

TECHNOLOGY AND TIME

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“[T]ime is fundamentally a question of an order of being in which *we* are at home.”



The question of time is a notoriously difficult one. “If no one asks me, I know,” St. Augustine famously said. “If I want to explain it to a questioner, I do not know.”¹ The difficulty arises not simply from the paradoxical nature of time itself, in which perceptions, things, and events pass from non-existence to non-existence through a present that seems to vanish as soon as one lays hold of it, but also from the fact that seemingly every other question, every other dimension of created existence, is bound up (and bound together) with this one, from the movements and measurements of the heavens, to the cycle of bodily growth and decay, to the “everydayness” of being-in-the world and our co-belonging with other things, to the structure of experience itself. Augustine and Aristotle, who cast a shadow over the entire Western tradition of reflection on time (including Husserl and Heidegger), are often taken to represent opposite poles in approaching this question, the former representing the “psycho-

1. Augustine, *Confessions*, trans. F. J. Sheed (Indianapolis: Hackett, 1993), XI.14.

logical” understanding with his description of time as some sort of *distentio animi*,² the latter representing a “cosmological” understanding with his definition of time as “a number of change in respect of before and after.”³

It would be an enormous task to elaborate fully either the Augustinian or the Aristotelian conception of time, much less to adjudicate the differences between them or the tradition of reflection that they jointly inspire.⁴ Nevertheless, it may be worthwhile to offer a few synthetic remarks about them and about what they have in common in order to set into relief the real concern of this essay:⁵ the lived experience of time within an order or a form of life that is fundamentally technological, that is, an order that conceives of being in technological terms insofar as it can be said any longer to conceive of being at all.

2. *Ibid.*, XI.26.

3. Aristotle, *Physics* IV.11, 219b.2. The postmodern philosopher Eric Alliez draws this contrast in order to indict Augustine for the subjective conquest of time, arguing that the dissociation between the eternal ideal and temporality allows for a “break between the time of things and the converted time of the soul,” which in turn enables the “primacy of the will over the order of nature,” a precondition for capitalist chrematistics, which “empties the city of its presence to itself by freeing the (monetary) sign of any relation to its natural referent.” I strongly disagree with Alliez. (My rebuttal can be found in my *Augustine and Modernity* [London: Routledge, 2003], 18–26). But if he were correct, it would mean that there is an Augustinian origin to the *technological* conception of time I will be critiquing here, inasmuch as capitalist and technological order are coextensive. See Eric Alliez, *Capital Times*, trans. Georges Van Den Abeele (Minneapolis: University of Minnesota Press, 1996), 82, 109–10, 78, 135.

4. The literature here is vast. For a classic interpretation of the Augustinian position, with extensive bibliography, see James McEvoy, “St. Augustine’s Account of Time and Wittgenstein’s Criticisms,” *The Review of Metaphysics* 37, no. 3 (March 1984): 547–77. For a lucid new study of Aristotle’s understanding, see Ursula Coope, *Time for Aristotle: Physics IV.10–14* (Oxford: Clarendon Press, 2005). See also Roland J. Teske, *The Paradoxes of Time in Saint Augustine* (Milwaukee: Marquette University Press, 1996).

5. Robert Jordan suggests that “the two theories are complementary,” not contradictory: “Augustine does not define time as Aristotle does, because his cosmological interest is indirect. Aristotle brushes the Augustinian problem in passing but does not dwell on it for reasons comparable to those that lead Augustine to treat the physics of time as a subordinate issue, namely, that it is subordinate to his main interest” (“Time and Contingency in St. Augustine,” *The Review of Metaphysics* 8, no. 3 [March 1955]: 406).

AUGUSTINE AND ARISTOTLE: ONCE UPON A TIME

Because time is for Aristotle inextricably bound to change and movement (though it is not identical with them), it belongs to the world of nature (*phusis*).⁶ His principal treatment of time thus falls within the *Physics* rather than the *Metaphysics*.⁷ Augustine's concerns in the overall context of the *Confessions*, where we find his deepest and most sustained thought on the question of time, are quite different, and indeed it is a matter of some debate within Augustinian studies how the meaning of these reflections is shaped by the purposes of the *Confessions* as a whole.⁸ Even so, and at the risk of a superficial oversimplifica-

6. "It is evident then, that time is neither movement nor independent of movement" (Aristotle, *Physics* IV.11, 219a1).

7. For a clear explanation of Aristotle's rationale on this point, see Coope, *Time for Aristotle*, 1–13.

8. James McEvoy indicates the many difficulties involved here: "In the first place, the immediate context of the discussion of time is the meditation on eternity, which opens and closes Book XI and insinuates itself into many strands of the argument. Then again, Book XI takes its place within the series of Books XI–XIII, which are a commentary on the literal and spiritual senses of Genesis I: 'In the beginning God created heaven and earth,' and it forms a sequel to the celebrated discussion of the memory (Bk. X). These books follow, and, perhaps, crown Augustine's autobiography (Bks. I–IX), which deals with the part of his life from childhood up to the death of his mother, Monica. The relationship between the two parts (were they planned as a unity? did Augustine add the last four books after putting the autobiography into circulation? do the two parts cohere in a single argument?) is one of the most debated questions in Augustinian scholarship. . . . Furthermore, the philosophical discussion of time must have special significance in an autobiography, for the unfolding of a life in acts of freedom, in varying experiences of fragmentation, in rebellion against mortality, and in partial integration through meaning and purpose, point to time as a crucial but ambivalent feature of all human experience. These reflections on time can thus be understood as an important key to the entire book. Again, Augustine's view of time becomes a vital element in his theory of the human subject, for it situates his opposition of exterior and interior, or body and soul, and interlaces itself with themes such as memory, intelligence, intention, action, and will. In a more general way, Book XI may be approached as a fine illustration of Augustine's philosophical method, in that its search for understanding within faith moves from the sensible in the direction of the intelligible; for the motion through inwardness toward transcendence, from the fissiparous life of the senses towards the integrity of reason, and from the multiple toward the one, is typical of Augustine's thinking. His discussion of time represents a synthesis of many of the ancient philosophical treatises on time, which was one of the most frequented areas of philosophical analysis, from Plato, down to the Stoics and the Neo-platonists.

tion of these vast differences, each agrees on *what sort of question* the question of time ultimately poses, and this is important for distinguishing between what we might call classical and technological time.

