Author	Michel Serres
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1. WAR, PEACE

Goya

Serres considers Goya, *The Duel with Cudgels* (1819-1823), in which the fighters strike each other violently, all the while (it seems) sinking into the mud which threatens to bring an end to their battle.

Who would we bet on to win, in the light of this primordial environmental threat? Does the human stake even matter here? Are we "forgetting the world of things themselves, the sand, the water, the mud, the reeds of the marsh?" (2).



Achilles

In Book 21 of *The Iliad*, Achilles slaughters so many Trojans in the river that it cannot run a clear course to the sea any more for the bodies glutting its banks. Xanthus, the river-god, causes the water to attack Achilles, as if the water were itself taking revenge. Achilles, fighting on, finds himself sunk in the water that he is displacing by his own violence.

Achilles is evidently the victor. But what do we make of this supposed victory: "is his triumph so total that his repugnant victory is transformed into defeat?" (2). The physical river seems, in the end, to win.

Thus, once again the human to human conflict recedes: "in place of his rivals the world and the gods burst in to view" (2).

Violence

The culture that imagines and stages spectacles of human violence always has to do so away from its natural context, away from the objective world in which that violence takes place: "the adversaries most often fight to the death in an abstract space, where they struggle alone, without marsh or river" (3).

But perhaps the world is re-entering as unavoidable context to this violence:

Quicksand is swallowing the dualists; the river is threatening the fighter; earth, waters and climate, the mute world, the voiceless things once placed as décor surrounding the usual spectacles, all those things that never interested anyone, from now on thrust themselves brutally and without warning into our schemes and manoeuvres. They burst in on our culture, which had never formed anything but a local, vague, and cosmetic idea of them: nature. (3)

In fact, the world is re-entering so aggressively that what previously provided only a local context for some action of human violence is now the inescapable global context of every human action.

Anthropogenic climate change

At the time of writing, discussion abounded as to the anthropogenic origin of climate change.

How might we account for unique climate events? Are they (A) unexpected (micro) events within a regular pattern of climate activity (macro)? Or is there (B) something new prompted by human behaviour, whose causes can be evaluated but whose consequences cannot? (4)

The point Serres makes is that to answer this will require a huge historical sweep, by which we can evaluate where change might have come from and what it signifies.

To begin to answer the question of anthropogenic climate change, then, would require a form of knowledge beyond that which we can provide, since our knowledge comes from models based in time and on time: "we surely don't know; what is more, all our knowledge, with its hard-to-interpret models, contributes to this uncertainty" (5).

Pascal's wager

Inaction might be catastrophic. Surely, then, it makes sense to assume that something new has been prompted by human behaviour, and to proceed accordingly.

But does this simple decision-making logic operate in the same way when the subject is multiple (humanity) and the object is gigantic (Earth)? What structure of decision can be authorised to act on this problem?

The "contract" of human violence

Human to human combat has had a sort of structure and form. The fighters share a kind of "language" of the fight, and thus enter into "a **preliminary contract**, spoken or unspoken, stipulating the use of a common code" (8).

Indeed, it may be that this first type of "contract" has been the engine of all human history, as through war we have calculated the advance of nations

But what about a situation in which a third element comes into play, disrupting this calculation? A good recent example would be the threat of mutual destruction implied by the nuclear escalation (7). Here, the idea of a simple winner and a simple loser did not make sense; the fight is fundamentally altered by the advent of a third element.

Serres now imagines this third element as a massive "noise" that threatens to overtake the "language" in which humans were previously able to conduct their quarrels (8). If the old fight is to carry on, the duelists will (paradoxically) need to co-operate in banishing the threat that comes from this third element. They will need to unite in "war" against the enemy that threatens their own contract: "to exist, war must make war on that war" (9).

Chess board

This new struggle, characterised by the entrance of this third actor, can be compared to a chess-match in which the forward-and-back moves of the two human players are joined by forces that are intruding from the side (9):

The new square, which shows the two rivals on opposite corners, restores the presence of invisible, fearsome players in the other two corners. (12)

"Objective" war

This new form of war, the disruption of the contract of human violence by the entry of the third element, is what Serres calls "objective war" (10).

