

Global Fluidities, Local Presences: An Architectural Perspective on the Global-Local Problem in the Works of Michel Serres

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SERRES FOR THE NON-FRANCOPHILE

"If all things turned to smoke, the nostrils would sort them out."—Heraclitus¹

Michel Serres, one of France's leading intellectuals, is difficult to categorize. His ecstatic works cut a wide swath between literature, science, philosophy, and mathematics. The global and the local intermingle in many of his writings. As architects, we are particularly sensitive to the global-local problem.

Influenced by Gaston Bachelard, Serres' writing contains much for architects to consider. He inquires into the body and the senses, addresses the contact between the social sciences and the natural sciences, and explores the epistemological limits of sustainability. Many of Serres' works address our modern penchant for messages and their passage through networks of transference—reality is understood as the continuous concourse of messages inlaid between objects, people, and locales. Metaphoric messengers like Hermes and angels play a large role in his writings.

For a non-Francophone to discuss Michel Serres might be taken as a dubious enterprise since my main access to his work is English translations and commentaries by scholars writing in English. However, his translated books and articles convey a vividness of thought that I have found fully inspiring.

For Serres, each book is an elaboration on every other of his books. The originality of each new arrangement inspires my wonder at Serres—I appreciate each twist of his textual kaleidoscope. Serres' arc of thought is extensive, intricate, and interwoven.

His philosophical approach syncs with his rhizomatic writing; his works compose a dynamic world.

THE GLOBAL-LOCAL PROBLEM

For Serres, the global-local problem, as I call it, is not dialectical or a matter of resistant opposition. Instead, the global-local problem is a complex continuum with kaleidoscopic possibilities. The global is an immanent presence surrounding each locale—and each locale conjugates incessantly with the global. The global-local problem is ever-present in human history. But today, every polis embraces a constantly expanding universe of information. While we actualize global omniscience through mobile technologies, we must also recognize that we cannot detach ourselves from the local.

Serres calls himself a geographer.² Each subject he considers can be folded into geography—art, science, literature, technology, and pollution. The more we understand Serres' geographic predilections, the more we realize how each locale infuses the global. The local has always interpenetrated the global—first geologically (earth as terrain and climate), then geographically (earth as map), and at present geospatially (earth as positional information networks).

Should the architect look to the global or the local for guidance and inspiration? If to both, then in what measure for each? If we must measure between the two, then how do we measure between? Perhaps we should disregard them individually, and instead consider their coexistence. What operates in the interstices between existences? And ultimately, how do we understand the between?

BEING AND RELATING: FOUNDATION AND CIRCULATION

The value of Serres' work is to put things in relation. His writings stitch together persistent pairings like science and literature, local and global, hard (matter) and soft (thought), stasis and flow. As Serres puts it, "Being or relating, that is the whole question."³ For architects, the art of building is producing stabilities that relate. We make places for occasions in a manner similar to how riverbanks condition the river's flow—and reciprocally, how the river's particular flow contributes to the transformation of its banks.⁴ Architecture comprises both foundation and circulation. A work of architecture must bridge between stability and the affordance of flows, between being and relating.

A BODY IN PLACE

The local is real and appeals to the sensate body; the global is abstract and appeals to the mind. Place, body, senses, perception, mind and information intersect co-creatively, bringing global and local into relational focus. Space is where subjects come together relationally. Space is the reverse of body. Today, the local has returned to being the body. Physics tells us that space and time are comingled. Space and time are brought together sensuously by the body. As the seat of the self, the body is our only true local. Blaise Pascal asked the question: Where is the body positioned? Too small to sense the infinite, too large and imperceptive to grasp the atomic. Humanity is caught somewhere in the middle—within the continuum and insensible about extremes.⁵

We are foragers set in a world where goods and information flow around us like weather. Today we tend to know more about our global context and less about the intricacies of our own back yard. Humans are niche-less creatures—nomads free to imagine, think, and act globally. Our habitat extends well beyond the ecosphere.