The Augustinian and Aristotelian perspectives agree in the fact that the question of time is fundamentally a question of the relation between being and non-being:⁹ being, not merely in the sense of a bare factual existence, but the fullness, indivisibility, and simplicity of “one act of abiding,” and non-being, in the sense that even those things which can be said to be present do not possess their being perfectly, undividedly, and all at once.¹⁰ For Augustine, especially, this question is existential, as evidenced by the fact “difficult for a modern mind to acknowledge that Augustine’s discussion of time could be objective and

Finally . . . *Confessions* XI was to provide Augustine with some basic elements of the ideas on history which he worked out over a period of fourteen years subsequent to the writing of the *Confessions* and set down in *De Civitate Dei*. Any of these approaches to our subject could be usefully made, and there are doubtless still others, which could prove as fruitful as any I have mentioned” (“St. Augustine’s Account of Time and Wittgenstein’s Criticisms,” 549–50). For an earlier interpretation of my own, including my argument that the genre of the *Confessions* is not “autobiography,” see my *Augustine and Modernity*, 26.

9. There is no conflict between this interpretation and the fact that Aristotle takes up the question of time within the study of *phusis*, since this is a principle of movement and change and time is very closely associated with movement. But movement, we note below, is a paradoxical kind of actuality.

10. Augustine, *Confessions* XI.13. See also X.11: “Who shall lay hold upon their mind and hold it still, that it may stand a little while, and a little while glimpse the splendor of eternity which stands for ever: and compare it with time whose moments never stand, and see that it is not comparable. Then indeed it would see that a long time is long only from the multitude of movements that pass away in succession, because they cannot co-exist: that in eternity nothing passes but all is present, whereas time cannot be seen all at once. It would see that all past is thrust out by the future, and all the future follows upon the past, and past and future alike are wholly created and upheld in their passage by that which is always present?” Teske maintains that Augustine is the first Christian thinker “to articulate the concept of eternity as timeless, as being all at once without past or future,” an idea he traces to Plotinus’s *Ennead* III.7. See Teske, *Paradoxes of Time in Saint Augustine*, 16–23, 56–59. This is true enough, but it seems a rather prejudicial and un-Augustinian way of putting the matter, as if time were the measure of eternity, which is to be characterized principally by what it lacks. It would be truer to Augustine’s understanding to describe time as “eternityless.”

yet an interlude within a prayer.”¹¹ Hence Augustine situates his meditation on time within a more comprehensive meditation on an ever-present eternity for which he longs and with which time is perpetually contrasted. Thus he maintains that “time is only in that it tends toward non-being.”¹² But it is just as urgent for Aristotle, who puzzles over the paradoxes of time no less than Augustine does. “One part [of time] is and is not, while the other is going to be and is not yet. Yet time—both infinite time and any time you like to take—is made up of these. One would naturally suppose that what is made up of things which do not exist could have no share in being.”¹³ And we see that this relation between being and non-being (or between perfect and imperfect being) is evident in Aristotle’s eventual “definition” of time itself as “the number of motion with respect to before and after” when we remember that motion for itself is a kind of imperfect actuality, namely “the actuality of a potency *qua* potency.”¹⁴ And it is underscored by his argument in *Physics* VIII “that the first movement,” upon which all others depend, “must be something one and eternal”—that is, a movement that is not successive and is therefore indivisible—which depends in turn on a perfect actuality which is unmoved.¹⁵

The paradoxes of time lead both thinkers to reflect at length on the paradoxical character of the present (*praesens*) or “the now” (*to nun*). On the one hand, the present seems to be infinitely divisible. “If we conceive of some point of time which cannot be divided into even the minutest parts of moments, that is the only point that can be called present: and that point flees at

11. Jordan, “Time and Contingency in St. Augustine,” 403. “The problem of time is to give creatures an anchorage in reality and a place in history, to give to the whole sensible world meaning and significant being rather than an absurd existence that gives rise only to nausea. So, in a sense, Augustine uses this very threat of non-existence to mediate between the creature and the very fullness of being, making the most of the limit to reach the Unlimited, turning the greatest and most pervasive of all threats, non-existence or bare formless existence, into a way of salvation” (410).

12. Augustine, *Confessions* XI.14.

13. Aristotle, *Physics* IV.10, 217b33–218b3.

14. Aristotle, *Physics* III.1, 201a.10.

15. Aristotle, *Physics* VIII.6, 259b.15ff; *Metaphysics* XII.6, 1071b.20.

such lightning speed from being future to being past, that it has no extent of duration at all.”¹⁶ Similarly, Aristotle observes that “of times, some parts have been while others have yet to be, and no part of it *is*, though it is divisible.”¹⁷ He therefore draws the analogy that “the now” is to time as a point is to a line.¹⁸ And yet, on the other hand, if the present were infinitely divisible to the point of nothingness, neither existence nor experience would be possible. For it is only in the actuality of the present that we can measure time by holding past, present, and future together in an intelligible unity, and only by virtue of the all-at-once character of subsistent existence that I, or this rock, or Rome can be said to endure through the mutability and change that marks the continuous passage from non-being to non-being.

