\textit{Gleichheit}) in the words and concepts used.”\textsuperscript{517} While it might appear that “all metaphysics—not just modern version—is in fact built on the standard-giving role of man within beings as a whole,”\textsuperscript{518} this is a dangerous point to assume.

However in the context of these lectures it appears evident that Nietzsche’s role as the evaluator, and the revaluation of all values equally falls into this model.\textsuperscript{519} As Heidegger suggests, “value translates the essentiality of essence (that is, of beingness) into the calculable, something that can even be estimated in terms of quantity and spatial extension (\textit{Zahl und Raumaß}).”\textsuperscript{520}

\begin{itemize}
\item \textsuperscript{514} Martin Heidegger, \textit{Reden und andere Zeugnisse eines Lebensweges}, GA 16, Frankfurt am Main 2000, 402.
\item \textsuperscript{518} Heidegger, \textit{Nietzsche: Der europäische Nihilismus}, GA 48, 161-2; \textit{Nietzsche IV}, 86-7.
\item \textsuperscript{519} Heidegger, \textit{Nietzsche: Der europäische Nihilismus}, GA 48, 161-2; \textit{Nietzsche IV}, 86-7.
\item \textsuperscript{520} Martin Heidegger, \textit{Nietzsches Lehre vom Willen zur Macht als Erkenntnis}, GA 47, Frankfurt am Main 1989, 288; Martin Heidegger, “The Will to Power as Knowledge and as Metaphysics”, trans. John Stambaugh, David F.
critique of values as calculative, of the relation between evaluation and accounting is a key theme in the Nietzsche lectures, and indeed had been a early concern, dating from at least as early as the 1919 course Phenomenology and the Transcendental Philosophy of Value. But while Cartesian thought can even be found in the avowedly anti-Cartesian Nietzsche, Protagoras’ phrase needs to be understood in a rather different way. Rather than the human imposing the measure, using themselves as the metric, the human, in their basic relation with beings, is the *metron*, the measure (*Maß*). In this example of Greek thought, Heidegger suggests, being is presence, truth is unconcealment, and measure is of the unconcealed. The human ‘I’, rather than being the subject of a later period, is seen in relation to the beings it belongs to. To be the measure of all things, for the Greeks is therefore that the human lets themselves be revealed through the disclosing of *aletheia*. The measure of all things is the human.

As we might expect, in Descartes this is turned on its head. While “the ‘mathematical’ is a standard of measure (*maßgebend*) for Descartes’ conception of knowledge and knowing,” it is crucial to note that he does not simply take forward an existing way of thinking, but newly defines “the essence of mathematics.” The mathematical, conceived in a new way, and grounded in the human subject, becomes the measure. Heidegger makes this point in a number of ways—essentially the mathematical is not grounded in number, but number is grounded in the mathematical. Because mathematics is something grounded in *ta mathematica*, that is the observation of what is. *Mathesis* is learning, *ta mathematica* what is learnable. In these terms, “modern science, modern mathematics and modern metaphysics sprung from the same root of the mathematical in the wider sense.”

Now, of course, Descartes’ understanding of *res extensa* is dependent on his understanding of *res cogitans*, the human subject, the initial ‘I am’. Such a shift also forces us to rethink the nature of truth, which is no longer understood as the unconcealment Heidegger finds in the Greeks, but as veracity, certitude, accord. The human