Serres states, "There are no territories without boundaries; without borders there is no 'there.'"⁶ But borders are unclear, tentative, and changing—fractal in their lack of precise scale or measure. Every border is a hazy reality. No edge is truly stable; therefore no center is complete in itself. Truly, an edge is indefinite and shares in the infinite. Place is a weak force; the local can never be distinguished fully from

the globe we prowl upon.⁷ All things pass into one other and immix like the waters of the world.⁸

ENVELOPE, FOREST, AND TREE⁹

An expanding set of territories, ranging from the specific to the general, is how we write an address on an envelope. A letter suggests the metaphysics of space; address and envelope are indexes of a consecutive passage through space from origination to destination. The global is no place specific. Rather, it is a system of enveloped spaces that relate differently every moment of a letter's transit.

When people, goods, and information travel, we enact the global. The global is the space of flows between localities. As Serres wrote, "A space is here constructed or constituted where the local is inserted within the global, at each link of the chain."¹⁰ The local is lodged in the global—yet the global would disappear without its myriad localities. So a tree can exist without the forest, but the forest dissolves without its aggregate trees. The forest's diversity is essential to its particular identity. A forest is composed of many trees, not one enormous tree.

Every local is a microcosm of relations. The earth is not a dry clod but a transfiguring life—an angel (or chorus of angels), rich, fresh, and ever-changing in the light of the sun.¹¹ Any locale relates to the global through weather, geology, ecology, trade, and information. Pascal addressed this relational paradox when he stated, "Nature is an infinite sphere whose center is everywhere and the circumference nowhere."¹² Although the local is manifold, the global is a shifting total.

GLOBAL PLURALITY AND LOCAL EMPIRE

Plurality is diversity in conversation—many places meeting in mutual greeting, recognizing the importance of particulars, and accepting the extreme diversity of humanity. Empire, the expansion of the singular, disturbs Serres. It is clear through his writings that he prefers distinctions mixing together and conjuring newly immixed multiplicities.

Metastasis is a horrible sameness unleashed upon diversity, reproducing itself outward in an extensive annexation of the singular. Where empire is ostensibly absolute, plurality allows for both con-

centration and difference, including indefiniteness as the state through which all concentrations pass. There must be plurality—an open and indeterminate multiplicity where local truths operate without contradiction during global encounters. Is our world an ever enlarging set of global villages or a single village gone global?

DISTRIBUTED BEINGS

Today, the comprehensibility of the global has crowded out our experience of the local. Ecological and economic systems feed the local. The global is an extensive system of affects—a flux of forces operating at a distance with the potential to invigorate or eradicate the local.

The eye sees locally. The mind's eye sees globally. Today we see with our minds more than with our eyes; intelligence overrides sense. We stay nowhere, we move everywhere—we flow, process, transact, fly, displace, and replace restlessly. We exchange through global marketplaces all day in one continuous rotating dawn. Currencies must flow; accumulation is no more than an eddy in constant coursings and diffusions. As Heraclitus stated, "What was scattered gathers. What was gathered blows apart."¹³

Once we stored history in our minds and orated our communal memory through story; then we wrote history down. Now history is accumulated electronically everywhere with access anytime. No need to remember; just google it using your smartphone. History, which once guided our lives is now merely mastery of the trivial. The utopianism of Google and cloud computing have externalized our ability to recall memories. The humanization of environments is an ongoing externalization of our capabilities via technology. We spread out our bodies functions by externalizing our capacities into machines.

More and more we are networked beings caught in the flow of absent presences; globally knowing, locally ignorant. The iPhone tricks us into believing that we cannot understand the local without constant connection to the global. Our user agreement neglects to tell us that time we spend in wireless rapture exiles us from the sense-rich place we inhabit. Our omniscient companion, the smartphone, has extended and transformed our lives beyond the limits of space through information. Can data rival lived experience?