The key to the paradox lies in Augustine’s observation that “the present has no space,” a point with its parallel in Aristotle.¹⁹ In its negative sense, the observation indicates Augustine’s frustration at the fact that the present is fleeting and ungraspable, an index of our mutable and ever-changing existence terminating in death. Again, Aristotle says something similar. “Those things which are subject to perishing and becoming—generally, those which at one time exist, at another do not, are necessarily in time.”²⁰ And yet there is a positive sense as well. To deny the spatiality of the present is to deny that the “extension” of the present is the same kind of divisible quantum that space is, or rather it is to affirm that it shares something of the indivisible simplicity and actuality that characterizes immutable, eternal being. To affirm both senses at once is to say that time is both a successive series of instances *and* that these are somehow held together by or participate in a simple unity transcending those instances. This interpretation of the passing temporal present as a participation in the ever-present actuality of eternity bears a family resemblance to Augustine’s argument for eternal truth in *De Libero Arbitrio*, where “one” is not merely an integer first in

16. Augustine, *Confessions* XI.15.

17. Aristotle, *Physics* IV.10, 218a5.

18. *Ibid.*, 220a.10.

19. Augustine, *Confessions* XI.27.

20. Aristotle, *Physics* IV.12, 221b.25.

the series of numbers, but the simple unity that is the ground of all number and recapitulated in each of them.²¹

Again there are remarkable parallels to be found in Aristotle. Though Aristotle likens time to a line and “the now” to a point, the now, he says, “is no *part* of time,” any more than a point can be said to be part of a line.²² Rather he regards the now as a *boundary* and thus a “link” (*sunecheia*) between past and future.²³ This is important in a couple of respects. First, unlike the lines of Cartesian geometry, which serve to clearly and distinctly separate what falls on either side of them, Aristotelian boundaries are a function of the more primitive distinction between potency and act.²⁴ This is evident in a number of places, for instance in his discussion of place, “the boundary of the containing body at which it is in contact with the contained body,” or “the innermost motionless boundary of what contains.”²⁵ But it is perhaps most evident, or at least most interesting, in *De Anima*, where Aristotle describes flesh as the medium for the sense of touch, drawing on an analogy with water as the medium between two submerged objects, whose contact with each other even at minute distances occurs through their mutual contact with the water itself. The

21. Augustine, *De Libero Arbitrio* II.8.

22. Aristotle, *Physics* IV.11, 220a.18.

23. *Ibid.*, 222a10–11.

24. “I call a perception ‘clear’ when it is present and accessible to the attentive mind—just as we say we see something clearly when it is present to the eye’s gaze and stimulates it with a sufficient degree of strength and accessibility. I call a perception ‘distinct’ if, as well as being clear, it is so sharply separated from all other perceptions that it contains within itself only what is clear” (René Descartes, *Principles of Philosophy* I, in *The Philosophical Writings of Descartes*, trans. John Cottingham, Robert Stoothoff, Dugald Murdoch [Cambridge: Cambridge University Press, 1985], I:207–08). See also, Descartes, *Discourse on the Method* II, in *The Philosophical Writings of Descartes*, I:121: “Next I observed that in order to know these proportions I would need sometimes to consider them separately, and sometimes merely to keep them in mind or understand many together. And I thought that in order the better to consider them separately I should suppose them to hold between lines, because I did not find anything simpler, nor anything that I could represent more distinctly to my imagination and senses.”

25. Aristotle, *Physics* IV.4, 212a5, 20. For further elaboration see my *No God, No Science? Theology, Cosmology, Biology* (Oxford: Wiley-Blackwell, 2013), 69.

point is that boundaries simultaneously unite *and* distinguish what is joined by them in what Aristotle elsewhere calls a “single actuality of both alike.”²⁶ When we bring these considerations to this discussion of time, we see that as a boundary, the now, precisely because it is not extended in the way that space is and is not a “part” of time in the way that a segment is part of a line, is both the point at which things moving through time achieve the limited actuality proper to them—which is why the “now” is both different and same²⁷—and the point in virtue of which the subjects of these successive movements acquire a unity that is simultaneously existential and intelligible. Thus Aristotle, the alleged author of “cosmological time” makes the remarkable suggestion that there could not be time without the soul, since time is a *number* of movement, and since only the soul is qualified to count.²⁸ The point is not that time is subjective for Aristotle any more than for Augustine, who was painfully aware of the vicissitudes of historical existence, but rather that as for Augustine, the *existential* unity of being in time reaches its highest actualization in the *intelligible* unity of history (times present, past, and future), which can be realized only in the soul. “It is in you, O my mind, that I measure time.”²⁹ Admittedly, such a notion seems very strange to us, but that is because we inhabit a deracinated, “technological” universe, in which nothing, least of all the mind, can properly be said to be at home. But it makes perfect sense when one recalls that both thinkers live in an intelligible and hierarchical universe ordered to our contemplation. “Indeed, if you regard them carefully and piously, every kind of creature and every movement that can be considered by the human mind speaks to us for our instruction. Their diverse movements and dispositions are like so many voices crying out to us, telling us to recognize their Creator.”³⁰ For Aristotle,

26. Aristotle, *Physics* III.3, 202a.18.

27. Aristotle, *Physics* IV.11, 219b.30. In order to make sense of this, it must be remembered that time is the number of *motion*, and that while motion is a certain kind of actuality, it is the actuality of a potency *qua* potency, that is, the actuality of change as *changing*.