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Krell and Frank A. Capuzzi, in: Nietzsche III, San Francisco 1987, 176
522 Heidegger, Nietzsche. Der europäische Nihilismus, GA 48, 178; Nietzsche IV, 94
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subject takes the place of the integrated human. There is a corresponding shift in the notion of measure: “The certitude of the principle cogito sum (ego ens cogitans) determines the essence of all knowledge and everything knowable; that is, of mathesis; hence, of the mathematical… The mathematically accessible, what can be securely reckoned in a being that humans themselves are not, in lifeless nature, is extension (the spatial), extensio, which includes both space and time. Descartes, however, equates extensio and spatium. In that way, the nonhuman realm of finite beings, ‘nature’, is conceived as res extensa. Behind this characterisation of the objectivity of the nature stands the principle expressed in the cogito sum: Being is representedness (Vorgestelltheit).” The fundamental determination of the world is extension, res extensa, but this is grounded on thinking, res cogitans. A human notion becomes the measure of all things. The ontological foundation of modern science, that is, this notion of calculation, both limits the ontic phenomena it is able to experience and to encompass, but also has profound consequences for how we are able to utilize and develop the world. “The step taken by Descartes is already a first and decisive consequence (Folge), a ‘compliance’ (Folgeleistung) by which machination assumes power as transformed truth (correctness), namely as certainty.” Conceiving of the world, of nature as res extensa, requires us to conceive of beings as calculable, as quantitatively measurable. As such “it is the first resolute step through which modern machine technology, and along with it the modern world and modern mankind, become metaphysically possible for the first time.” The modern physical theory of nature therefore prepares the way not simply for technology but for the essence of modern technology. As is well known in Heidegger, the essence of technology is not in itself technological, but is a way of seeing things as calculable, mathematical, extended and therefore controllable. Technological domination means the destruction (Zerstörung) of nature.

526 For a longer discussion, see my “Taking the Measure of the Beiträge: Heidegger, National Socialism and the Calculation of the Political”, in: European Journal of Political Theory 2 (2003), 35-56.
527 Heidegger, Beiträge zur Philosophie, GA65, 132.
2. Calculation and the Political

Heidegger’s contrast between Protagoras and Descartes is useful in that in the first case measure is taken from the world to understand the human, but in the second a human notion of measure is used to understand the world. Heidegger suggests that the outcome of this transition goes beyond metaphysics, but can be seen in particularly clear form in contemporary politics. Heidegger’s Auseinandersetzung with National Socialism can be seen in this light, as it becomes clear to him that Nazism is neither able to offer an alternative to the problem of technology nor deal with the prospect of nihilism. Nor is it able to think the relation between technology and the human. In the final lecture course on Nietzsche he argues that the modern ‘machine economy,’ “the machine-based calculation of all activity and planning,” requires new kinds of humans: “it is not sufficient that one possesses tanks, airplanes and communication equipments; nor is it sufficient that one has humans, who can service them […] only the Over-man (Übermensch) is appropriate to an absolute ‘machine economy’.” But crucially for the argument here he adds that it was Descartes who “forced open the gates of this domain.”

The prepotence of Being in this essential configuration is called machination. It prevents any kind of grounding of the ‘projections’ that are under its power and yet are themselves none the less powerful.

Machination, in this sense, is closely related to the notion of technology, which Heidegger does talk about in the later essays of the Nietzsche volumes. It is the idea of “completed (vollendete) metaphysics.” Technology, as will later be elaborated, “contains the recollection of techne,” a fundamental term in the development of Western thought, but also “makes it possible for the planetary factor of the completion of metaphysics and its dominance to be thought without reference to historiographically demonstrable changes in nations (Völkern) and continents.”

Heidegger goes on to draw total mobilisation and worldviews into this orbit, along with organisation, and service. “Such worldviews drive all calculability of representation and production to the extreme, originating as they do essentially in mankind’s self-imposed
instauration of self in the midst of beings – in the midst of mankind’s unconditioned hegemony over all sources of power on the face of the earth, and indeed its domination over the globe as such.”

Heidegger provides a few examples of how he thinks calculative thinking holds sway in the contemporary age. For example, he shows how Geisteswissenschaft will increasingly “be transmogrified into a pedagogical tool for inculcating a ‘political worldview’.” Heidegger has already notes how the major branches of industry and military Chiefs of Staff (der Generalstab) are more attuned to the uses of the mathematical, technical sciences. Science cannot be preserved in its old ways and means, but crucially, “nor will the technical style of modern science, prefigured in its very beginnings, be altered if we choose new goals for such technology. That style will only be firmly embedded and absolutely validated by such new choices.”