One of these functions according to a contract, the other does not:

- 1. Subjective war: war between subjects fought with the aim of victory/ dominance, and yet within a contract that provides its form, a "legal alliance" (11). This contract has been part of the hominization of all human societies (14).
- 2. Objective violence: violence in which all subjects, unconsciously joined together, are set in opposition to the earth, a struggle where the terms of the contract are less clear: "objective violence comes to blows without any preliminary contract" (11).

The stakes are so high because this second, objective form of war does not yet take the form of "the world of contracts, the law" (12).

The need for a new contract

"Subjective" war has in some way been the (Girardian) engine of history: "it is as if in order to survive we had to pass through the filter of this war contract, which gave birth to our history by saving us from pure and thus truly deadly violence" (13).

With the advent of "objective" war we are indeed entering a dangerous new moment, one whose future is uncertain.

And so, just like our early ancestors, who had to devise and enact the first contract with each other, we now stand in the same position, required to make a new contract between ourselves and the earth, a "natural contract" (15).

The natural contract and the social contract

What is distinctive about Serres' understanding of the environmental crisis is the way it recognises the change in human relations that must come about:

- As described, "subjective" war was what enabled history/ hominization, and thus all human society, to flourish (the social contract).
- Thus, the new, natural contract will not just relate to the Earth itself, but also to human relations; the moment presents "the necessity to revise and even re-sign the primitive social contract" (15).

Thus, "the two fundamental contracts intersect" (15).

The weight of humans

Humans have become a force on a planetary scale. From "being in the world", we have been transformed into "a being as powerful as the world" (20).

Serres illustrates this with a comparison between:

- The simple, pin-prick locality of the peasants as displayed in Millet's Angelus painting (17).
- The world viewed from space, with the conglomerations of lights indicating the brutal mass of humanity clustered together in particular spaces; it is as if we have taken on the mass of "tectonic plates" (18) or even (in a kind of grotesque image) "human plates" (20).

The modern human being therefore shifts from the role of peasant to the role of overseers: "thus the prince, formerly a shepherd of beasts, will have to turn to the physical sciences and become a helmsman or cybernetician" (18).

Science

Scientific knowledge also has the form of a contract. Serres calls this an "epistemodicy" (21).

Contrary to the solitary Cartesian *ego*, knowledge is produced by a "growing body of researchers checking on one another and a carved out specialty, defined and accepted by them" (21). Here, then, is a form of contract just like the one discussed above. In the same way, "subjective" war might break out (debate, controversy, etc), but this will be war within the bounds of the legal control supplied by the contract. The objects science investigates are brought into this "subjective" contract:

The legal contract that brings together scientists involves things, it discovers them, analyses them, and constitutes them as scientific objects. Once again, a worldly world regulated by contract enters into relation with the worldwide world regulated by laws of a different kind. (22)

It is because science is based on this arrangement that it will struggle to handle the new form of "natural contract" required at the present time.

Beauty

Serres suggests that moments of genuine natural beauty provide a glimpse of the world as it is, "the worldly world" (24), as if breaking through the laws that we have artificially imposed upon it.

The proliferation of garbage and pollution is a sign that these moments of intrusion are weakening. The more this stacks up, the more deeply we find ourselves enmeshed in this human contract.

So what might the programme be for the future? "Beauty demands peace; peace depends on a new contract" (24).

Peace

This section ends with the hope that this peace might once again be available on the horizon. It is made available by the demand of the world to enter into a natural contract with us:

But now that the world itself is entering into a natural contract with the assembled peoples, however conflictual their assembly may be, it gives the reason for peace, as well as the sought after transcendence. (25)

2. NATURAL CONTRACT

Temps

As indicated by the French word temps, there is a relevant connection between weather and time.

- Contrary to the ancient vocations (peasant or sailor), we now live indoors. Time passes for us in an artificial way: "the climate never influences our work anymore" (28). Objects have become for us "fetishes or commodities, the stakes of our stratagems" (29). And our mindset has become "short-term" (29), dominated by political or business rhythms.
- But the changing climactic pattern outside our windows is requiring us to experience the world in a more original way. This requires a new experience of time. We must think about the long term, "to think in accordance with its rhythms and its scope" (29).