28. Aristotle, *Physics* IV.14, 223a.25.

29. Augustine, *Confessions* XI.27.

30. Augustine, *De Libero* III.23.

this notion is metaphysically undergirded by the principle that the actuality of any efficient cause is realized not in the cause, but in the effect with which it is simultaneous, such that those potentialities of the world *qua* sensible and intelligible can only be realized as they are actually sensed and known by us.³¹ Jonathan Lear grasps the significance: “If in Aristotle’s world, form which exists as a potentiality is in part a force toward the realization of form at the highest level of actuality, *then one ought to conceive of perceptible forms embodied in physical objects as forces directed toward the awareness of forms*. For it is only in the awareness of a perceiver that perceptible form achieves its highest level of actuality.”³²

What conclusions are we to draw from this somewhat superficial synthesis? First, insofar as Augustine and Aristotle are representative of the classical and Christian tradition, we can say that for the tradition, the question of time is ultimately a question of the way that beings who are subject to change participate in being, though for Aristotle this question falls within physics since it concerns the movements of mutable beings. Precisely because time is fundamentally a question of an order of being in which *we* are at home, and because being is fundamentally intelligible, it is simultaneously a question of existence *and* experience, about the reality of time *and* our perception of it, where this reality achieves a level of actualization that it cannot have on its own. Secondly, the “now” or the present from which times are demarcated is the emerging forth into actuality, a participation in the all-at-once simplicity of eternal being without which the subsistence of temporal beings ceases to be intelligible. Ursula Coope denies that Aristotle solves the paradoxes of time by introducing an “atemporal notion of being,” but this seems to miss the crucial point for both thinkers, which *is that temporal existence is itself marked by the transcendence of time*. Indeed the “*distentio*” of memory, intention, and expectation exemplify a unity that transcends

31. To my mind, Ursula Coope’s rather “analytic” attempt at explaining Aristotle’s argument for time’s dependence on the soul would have been aided by closer attention to these principles. See Coope, *Time for Aristotle*, 159–72.

32. Jonathan Lear, *Aristotle: The Desire to Understand* (Cambridge: Cambridge University Press, 1988), 109, emphasis original. Lear continues: “The sensible form of a tree is a real force in the tree toward being perceived as a tree. The perceiving of the tree must occur in the sense faculty of a perceiver, but the perceiving itself is nevertheless the highest realization of sensible form.”

the subject's "point identity" at any given instance, and it is only on the basis of this transcendence that the successive multiplicity of time, and the unity of past, present, and future belonging to a single subject is intelligible.³³ D. C. Schindler spells out the important implications:

[I]t is true that no substance can exist merely temporally; the sheer multiplicity of time is incompatible with any sort of subsistent being. A fortiori, a subsistent being does not come to be merely in time. Once we recognize this we are able to say that, if there is a subsistent being at all, its conditions of possibility were not merely given in the temporal moment prior to its actuality, rather that its possibility is given simultaneously with its actuality, which transcends time by definition. What this means is that we cannot think of the coming-to-be of substances merely "horizontally," but must rather think of them "vertically" as unfolding in time *from above*.³⁴

This is what it means to speak of creation as Augustine does at the beginning of his reflections on time in the *Confessions*, that creation itself is outside of time, since time itself is a creature. "At no time then had you not made anything, for time itself you made."³⁵

The implications of this are vast, not the least of which is that the reality of creation is the unarticulated condition of possibility for any theory of the world, even those which would deny it, and a metaphysics of creation is indispensable for its intelligibility.³⁶ But for the purposes of this discussion, let us dwell on only two. First, it is time's relation to eternity that grounds the ontological identity of each subsistent thing. For just as *cre-*

33. See Coope, *Time for Aristotle*, 19–21.

34. D. C. Schindler, *The Catholicity of Reason* (Grand Rapids: Eerdmans, 2013), 161.

35. Augustine, *Confessions* XI.14. Schindler expands this idea with respect not to Augustine, but to Aquinas, whose careful distinctions allow it to be expounded more clearly: "Moreover, insofar as creation is a divine act, it does not itself take place in time, as a movement or a change, which always implies a succession of moments" (*The Catholicity of Reason*, 158).

36. This is one of the central theses of my *No God, No Science?*, and D. C. Schindler makes a similar case in *The Catholicity of Reason*, 137–62.

atio ex nihilo is not an event *within* time, but the supratemporal origin and condition of possibility for the unfolding *of* time, so too the act of being, the passive side of *creatio continua* as it were, transcends and is thus just so far “outside” of time insofar as it partakes in the unity and simplicity of act. This is the understanding more or less common to Plato, Aristotle, and Christianity alike that a thing that partakes in being is somehow granted a participation in the unity and simplicity of God. And yet this transcendence *of* time is entirely *within* time, so that the abiding actuality of the living thing is not juxtaposed to its historical development. Rather it is the condition upon which a thing can be the subject of its own development and therefore the condition upon which a history can be ascribed to it. And this is the second point, that the relation of time to eternity also grounds the intelligibility of historical experience. To the extent that this relation is truly ontological, it cannot be fully eradicated and will be implicated in the very attempts to deny it. Nevertheless, the fact that a thing is impossible does not stop us from trying. And the attempt to eliminate every form of transcendence, synonymous with the technologization of being, can only efface the ontological identity of all things and our relation to eternity, and destroy the coherency of historical existence.

THE TECHNOLOGICAL TURN

Let us then propose that the “technologization of being” is the very essence of modernity, with the stipulation that this does not preclude other true descriptions of this essence (the forgetfulness of being, the dethronement of the good, the bifurcation of reality, etc.). What does this mean, and how does it come about?

Historically speaking, modernity is a polyhedron with metaphysical, social, political, and even commercial facets. But in the order of reason, modernity commences as a revolution in natural philosophy and metaphysics—political modernity logically presupposes this—and indeed an insurrection against the tradition in its Aristotelian form.³⁷ Francis Bacon, inaugurating