Philosophy is something entirely different, which seems to be the point of this discussion, but the issue is important. Here in 1937, Heidegger is outlining the point of his technology essay. In the second lecture course there is a discussion of the difference between Nietzsche’s thought of force (Kraft) and that of physics. “Physics, whether mechanistic or dynamic in style, thinks the concept of force always and everywhere as a quantitative specification within an equation (Maßbezeichnung innerhalb der Rechnung); physics as such, in the way it takes up nature into its representational framework, can never think force as force.” Before he goes on to show that Nietzsche thinks force in a very different way, he notes that to call Nietzsche’s thought dynamic would require us to think the Greek dynamis, and to realise that the opposition of the dynamic and the static is misleading.

Given its frame of reference, physics always deals with sheer relations of force with a view to the magnitude of their spatio-temporal appearance. The moment physics conducts nature into the domain of the ‘experiment,’ it co-posit in advance the calculative, technical relation (die rechnerische, technische Beziehung) (in the broader sense) between sheer magnitudes of force.

535 Heidegger, Nietzsche’s metaphysic Grundstellung im abendländischen Denken, GA 44, 16; Nietzsche II, 17.
536 Heidegger, Nietzsche’s metaphysic Grundstellung im abendländischen Denken, GA 44, 90; Nietzsche II, 86.
and effects of force, and with calculation it co-posit rationality (mit der Rechnung aber die Rationalität). The last point is crucial, in that Heidegger is showing the integral relation between modern understandings of rationality and calculation. Rationality, ratio, has become mathematical, rather than concerned with relation and balance, or to the Greek term logos, much more associated with language than number: This idea of science never investigating its core concepts as such is returned to in a few places. When it does it ceases to be science, and rather to be philosophy. “The fact that every science as such, being the specific science it is, gains no access to its fundamental concepts and to what those concepts grasp, goes hand in hand with the fact that no science can assert something about itself with the help of its own scientific resources. What mathematics is can never be determined mathematically; what philology is can never be discussed philologically; what biology is can never be uttered biologically. To ask what a science is, is to ask a question that is no longer a scientific question.”

This of course leads to the later suggestion that the philosophical question of technology is not itself a technological question. One of the most extensive discussions of related themes comes in a course delivered shortly after the conclusion of those on Nietzsche, Grundbegriffe. Heidegger highlights what he calls “a metaphysical subjugation to technology,” and notes that “accompanying this subjugation within us is an attitude that grasps everything according to plan and calculation, and does so with a view to vast time-spans in order wilfully and knowingly to secure what can last for the longest possible duration.” Here we find a reduction of the world to calculation and planning. Such comments clearly follow from those outlined since at least 1935.

It is one thing when empires (Reiche) endure for millennia because of their continuing stability. It is something else when world dominions (Weltherrschaften) are knowingly planned to last millennia and the assurance of their existence is undertaken by that will whose essential goal is

537 Heidegger, Nietzsche's metaphysically Grundstellung im abendländischen Denken, GA 44, 90; Nietzsche II, 86.
539 Martin Heidegger, Grundbegriffe, GA 51, Frankfurt am Main 1981. For this course I have made use of the translation by Gary E. Aylesworth, Basic Concepts, Bloomington 1993.
540 Heidegger, Grundbegriffe, GA 51, 17.
the greatest possible duration of the greatest possible order of the largest possible masses (Massen ein wesenhaftes Ziel).\textsuperscript{541}

The obvious reference to the thousand year Reich is put in language of range and scope – temporal extent, duration, order, mass – terms that a moment before were used to illustrate the problem of technology and its metaphysical subjugation. For Heidegger, “this will has been the concealed metaphysical essence of modernity for the last three centuries,” which means that Hitler here is a symptom of a much wider malaise.

It appears in various predecessors and guises that are not sure of themselves and their essence. That in the twentieth century this will would attain the shape of the unconditional, Nietzsche had clearly thought in advance.\textsuperscript{542}

So while it existed in previous forms, it is in Nietzsche's thought that the unconditional form of the modern period (1941) first appears with clarity. Nietzsche here is seen both as the diagnostic, and potentially the problem.