Serres acknowledged that our technologies, "have liberated address from physical place."¹⁴ It appears that the solution to both being and relating is omniscience. Serres explained in 1995 that, "Twenty-five years ago, the TV was in your apartment. Now the apartment is in your TV . . . reality is not the sky, it is the screen."¹⁵ And 16 years later, your apartment, TV, and computer fit in your unfettered hand. Today, each of us wants access to the mobile cosmopolis in our pocket.

THE TOPOLOGY OF SYSTEMS

As simultaneously global and local beings, we live between incomplete extremes. Our lives are filled with technological intermediaries operating between us and climate, others, and information. As Serres states, "My body lives in as many spaces as the society, the group, or the collectivity has formed . . ."¹⁶ We inhabit a multiplicity of spaces inside the social knot of culture.

'Between' is fundamental to topology. To 'interdict' is to bridge between.¹⁷ The characteristics of the bridge are essential to the global-local problem. Like the bridge, Architecture substantiates relationships; it has always been about flows and scalar transformations. Architecture is about being a conduit for experiencing the concourse between global and local, abstract and real, soft and hard. Topology is about surfaces producing continuities when the world interacts—which it does continuously and at various scales. Topology came to be because of the bridge; it is a mathematical discipline concerned with sets of relations.¹⁸ Networks are topological connections.

Networks are distributive and co-creative. What we understand as being global is the totality of transmitted media that enfolds us. What we call the local are our most immediate ties—the brails of feeling that hold us to a center. Every center constitutes a complex overlap of peripheries. 'Complex' comes from the root-word 'to fold,' and the overlapping plies of a fold that form a knot.¹⁹ To 'comply' is to fold, to agree, and to relate equivocally. Reality is a system of pliable fields—not distinct objects. So it is possible to see how the local relates contingently to the global and vice versa. Resistors, capacitors, and various bridge-types comprise a field and manage the pliancy of the field. The field affords flow.

ABSTRACT SPACE AND THE DYNAMICS OF FLOWS

The map is not the territory; it would be calamitous if the map usurped its territory.²⁰ The map remains abstract, bound to its scale, and limited because it represents space. It retains its distance from the dynamics of the true territory. Abstraction is less about representation and more about scalar ruptures. As scale changes, we gain a different set of considerations. Beyond a certain scale, physics shifts gears and a new set of dynamic properties arises. Different answers appear at different scales. Any unified theory will likely be a theory of phase distinctions based upon the scale of the physics being practiced.

Infrastructure connects the global to the local. The city is no longer a static monument representative of an ideal order. Instead, the city today is a relational operation; it establishes linkages between humans, societies, and nature. The city is infrastructure that foment into a complex network. The city is a system of knotted relays, a dynamic of distribution, a transformer connecting an extensive network of intertwined centers.

The city is a formation of flows. The city is not solitary, bounded, or a place of accumulation. Instead, it spreads and intersects with other cities in ways that make its material presence a minor expression of its true global reach. The true nature of things is a constant and infinitesimal discourse along an articulate chain, like a ladder, relating the locally straight to the globally incurvate.²¹ Forces from around the globe spread throughout each city and every building. Forms result from flows.

ENERGY AND INFORMATION²²

All organisms exchange energy and information. We are organisms that interact incessantly and effusively with other species and their niches. Humans partake in biological interactions, social interactions, linguistic interpretations, and technological exchanges. The term 'interface' describes the means of exchange between differing systems. Each human is a means of transforming hard into soft—experience into information; the digital machines with which we interface close the loop by going from soft to hard again.

All things are connected and blend; being is a momentary stability. Everything is immixing in a continuous relational topology. Boundaries blur and paradoxes emerge taut in their dichotomies as they blend together—antonymous and interdependent. The in-between is the true condition of things. All is flux and exchange, ecology and economy.