37. I have addressed the matter of this paragraph and the next at greater length elsewhere, most notably in my *No God, No Science?*, 107–49, but also

not simply a new and improved method for achieving the ends of traditional *scientia*, but a radical, new conception of the ends of knowledge and the nature of truth, declares that “there is nothing sound in the notions of logic and physics: neither substance, nor quality, nor action and passion, nor being itself are good notions; much less heavy, light, dense, rare, wet, dry, generation, corruption, attraction, repulsion, element, matter, form and so on; all fanciful and ill defined.”³⁸ Bacon was only one of numerous important figures to reject the Aristotelian conception of being and form, with manifold consequences. The elimination of form liberated matter, a potency in Aristotelian terms, as something fully positive and actual in its own right. To be sure, this spawned a variety of different versions of “corpuscularianism” and debates over whether to identify matter with mass or extension, over whether corpuscles were divisible or impenetrable, and disagreement over the possibility of movement in a void. Even so, it is possible to identify a common essence underlying these diverse formulations, which holds for a physics of energy as well as a physics of force. The essence of this new positive conception of matter in all its formulations is dimensioned quantity or sheer abstract externality, which insured its measurability. It is arrived at by the annihilation in thought of everything that heretofore characterized form—quality, immanence, intrinsic intelligibility—and thus by destruction in thought of the actual world of things-in-act.³⁹ What is left, as René Guénon puts it, is “the ‘residue’ of an existence of everything that constituted its essence.”⁴⁰ Moreover the rejection of being and form effectively puts an end to metaphysics as a science, elevating the new mechanical physics

in “Aggiornamento and the Sciences: What Does It Mean?” *Communio: International Catholic Review* 39, no. 1–2 (Spring–Summer 2012): 294–313; “Re-Conceiving the Organism: Why American Catholic Bioethics Needs a Better Theory of Human Life,” *Communio: International Catholic Review* 41, no. 3 (Fall 2014): 615–53; “When Art Replaces Nature,” *Humanum Review: Issues in Family, Culture and Science* 2 (2014), <http://humanumreview.com/articles/when-art-replaces-nature>.

38. Francis Bacon, *The New Organon*, ed. Lisa Jardine and Michael Silverthorne (Cambridge: Cambridge University Press, 2000), I.15, 35.

39. See my *No God, No Science?*, 113–20, for a discussion of the diverse applications of the “principle of annihilation.”

40. René Guénon, *The Reign of Quantity* (London: Luzac, 1953), 13.

to the position of first philosophy and fulfilling Descartes's stated ambition in the *Discourse* of advancing "a new practical philosophy which might replace the speculative philosophy taught in the schools."⁴¹

The elimination of form and *esse* effected a fundamental transformation in the meaning of both entity and order. It emptied things of the immanence, unity, and interiority that form and *esse* had conferred on them, the very qualities that for Aristotle distinguished things existing by nature from artifacts.⁴² Art thus ceases to imitate nature as it had for the tradition. Rather nature becomes art, a piece of technology, as it were, whose unity and cohesiveness is imposed from without, first by the hand of a contriving God, later by the hand of history or natural selection. Consequently, as Hans Jonas points out, "wholeness as an autonomous cause with respect to its component parts, and therefore the ground of its own becoming, shared the fate of final causes. In Newtonian physics the integral wholeness of form . . . is broken up into elementary factors for which the parallelogram of forces is a fitting graphic symbol. The presence of the future, formerly conceived as potentiality of becoming, consists now in the calculability of the operation of the forces discernible in a given configuration."⁴³ This transformation of the meaning of entity betrays a corresponding transformation of the meaning of order. *Esse* was not just proper to each thing but paradoxically common to all, such that the very act of being by which each thing was an incommunicable "this" simultaneously bound that thing into the single actuality of the cosmos, whose unity was fundamentally a unity of being.⁴⁴ Thus for Thomas and the

41. Descartes, *Discourse on the Method* VI, in *The Philosophical Writings of Descartes*, I:142.

42. "For I do not recognize any difference between artefacts and natural bodies except that the operations of artefacts are for the most part performed by mechanisms which are large enough to be easily perceivable by the senses—as indeed must be the case if they are to be capable of being manufactured by human beings" (Descartes, *Principles of Philosophy* IV, in *The Philosophical Writings of Descartes*, I:288).

43. Hans Jonas, *The Phenomenon of Life: Toward a Philosophical Biology* (Evanston: Northwestern University Press, 2001), 201.

44. See Adrian J. Walker, "Personal Singularity and the *Communio Personarum*: A Creative Development of Thomas Aquinas' Doctrine of *Esse*

tradition, the world is one because “things are structured in a mutual order (*ordo ad invicem*)” and are “ordained toward each other (*quaedam ad alia ordinantur*).”⁴⁵ With the suppression of form and *esse*, science took its leave of the actual world, the world of things-in-act, premising the actual world on a counterfactual world of inertial singulars subsisting in ontological isolation.⁴⁶ Subsequently, the unity of the universe will be “derived from the fact that it is one aggregate,” held together, as it were, by the power of God.⁴⁷ Finally, the ontological priority of the parts of reality to the whole of it is reflected in the noetic priority of analysis over synthesis. Thought as such becomes technological, that is, a fusing of making and knowing, in at least two senses. The first is the more obvious Baconian sense encapsulated in the famous aphorism “knowledge is power.” If natural things are effectively artifacts, then the knowledge of those things is essentially engineering. It consists in our capacity to make, unmake, and remake them, “to generate or superinduce on a given body a new nature or natures,” the measure of which is success or technological possibility.⁴⁸ The second is a more primitive Hobbesian-Lockean sense, wherein the discontinuity between mind and world actually warrants Baconian experimentalism.⁴⁹ With the unity of the world reduced to a unity of aggregation, *ratio*, our discursive reasoning in time, no longer proceeds from (and returns to) *nous* or *intellectus*, our all-at-once apprehension of the whole in its self-communication to us (and an intimation

Commune,” *Communio: International Catholic Review* 31, no. 3 (Fall 2004): 457–75.

45. Amos Funkenstein, *Theology and the Scientific Imagination from the Middle-Ages to the Seventeenth Century* (Princeton: Princeton University Press, 1986), 142.

46. Henceforth “scientific explanation” will largely consist in discovery of the laws governing the construction of the “real world” from the counterfactual world abstracted from it through analysis.

47. Funkenstein, *Theology and the Scientific Imagination*, 143. For John Locke, for instance, “universe” is simply a collective idea of substances compounded by addition (*An Essay Concerning Human Understanding* [London: Penguin, 1997], II.23).