Participation in this will to man’s unconditional mastery over the earth, and the execution of this will, harbor within themselves that subjugation to technology that does not appear as resistance and resentment (Widerwille und Unwille). That subjugation appears as will, and that means it is also effective here […]. However, where one interprets the execution of this metaphysical will as a ‘product’ of selfishness and the caprice of ‘dictators’ and ‘authoritarian states,’ there speak only political calculation and propaganda, or the metaphysical naïveté of a thinking that ran aground centuries ago, or both.\textsuperscript{543}

In other words, those that think that this is caused by the actions of single individuals or states are mistaken. This is a wider problem. Whether this attribution be through critique or celebration it is flawed thinking.

Political circumstances, economic situations, population growth, and the like, can be the proximate causes and horizons for carrying out this metaphysical will of modern world-history. But they are never the ground of this history and therefore never its ‘end’. The will to

\textsuperscript{541} Heidegger, Grundbegriffe, GA51, 17.
\textsuperscript{542} Heidegger, Grundbegriffe, GA51, 17-8.
\textsuperscript{543} Heidegger, Grundbegriffe, GA51, 18.
preservation, and that always means the will to enhance life and its lastingness, works essentially against decline and sees deficiency and powerlessness in what lasts only a short while.\textsuperscript{544}

Again, the very real crises of the modern ages are symptoms of a wider malaise. The will to power, to domination, to preservation and all the metaphysical baggage it carries is another stage in the long running problem.

3. Conclusion

Although Heidegger does not always follow this through, Nietzsche often understood and anticipated many of the themes of the thousand year conclusion.

In fact logic (like geometry and arithmetic) only applies to fictitious truths that we have created. Logic is the attempt to understand the real world by means of a scheme of being we have posited; or, more correctly, to make it formulatable and calculable for us:\textsuperscript{545} “The machine as teacher. – The machine of itself teaches the mutual cooperation of hordes of men in operations where each man has to do only one thing: it provides the model for the party apparatus and war-leadership (Kriegsführung). On the other hand, it does not teach individual autocracy: it makes of many one machine and of every individual an instrument (Werkzeug) to one end. Its most generalized effect is to teach the utility of centralization.”\textsuperscript{546}

In sum, Nietzsche presciently grasped the problem of the twentieth century. Heidegger certainly believed this, but while Nietzsche saw the will to power as both a element of the world and something that could be turned to positive good, Heidegger felt it to be will to will, nihilism, the ultimate form of the old problem. The thinking through of these themes in this period—i.e. the 1936-1940 period—prefigured the later work on technology. But here they are explicitly political issues, and as such machination and calculation offer important insights into Heidegger’s claim that the Nietzsche lectures were an Auseinandersetzung with National Socialism. Indeed it is striking that the Beiträge, An Introduction to Metaphysics and Nietzsche date from more than a decade before the Technology essay, and that they anticipate so many of its concerns. Indeed in

\textsuperscript{544} Heidegger, Grundbegriffe, GA51, 18.
\textsuperscript{545} Note 9[97] from Autumn 1887, in: Nietzsche, KSA Bd. 12, 390-1.
\textsuperscript{546} Friedrich Nietzsche, The Wanderer and his Shadow, § 218, in: Nietzsche, KSA Bd. 2, 653.
one of the essays appended to the lectures in the Nietzsche volume, which dates from 1941, Heidegger suggests “machination (Das Ge-stell),” as the final stage of a history of being.\textsuperscript{547} Indeed, realising the explicitly political context of the development of these ideas may be extremely useful in understanding some of their more problematic claims. More broadly they contribute to an understanding of the relationship between calculation and the political.

The concluding lines of the published \textit{European Nihilism} course provide Heidegger’s summary assessment of the importance of this topic: “The age of the fulfillment of metaphysics – which we descry when we think through the basic features of Nietzsche’s metaphysics – prompts us to consider to what extent we find ourselves in the history of being. It also prompts us to consider—prior to our finding ourselves—the extent to which we must experience history as the release of being into machination, a release that being itself sends, so as to allow its truth to become essential for man out of man’s belonging to it.”\textsuperscript{548}

\textsuperscript{547} Martin Heidegger, \textit{Nietzsche II}, GA 6.2, Frankfurt am Main 1996, 429.
\textsuperscript{548} Heidegger, \textit{Nietzsche II}, GA 6.2, 229; \textit{Nietzsche IV}, 196.