Cartesian mastery and possession

Since the Cartesian revolution, we have placed ourselves in the centre of the world:

- *Pollution*: a form of territorial marking of what is "ours" (33).
- *Parasite*: which "accords itself rights, with it exercises by harming its host, sometimes without any advantage to itself [...] the parasite is always abusive" (36).

This very mastery will work against us, for we depend on the natural world in a way that it does not depend on us: "the former parasites have to become symbionts; the excesses they committed against their hosts put the parasites in mortal danger, for dead hosts can no longer feed or house them" (34).

Therefore, "we must change direction and abandon the heading imposed by Descartes' philosophy" (34).

Social contract and natural law

Having the form of "law", both of these are attempts to accord and enshrine "rights" (35) to all entities in the world. For law is meant to ensure "a double, two-way arrow that seeks to bring flows into balance through exchange or contract; at least in principle, it denounces one-sided contracts, gifts without counter-gifts, and ultimately all abuses" (37).

However, these have ended up producing "abuse" (36) of natural entities:

- The social contract is intended to attach, obligate, ally men together; all words that (in French) relate to "lien" (45), in the sense of a bond making something stable, or, as we might say, more solid. But this was as the cost of relegating the world to the mute and inert background to this contract: this contract "closed in upon itself, leaving the world on the side-lines, an enormous collection of things reduced to the status of passive objects to be appropriated" (36).
- Natural law, likewise, "presupposes the unformulated proposition that only man, individually or in groups, can become a legal subject" (37).

The natural contract

By contrast, we need a new natural contract:

From now on I mean by natural contract above all the precisely metaphysical recognition, by each collectivity, that it lives and works in the same global world as all the others; not only every political collectivity joined by a social contract, but also every other kind of collectivity – military, commercial, religious, industrial, and so on – joined by a legal contract, and also the collectivity of experts joined by the scientific contract' (46).

This new natural contract supersedes the former social contract (and natural law) insofar as it extends the social contract to include the real world: "it makes the social contract enter the world [...] and makes the scientific contract enter history" (46).

Critique of the natural contract

Features of this natural contract that could be subjected to critical appraisal include:

- *Self-interest*: this new contract is born out of functional necessity; this is because, as parasites, we are calling the host we depend on, "not realising that in the long run he's condemning himself to death too" (38). Hence, Serres calls it "an armistice contract" (38). Is this still too anthropocentric?
- Attention: contrary to self-interest, Serres envisages the necessary attitude as being one of "reciprocity in which our relationship to things would set aside mastery and possession in favour of admiring attention, reciprocity, contemplation and respect" (38). How do these two combine in Serres' conception?

Politics and the sea

The whole operation will have to function, one way or another, via politics.

Life on board a ship provides a parallel case to the politics that will be required here on earth:

• On a ship, there is no withdrawing to a private space (like Achilles withdrawing to his tent in the midst of the siege): all must work together all the time in the public space so as to work with nature to keep

the ship afloat. This requires a degree of "politeness", where "polite means politic or political" (40).

• Sailors are aware of the "proximity and connection between subjective wars and objective violence, because they know that, if they come to fight among themselves, they will condemn their craft to shipwreck before they can defeat their internal adversary" (40). In other words, sailors know that the social contract they agree between themselves must incorporate and be respectful to their natural environment too.

Thus "the seagoing pact is in fact equivalent to what I'm calling the natural contract. Why? Because here the collectivity, if sundered, immediately exposes itself to the destruction of its fragile niche, with no possible recourse or retreat" (40).

There are a number of analogies with the story of Jonah in this passage. Serres' conclusion is that the anger of sea requires us to keep the peace. How does this fit with the divine/ providential initiative of the OT story?

Doing politics, then, is parallel to life on board the ship, in which a natural contract, not just a social contract, must reign supreme: "the seagoing pact is in fact equivalent to what I'm calling a natural contract" (40).