48. Bacon, *The New Organon*, II.1.

49. See, e.g., Locke, *An Essay Concerning Human Understanding*, III.3.

of the *nunc stans* of divine self-knowing).⁵⁰ Rather, the building blocks of thought are now simple (clear and distinct) ideas mysteriously caused by the primary qualities of otherwise unintelligible things subsisting outside us. Reason, then, is principally a matter of compounding or adding simple ideas into complex (synthetic) ones, the “is” in any proposition now simply functioning as a copula joining two extrinsically related terms.⁵¹ The act of knowing, in its most primitive sense, is thus already an act of making.

All of this has its effect on our understanding of time. First, the renunciation of form and being brings about a bifurcation of reality, most famously in the Cartesian dualism of *res extensa* and *res cogitans*, but more subtly within every form of modern materialism, which simply presupposes a dualistic conception of matter and then attempts to account for the poles of the dual-

50. “[J]ust as we attribute the rational method to natural philosophy because it adheres most closely to the method of reason, so we attribute the intellectual method to divine science because it adheres most closely to the method of intellect. Now reason differs from intellect as multitude does from unity. Thus Boethius says that reasoning is related to understanding as time to eternity and as a circle to its center. For it is distinctive of reason to disperse itself in the consideration of many things, and then to gather one simple truth from them. Thus Dionysius says: ‘Souls have the power of reasoning in that they approach the truth of things from various angles, and in this respect they are inferior to the angels.’ Conversely intellect first contemplates a truth one and undivided and in that truth comprehends a whole multitude, as God, by knowing his essence, knows all things. Thus Dionysius says: ‘Angelic minds have the power of intellect in that they understand divine truths in a unified way.’ It is clear, then, that rational thinking ends in intellectual thinking, following the process of analysis, in which reason gathers one simple truth from many things. And again, intellectual thinking is the beginning of rational thinking, following the process of synthesis, in which the intellect comprehends a multiplicity in unity” (Thomas Aquinas, “*In Boethius De Trinitate*,” VI.1, ad 4, in *Thomas Aquinas: The Division and Methods of the Sciences*, trans. Armand Maurer [Toronto: Pontifical Institute of Medieval Studies, 1986], 70–71).

51. See, for example, Locke, *An Essay Concerning Human Understanding*, III.8.1: “All our affirmations then are only in concrete, which is the affirming, not one abstract idea to be another, but one abstract idea to be joint to another . . . e.g., ‘a man is white’ signifies, that the thing that has the essence of a man has also in it the essence of whiteness, which is nothing but a power to produce the idea of whiteness in one, whose eyes can discover ordinary objects.” For more on the significance of this point, see Henry Veatch, *Two Logics: The Conflict Between Classical and Neo-Analytic Philosophy* (Evanston: Northwestern University Press, 1969), 42–125; Schindler, *The Catholicity of Reason*, 148–53.

ism on that basis, and within modern science, which perpetually exempts itself from its own reductive analyses in the very moment of its theorizing.⁵² Accordingly, the question of time ceases to be a question of being and *therefore also* experience, but is rather bi-furcated along these dualistic lines into either a physical problem, on the new mechanistic understanding of *phusis*, or a problem of epistemology, whether the idea of time is understood to be derived from the successive form of impressions as in Locke or Hume or the a priori form of sensible intuition in Kant. Second, the elimination of form and being eliminates just that self-transcending actuality of the “vertical” dimension of the act of being, which corresponded to traditional conceptions of “the now” as undivided actuality, though Kant arguably preserves something of this in the transcendental unity of apperception. Consequently, time is reconceived not as a participation in the actuality of being, but in the image of space, as an extensive quantity. Thus just as one no longer represents a unity beyond number and the ground of every number that recapitulates unity and becomes in modern mathematics merely the first in the series of positive integers, so “the now” ceases to exemplify the undivided actuality of eternity and becomes merely one of a series of discrete instances within a linear continuum. Indeed even the eternity of God comes to be conceived in this way. In Newton, for instance, space and time are the “measurement” of God’s existence. “The quantity of God’s existence is eternal” because he exists at all times and “infinite” because his being extends endlessly in all directions.⁵³ One finds a similar idea in Locke, for whom the

52. See Jonas, *The Phenomenon of Life*, 108–34.

53. “Space,” Newton writes, “is a disposition of being *qua* being. No being exists or can exist which is not related to space in some way. God is everywhere, created minds are somewhere, and body is in the space that it occupies; and whatever is neither everywhere nor anywhere does not exist. And hence it follows that space is an effect arising from the first existence of being, because when any being is postulated, space is postulated. And the same may be said of duration: for certainly both are dispositions of being or attributes according to which we denominate quantitatively the presence and duration of any individual thing. *So the quantity of the existence of God was eternal, in relation to duration; and infinite in relation to the space in which he is present*” (“De Gravitatione et Aequipondio Fluidorum,” in *Unpublished Scientific Papers of Isaac Newton*, ed. A. Rupert Hall and Marie Boas Hall [Cambridge: Cambridge University Press, 1962], 136), emphasis mine.

idea of eternity is derived merely from the endless addition of any measure of duration.⁵⁴ Of course these “bad infinities” are a long way from the infinity of God as traditionally understood, a unity beyond number and a fullness of actuality that is, as such, utterly simple. This infinity is “everywhere entire,” as Augustine put it, precisely because it is also nowhere.⁵⁵ It is thus wholly actual at every finite point, which is to say that it bears no “real relation” to any finite point and is indivisible by them. It is of an entirely different order and indeed transcends all order as the source of their limited and participated actuality. It is, as Alan of Lille struggled to put it, like an “intelligible sphere whose center is everywhere and whose circumference is nowhere.”⁵⁶