Topological space interconnects, relates, and folds—the summer squash on my countertop appears discrete, but was hours before stemmed in vital connection to the broader plant. The plant folds out its leaves, spreads its roots, and works inward to form meat and seeds from external energy flows. The squash is a topology itself, a flow of energies. Later, I will use my smart phone to search the Internet for a squash recipe. Space is bridged by both stem and signal—rooted and routed.

STOCHASTIC SYSTEMS: ACTION AT A DISTANCE

The stochastic is essential to the global-local problem. Each locale is different and each difference constitutes a new locale. Serres concludes that the mixture of local variations is essential to the dynamics of the global system. The relation is complicated and can be best understood thermodynamically. As Serres wrote, ". . . the center of the pot in which the soup will get mixed is on the rim of the pot, and the center of the world is on the edge of the circle. This is very important for an understanding of the theory of knowledge."²³ A new kind of order grows out of this indeterminacy. Hence the global and the local immix in unpredictable ways. Good architecture delights in the world's fluctuations.

You can split the wind since it possesses lamellar flow. Airplane wings and weather vanes do this all the time. But you cannot split a tornado, dust devil, or water spout. Anything placed into a vortex gets caught in its spin. These singularities of flow cannot be divided but must be engaged in, like a topology. Chuang Tzu is quoted as having said, "Those who divide things cannot see."²⁴ Simplicities can be separated but complexities can only be gazed at in wonder. Reality is indeterminate—a slow collapsing vortex.

Our human body is turbulence held temporarily in place. The complex set of organisms we call 'nature' colligates into a system, but not a system in equilibrium. Surrounding each organism, stochas-

tic forces seethe. Nature is a system under constant dynamic strain, a system of swings, shifts, and aleatory changes. The sum is not a totaling of any single thing. Instead, the sum is a complex fractal mixing of many things churning together in chaotic folds along a continuum of scales.

Balance is not an inherent part of systems. The systems are complex and entwined—human and natural, economic and ecologic. Homeostasis is the exception not the rule. No generalization can account singly for the complexities of stochastic systems. We must read the complexion of the world seen as a heteronomy of plies, layers, topological fields, and copulating networks—a confusion of climactic, social, technological, economic, ecological systems colliding at different rates of exchange.

Michel Serres contends that prepositions, as the relationalelements of language, are superior to substantive nouns. He says, "Prepositions are the algebra of fluxes."²⁵ Prepositions link and orient nouns in a sentence; they describe the shape of a connection and form a network of relations. A name is only a guest of reality. What precedes position or resides between positions? A building is a set of prepositional abstractions we live through. The architect is an artist of prepositions.

PEASANT AND SUPERMODEL

The strands connecting the local to the global are enacted through the context of architecture. Architecture is a quasi-object, a relational marker that shapes society—a knot of forces that produces dynamic interplay.²⁶ In reality, no object or building is ever settled; each is a slow fire experienced differently every moment of our lives.

Place was once internalized—and remains partly so since our bodies form a perceptive tie to each locale we live through. But today place is externalized through the global telecom and supply chain infrastructure we continue to construct and improve upon. The smartphone is a quasi-object, operating distinct from architecture in that it affords social interaction outside of space. Somnambulant beings, we no longer acknowledge touching the world through our senses. An architect should not only sense locally but must also perceive globally. Here *and* away is our condition. Architects must fall somewhere between a peasant (anchored to the

local) and a supermodel (distributed throughout the globe) and relate the global with the local.²⁷ We cannot wipe out the influence of the local or the impact of the global; they are topologically entwined.

GLOBAL NATURE AND LOCAL VITALITY

No matter how in control we think we are, humanity is held forever in the hands of nature. Because most of our technologies attempt to reach outward to affect the globe, we have in turn become responsible for the well-being of the Earth. This is a profound shift because every local act can have global consequences. If we know this, then we can no longer afford to separate the global from the local. If our activities affect the planet, then we are responsible for its fate. Earlier this year, Serres announced flatly that the "Neolithic age is over."²⁸ Humanity is in the process of transcending its previous environmental and social limits. What was once a question of 'can we?' now becomes a question of 'should we?'