Cybernetics

The helmsman of a ship, when steering the vessel, angles his rudder to impose its will on the sea, but also receives back from the sea a reciprocal balance of force, causing him to change or modify (albeit subconsciously) his course, the whole thing operating as "a series of circular interactions" (42) between human and sea.

This is a primitive description of cybernetics, the trans-disciplinary approach to the study of systems in which a closed signalling loop is involved (that is, where action by the system generates some change in its environment and that change is reflected in that system via feedback that triggers a system change, a circular causal relationship).

But the cybernetics that pertains to man's relationship with the Earth is a vicious exchange, a negative feedback loop: "we receive gifts from the world and we inflict upon it damage that it returns to us in the form of new givens" (43).

Religion

Serres lauds the religious practices of:

- Liturgical decoration, where priests "were giving to the thing itself, marble or bronze, the power of speech, by conferring on it the appearance of a human body endowed with a voice" (47).
- Liturgical patterning, where priests chant the offices continually, which are actually "sustaining time" itself through their repetition (47).

Like the ancients priests of "Egypt, Greece or Palestine" (48), Serres envisages these liturgical acts as "sewing" (48) time itself, as it resets the historical trajectory that our social contract has displaced.

By doing this, religious "celebrates its pact with the world" (47). It shows itself to be a means of reminding us of our interconnectedness with the natural world: "the term *religion* expresses exactly this trajectory, this review of prolonging whose opposite is called negligence, the negligence that incessantly loses the memory of these strange actions and words" (47).

Thus, Serres provides a definition of religion according to its "learned" (47), supposed etymology:

- 1. Religare, Latin "to attach": religion is that which attaches us to this world.
- 2. *Religare*, Latin "to assemble, gather, lift up, traverse or re-read": religion is that which brings us together by means of this attachment to the world (47).

But Serres suggests, instead, that it might be easier to define what religion is not, or the opposite to religion, which he describes as 'negligence':

3. *Religare,* in this sense indicating something like "attention": "the sublime word our language opposes to the religious, in order to deny it, is *negligence*. Whoever has no religion should not be called an atheist or unbeliever, but negligent" (48).

Negligence is the mind-set of "modernity", since it refuses "to think or act towards the global, whether temporal or spatial" (48). Because of our "exclusively social contracts, we have abandoned the bond that connects us to the world, the one that binds the time passing and flowing to the weather outside" (48).

But the "sewing together" (48) that religious offers is vital today, to regain the sense of history (*temps*) mentioned above, but also since we are now directly threatened by the weather (*temps*) (48).

So Serres' appeal is "to practice a diligent religion of the world" (48).

Love

The natural contract will have to avail itself of the command to love, Christ's first commandment. For "without love, there are no ties or alliances" (49).

But this first commandment has not been extended widely enough before: "this first law remains silent about mountains and lakes, for it speaks to men about men as if there were no world" (49).

3. SCIENCE, LAW

In this chapter, Serres charts the "inevitable, fundamental, inescapably ritualized encounter between knowledge and law" (63).

The origin of the contract

The world begins with chaos, and then an attempt by human beings to impose order on it by means of a contract:

- The Nile floods were followed by the work of officials called *harpedonaptai*, who measured and distributed the diluvial plains that resulted (51).
- The Genesis stories report the giving of form to chaos by a divine law-giver, who then initiated covenants with his people (51).

Thus, "deciding on markers of borders indeed appears to be a moment of origin" (51-52).

Before any other human activity (science, politics, etc), there is an original act or decision of law: "before the scientific consensus on the precision of the cut or the need for proof, a legal contract imposes itself and first brings everyone concerned to an accord" (52). This originary act gives a structure and framework for whatever domain of knowledge attempts to build on it: so whether we are talking about law, science or politics, we can say that "a common origin, abstract and sacred, joins them" (53). So "what is science, knowledge, and even thought? The set of confrontations between all the other foundations of truth and this fundamental act of arbitrating" (76).

There is a religious quality to this originary act, just as that which "in a temple separates the sacred from the profane" (53).