By eliminating the transcendence of being in time, the mechanistic or technological ontology of the seventeenth and eighteenth centuries leads of its own inner logic to the various historicisms of the nineteenth.⁵⁷ Once nature is conflated with artifice and things are emptied of the self-transcending identity, the ontological identity of each thing—what it is—becomes precisely identical to the sum of the antecedent causes that produced it and to the coordinated interaction of its parts—how it came to be and how it works. To offer a scientific explanation of any natural phenomenon then is to provide a formalistic, law-like description of the process of a thing’s coming-to-be, such that it can be predicted, retro-dicted, produced, or manipulated in the future.⁵⁸ And so, as early as the seventeenth century and well before Marx, there begins to emerge a “new science of providence” or “cunning of history” type arguments, which sought to

54. Locke, *An Essay Concerning Human Understanding*, II.17.5, 201.

55. Augustine, *De Civitate Dei* XI.5; *Confessions* I.3.

56. Alan of Lille, “Theological Rules,” n. 7 [PL 210, 627], cited in Bonaventure, *Itinerarium Mentis in Deum*, V.8.

57. It is surely worth something that John Dewey saw his own progressive historicism as the natural outworking of the Baconian spirit. See Dewey, *Reconstruction in Philosophy* (New York: Henry Hold and Company, 1920), 28–52.

58. The seventeenth-century movement from form to formalism is reflected in the prominence then enjoyed by the “laws of nature,” as exemplified by Newton’s laws of motion and later by Darwinian natural selection, which aspired (and failed) to the level of law-like uniformity required of British science in the nineteenth century.

provide a transcendental mechanism for the outworking of history understood *as* the history of construction, the linear series of causes and effects culminating in the construction of the present. The British discipline of political-economy belongs to this tradition as does Marx, though he takes his immediate inspiration from Hegel.⁵⁹ The pervasive idea that the scientific revolution dispensed with all of Aristotle's four causes save the efficient is something of a philosophical urban legend. It is not true. Rather, it preserved and transformed the four causes in light of the conflation of nature and art and the paradigm shift from a physics of form to a physics of forces.⁶⁰ Inasmuch as these "cunning of history" arguments typically supply the mechanism for bringing "providential" outcomes from heterogeneous pursuits, they can be seen to transpose a kind of formal and final causality, along with a kind of transcendence, onto a horizontal plane.

REVOLUTIONARY TIMES

Technology is not simply an idea, of course, but a material reality, and one is tempted to say a regime, inasmuch as we are governed

59. "Thus, I shall argue, the further articulation of the space of the secular political economy coincides with a different and somewhat contrariwise theological insertion. No longer is God the ultimate arbitrary power behind human arbitrary power; instead he is a God regularly and immediately present to human society, holding it together, just like the Newtonian God among the planetary bodies in Newtonian space. This does not, however, amount to the reintroduction of the traditional providence of Catholic orthodoxy. Such a providence was ultimately unknown and could only be dimly apprehended. This providence can be exactly known about, and it is invoked at the level of finite causality. . . . [I]n truth there was no point at which a theological or metaphysical thesis got translated into a scientific and empirical one, no Bachelardian 'epistemological break.' The only change was a relatively trivial one, from ascribing design to a transcendent God, to ascribing it to an immanent 'nature.' The 'scientific discovery' of the division of labour as a means of reconciling individual and public interest had already been made by the natural theologians and [Adam] Smith only elaborated the idea with more technical precision" (John Milbank, *Theology and Social Theory: Beyond Secular Reason* [Oxford: Blackwell, 1990], 29, 39). For more on the new science of history, which begins principally with Vico, see Funkenstein, *Theology and the Scientific Imagination*, 279–89.

60. Indeed it is the extrinsic teleology that results from this transformation that the Darwinian tradition means when it rejects teleology, mistaking this modern reduction of teleology for the whole of it. See my *No God, No Science?*, 150–249.

more deeply by the interminable and dynamic exigencies of technological order than by liberal democracy or by the rule of law.⁶¹ We need not go so far as the late Italian philosopher Augusto Del Noce in saying that history after 1945 is the outworking of a single philosophy—in his case the ironic outworking of the internal contradictions of Marxism—to see that these pervasive ontological assumptions, which are technological in nature, have made possible a new form of technological society that profoundly shapes our perception of time and our lived experience of history.⁶² I would like to reflect on this for the remainder of this essay.

The essence of modernity, we have said, is the technologization of being, wherein being itself is eclipsed, *nature* is conflated with artifice, and contemplation is conflated with action. In other words, if natural things are essentially artifacts, machines, or processes, then the knowledge of nature is essentially engineering. But if the knowledge is essentially engineering, then the truth of that knowledge is whatever is technically possible.⁶³ And since the ultimate limits of possibility can only be determined by transgressing the present limits of possibility, a thoroughly technological society, one whose conceptions of being, nature, and reason are themselves technological, will establish revolution as a permanent principle, giving it the stability of an institutional form. Del Noce regards the Marxist concept of “total revolution” as the apex of this dynamism, and perhaps it is,

61. See my “A More Perfect Absolutism,” *First Things* (October 2016), 25–31.

62. Augusto Del Noce, *The Crisis of Modernity*, ed. and trans. Carlo Lancelotti (Montreal: McGill-Queens University Press, 2014), 75. Hans Jonas, contending that technological society has altered the nature of human action, indicates just how powerfully it shapes historical experience: “The containment of nearness and contemporaneity is gone, swept away by the spatial spread and time span of the cause-effect trains which technological practice sets afoot, even when undertaken for proximate ends. Their irreversibility conjoined to their aggregate magnitude injects another novel factor into the moral equation. Add to this their cumulative character: their effects keep adding themselves to one another, with the result that the situation for later subjects and their choices of action will be progressively different from that of the initial agent and ever more the fated product of what was done before” (*The Imperative of Responsibility: In Search of an Ethics for the Technological Age* [Chicago: University of Chicago Press, 1984], 7).