This originary act preceded the social contract by which we used to live. And it will need to precede the natural contract too, for our relations with the Earth will have to be determined by some equivalent contract:

This contract may be a mythic or abstract notion or event, but it is fundamental and indispensable to understanding how the obligations that bind us to one another were

born, assuming that we don't want to see them as born of original sin or of our very nature. The cord of the contract came before the cord of obligations. (53-54)

The beginning of the will to knowledge

Serres offers a meditation on the Genesis fall account: the actors embody the "sensory" (*libido sentiendi*), the will to know (*libido sciendi*) and the desire for power (*libido dominandi*).

The choice to consume the apple is a choice to move beyond sensory satisfaction to new knowledge, from *libido* sentiendi to *libido* sciendi.

This brings man dangerously close to the third effect, the *libido dominandi*, with all its violent implications in history (58).

But Serres fundamentally views this as positive, the engine of all subsequent history: "science produces the wandering of history, the drift of time [...] universal history" (59). Even though it is a transgression, Adam's choice sets in place the deviations from a norm that are the fruit of all history: "what is knowledge, what is science? The set of deviations from law and its stable equilibrium, the oblique worries that lead to every evolution. I think, I weigh, I distance myself from law, which I have no right to do" (59).

Adam invents history and throws himself into it alongside Eve by staking paradise against knowledge, by contesting the first divinely spoken law. Her heralds, I would say, the encounters between prophets and kings, the perpetual trial, the motor of historical process. The trial of Jesus reprises and renews this tradition. (61)

Serres envisages this as being the story of Christianity, "in which knowledge asserts the right to contest law. It has so contested it that it has killed it. The death of God amounts to that of the legislator" (59).

Four Empires

Serres broadens this point to the four great world empires:

- Egypt and Rome are "beings of law" (60), sustained by *Maat* and law codes; they "did not produce much knowledge, and what they had they did not develop, and thus they remain in obscurity" (60).
- By contrast, Athens and Jerusalem are "beings of knowledge" (60); being smaller city-states, "they are torn, chaotic, more often beside themselves than calm inside their walls" (60). Although law (especially religious law) still figures, "they spend their history contesting the right of law" (60). This challenge to law is a crucial ingredient of Judaic (Christian religion) and Greek philosophy.

Thus, "because they forsake asking this question, neither Rome nor Egypt really produces a body of knowledge; conversely, by asking it, Athens and Jerusalem forsake the kingdoms of the earth. Science prevails over law" (61).

Trials

Alongside this "external" contract (the origin narrative described above), knowledge also must proceed by a series of "internal" (62) contracts.

For knowledge must still proceed by "trials" (61). Groups of scientists, for example, must sit in "tribunal" in such a way as they allow a scientific discovery (for example, that of Galileo) to enter into "officially sanctioned time" (62). These are new moments of decision or demarcation, akin to the origin narrative traced above, endlessly repeated within the internal timeline of a particular discipline.

Thus, "there is no science without trials; no truth without judgments, whether internal or external to knowledge. Its history can't do without tribunals" (62). This is why Serres refers to the "inevitable, fundamental, inescapably ritualized encounter between knowledge and law" (63).

In this, science is no different from any other discipline, which likewise must proceed by trial: "the history of science resembles, like a twin sister, the history of religions, and our cycle is complete. The old religion-religion

conflicts, with their courtrooms for heretics, their burning of sorcerers later extolled as saints, these conflicts are renewed in interminable science-science conflicts, settled by the permanent internal tribunals that regulate scientific life" (79).

Trials as the motor of history

In fact, history itself is driven forward by successive trials.

- This is not time-in-itself, the linear dynamic of a clock: "not time that passes and slips by, as if left to itself" (76).
- Rather, this is "history" (76), which is the movement of time along a trajectory set by these trials: "since the pronouncement that concludes a lawsuit makes a choice among various paths, it closes up possibilities in order to open a single one, like a semi-conductor, a lock or a ticket window" (76). A series of these trials "produces the group or succession of bifurcations along which history flows, along which time passes so as to be thereby canonized" (76).
- And yet, for Serres, this "history" must not be conceived as entirely negative, for it is also the engine within which knowledge grows in a kind of historical dialectic: "at first laws prevail over the sciences, trial after trial; then science prevails over laws, since each is reconsidered in the light of reason; but law prevails, since the internal logic of history, even of the sciences, remains that of the laws; but then science prevails ..." (80). This is a "meta-polemic" that cannot be decisively ruled upon one way or the other; it "constitutes the time of our history" (80).