63. For a brief, beautiful, and incisive summary of the modern “history of truth,” see Joseph Ratzinger, *Introduction to Christianity* (San Francisco: Ignatius Press, 2004), 57–66.

though it should be obvious from all that has been said that it is implicit in the founding assumptions of modernity. Nevertheless, viewing this dynamism from Del Noce's point of view offers at least a couple of clarifying advantages. The teleology and eschatology of Marx's dialectical materialism, Del Noce argues, could not withstand the "spirit of negation" endemic in the notion of total revolution.⁶⁴ In other words, if we may extrapolate beyond Marxism, the "horizontal transcendence" of the progressive or providential view of history in early modernity is negated by the perpetual revolution entailed in its founding ontological judgments, which is why, in the case of Marxism, a philosophy that began championing global proletarian revolution and a workers' utopia ended up as the *de facto* philosophy of the Western bourgeoisie and how "the same young intellectuals who earlier preached the revolution in the name of Marx have become reconciled with neo-capitalist society in the name of Nietzsche, making a perfectly smooth transition from their old position to the new."⁶⁵ What is left in the empty space vacated by horizontal transcendence is simply the interminable process of technological revolution itself: the perpetual destruction of every given limit and the endless proliferation of means.

What effect does technological or revolutionary time have on the shape of lived experience? The first thing to note is the most subtle. It should be recalled how profoundly technological reason alters the primitive instance of what it now means for us to think. "Has it never struck anyone as passing strange," asks Henry Veatch, "that the logic of the *Principia Mathematica*, for all of its elaboration, provides no means either for saying or for thinking what anything is?"⁶⁶ Astonishing, when one pauses to think about it, that we live in a society dominated by a form of reason uninterested and indeed incapable of thinking about what

64. Del Noce, *The Crisis of Modernity*, see, for example, 34, 122.

65. *Ibid.*, 62.

66. Veatch continues, "And if we not only cannot claim to know what things are, but if our very logic debars us from even stating or formulating propositions as to what this, that or the other thing is, then the very idea of what a thing is, or the very conviction that each thing is what it is, that things are what they are, or indeed that anything is anything becomes simply impossible, or at least logically improper" (*Two Logics*, 26).

things are. And yet, if one cannot think about what things are, then one cannot glimpse being that transcends the passing show of moments, or rather, since one cannot help but glimpse this insofar as he thinks at all, he will be unable to give rational expression to what he sees. Secondly, inasmuch as history in technological society is a process of perpetual annihilation of antecedent given order, the dynamism of technological society functions to sever and atomize each generation from every other. Indeed this, for Hans Jonas, is the very measure and test of whether one lives in a time of revolution.

If a man in the fullness of his days, at the end of his life, can pass on the wisdom of his experience to those who grow up after him; if what he has learned in his youth, added to but not discarded in his maturity, still serves him in his old age and is still worth teaching the then young—then his was not an age of revolution, not counting, of course, abortive revolutions. The world into which his children enter is still *his* world, not because it is entirely unchanged, but because the changes that did occur were gradual and limited enough for him to absorb them into his initial stock and keep abreast of them. If, however, a man in his advancing years has to turn to his children, or grandchildren, to have them tell him what the present is about; if his own acquired knowledge and understanding no longer avail him; if at the end of his days he finds himself to be obsolete rather than wise—then we may term the rate and scope of change that thus overtook him, “revolutionary.”⁶⁷

In a technological society, it will therefore be impossible to maintain that unity of past, present, and future that is *traditio*, the handing on of received wisdom and culture, a properly human inheritance, from one generation to the next. The reduction of being to process within technological order can be detected in what Jonas argues is the transformed nature of human action under these conditions. In a society wherein transcendence permits the passing on of tradition, “moral actions were largely ‘typical,’ that is, conforming to precedent. In contrast with this, the cumulative self-propagation of the

67. Hans Jonas, *Philosophical Essays: From Ancient Creed to Technological Man* (New York: Atropos Press, 2010), 47.

technological change of the world constantly overtakes the conditions of its contributing acts and moves through none but unprecedented situations, for which the lessons of experience are powerless.”⁶⁸

We have seen that the elimination of transcendence leads to the re-conception of time in the image of space. But technology conquers space—think of modern transportation, the cell phone, the internet—and so eliminates time and our capacity to indwell it. The irony, then, is that the elimination of the transcendent results in an immediate presentism, with little retention of the past, attention to the present, or intention for the future, in which it is scarcely possible to pray, or to think, or to love. And thus the *distentio animi* gives way to another form of *distentio*, also not unknown to Augustine.

But because Your loving-kindness is better than life, behold, my life is but a distraction, and Your right hand upheld me in my Lord, the Son of Man, the Mediator between You, The One, and us the many—in many distractions amid many things—that through Him I may apprehend in whom I have been apprehended, and may be recollected from my old days, following The One, forgetting the things that are past; and not distracted, but drawn on, not to those things which shall be and shall pass away, but to those things which are before, not distractedly, but intently, I follow on for the prize of my heavenly calling, where I may hear the voice of Your praise, and contemplate Your delights, neither coming nor passing away. But now are my years spent in mourning. And You, O Lord, art my comfort, my Father everlasting. But I have been divided amid times, the order of which I know not; and my thoughts, even the inmost bowels of my soul, are mangled with tumultuous varieties, until I flow together unto You, purged and molten in the fire of Your love.⁶⁹

Perhaps this is why Pope Francis insists that time is greater than space.⁷⁰ Indeed it is, but only if we can glimpse enough of a tran-

68. Jonas, *The Imperative of Responsibility*, 7.

69. Augustine, *Confessions* XI.29.

70. Francis, *Lumen fidei*, 57; *Evangelii gaudium*, 222.

scendent horizon to somehow restore time to its rightful place, embraced and permeated by an ever-present eternity. □

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