Thus, especially under the aegis of the sciences, Serres talks optimistically about a flow of history that is progressively breaking free from the restrictions imposed by the exclusively human-derived originary contract, in order to open out again to the world:

Yes, science is prevailing over law; and that means that the laws of the world are of things are prevailing over the laws of the world of men. In the end, that will mean that people will look down on the world of mean. (81)

Secularism

Serres advocates "the secular" (78) as a mode in which different trajectories can be distinguished, so as not to come into conflict: "this multiplicity of fields (religions, politics, moralities, sciences, and so on) defines pretty well what we call secularism, a global and pluralist concept quite close to this distributive justice" (78). The secular is here conceived as a neutral domain that "reverses" the tendency for religion to police politics, for science to police ethics, and so on: "justice and secularism reverse this tendency and struggle against it by assigning specific places and prerogatives" (79).

If any one of these seeks to intrude on the other, it risks hegemony again: "it sometimes happens that that which contributes to liberation turns around and becomes a power to enslave us" (79).

Studies of the originary contract

Serres provides a series of episodic studies of those who have navigated or critiqued an encounter with law (the contract), given that "the history of our knowledge follows the temporary trajectory set in motion by this trial" (61).

Zeno of Elea

The advance of knowledge therefore mimics the originary moment of decision that characterises the legal contract.

Zeno's biting attack on Nearchus the tyrant symbolises this:

• As the attack of philosophy on law: "does knowledge really parasitize the law, with which it chooses to maintain a relationship? But of course: it imitates it, it mimics it, theorizes its form, refines it, and final fights it to the death' (65).

• But according to another version of the myth, Zeno bit off his own tongue in the course of this confrontation with the tyrant, thus perhaps symbolizing the defeat of philosophy by law (66).

The point is that you can't tell: "guess who parasitizes whom; figure out from there who comes out ahead" (66). There is an endless historical cycle where the contract is renewed by violence and trial.

Anaxagoras

Serres' builds on the legend of his self-isolation from the affairs of the *polis* in search of knowledge of the natural world, especially his ideas about the movement of celestial bodies like the sun and moon (66).

This was considered suspicious and even unacceptable by his contemporaries, as if this philosopher, in his concern to understand the natural world, dared to deem himself extractable from the terms of a social contract (and from the possibility of denunciation that this provided). The idea of emergent or innovative enquiry was inimical to the system underlying this contract, which cannot allow one single part to cease to function.

By contrast with this ancient "policing" of the universal (68), the modern world necessarily has to allow some gaps, some give, some slack. This is the only way in which knowledge can genuinely emerge:

Imagine a perfect system; it turns out to be the most fragile system possible, and it must maintain its universal law, the same throughout. Conversely, for it to adapt to changes, it must be conceived and built with play, in the same way that cogs have play, or give.

Any evolution can only be born of fragility. (70)

Thus, "Anaxagorus found himself condemned to exile and banished from the city for having said that the sun was nothing but a rock that could fall; but he had already been living outside politics" (73). He represents the idea that, if nature is to be reckoned with, the terms of the social contract have to change; this is deemed a threat by the universal society: "what is nature? The city's or culture's hell. The place where the banished king was cast out, the city's outskirts, suburbs" (73).

Anaxagorus' case shows how the social contract presupposes a "judicial decision" (74), one that separates nature from culture. This decision is not "a customary or routine decision drawn from jurisprudence", but an extraordinary judgment handed down by a fundamental tribunal in the course of an original or transcendent trial: a First Judgment, as in Last Judgment" (74). This provides a critique of Schmitt's ideas of political theology and decisionism.

Religion and heresy

History as that which requires adherence to this social contract is exemplified in the world of religion also. When an individual potentially violates the "rites" of a collective, they are at risk of being declared a heretic and cast out: "whence the religion-religion conflict that only a trial can decide: Jesus before the chief priests and elders; Councils versus Reformers – Luther, Calvin, or Michael Servetus" (77).