As our presence upon the planet grows, we impact the ecological systems of the Earth. We threaten the fragile stability of our enclosure. We are, and will be in the future, more reliant on our ability to externalize our perceptions through technology and to expand the range of data we collect about the world around us. We have gone from locations to networks. We must change architecture into something where humanity is emplaced and omniscient all at once—the local and the global must be made syncretic.

We are now responsible for the fate of the environment we once feared and revered. Our actions, not as individuals but as a collective and globally distributed entity, must be weighed in each and every locale against its impact on the whole system.²⁹ No place is divisible from any other place. No longer is an individual divided from the rest of the planet. The rudder that changes the course of the ship also changes the ocean slightly.³⁰ All is reciprocal. The cybernetic relay between action and the reaction rebounds through the entire system, only to return to the actor. We must change our lives.³¹

KNOTS OF INFINITESIMAL CHANGE

The Code of Hammurabi addressed matters of the building arts. The code established contractual relations between ancient Babylonians.³² What we must consider today is an even broader code, wherein

each building an architect designs is in reality a contract with global effect. Any new building redirects the materials, energies, and social flows within the aqueous-terrestrial context of the planet. As Wallace Stevens wrote, "My house has changed a little in the sun."³³ So my house changes the world infinitesimally too. Architects today must contract more broadly than our predecessors; we must maximize our obligations to include the world in our actions.

Diogenes invented the word 'cosmopolitan' when he declared, "I am a citizen of the world."³⁴ Every architect must be of a particular place as well as a citizen of the world. Diogenes conflated the city with the world to debase the citizenry of Athens for their narrowness and arrogate his allegiance to something greater. The notion of cosmopolitanism is no longer audacious or treasonous; it an essential disposition through which we may better grasp the character of the local.

The global meets the local through an exchange, a knot.³⁵ Architecture is a grand artistic synthesis bridging between our body, our common spirit, and the environment. What is architecture if not a combination of natural and social fluidities, bound together in relational knots by the architect? Envelope, bridge, window, and door: all transactions. A knot is a transaction in the true sense, the loop that initiates every knot opens up a space to be entered or departed through. The space from which every knot begins is kin to architectural space. Space is not void or sameness. Rather, space is always active as flow and field. The knot is an index of the in-between; a knot multiplied becomes a network.

The knot draws the far near, and binds together differences. The ship tied to the capstan links the global to the local. Smartphones are mobile knots that allow us to link locales; they amplify the global inverse to the intense locality of the body. Today, all places, real and virtual, are tied together by knots and ports of sorts. As knots proliferate, the brails of desire link distances together, making the discontinuous continuous, closing off tears, and making a fluid topology of all places.

CLOSING DEPARTURES: YOUNG ALEXANDER, OLD DIOGENES

The architect, like Diogenes, must know when to tell Alexander the Great to "stand out of my sun."³⁶

Glamour and greatness from afar eclipses the clarity of the local. Alexander the Great was the first superstar whose global reputation preceded his person. Diogenes the cynic was among the first to vocally forsake glamour to get closer to the sensible.³⁷ An architect today must fall somewhere between Alexander and Diogenes.

It is said that after their encounter, Alexander walked away and jested respectfully, "If I wasn't Alexander, I would be Diogenes."³⁸ The global must admire the sensory immediacy of the local, and the local should discourse with global greatness. Somewhere between satisfied beggar and insatiate king is the optimal relation, between the superstar and the dog. Each architect must discover the right relation between the global and the local themselves.

Diogenes called it "my sun," underscoring his belonging to both his particular place and its celestial domain. He owns his worldly sensations; his sensate body is his, and his locale is his personal relation to the larger environment—ergo, Diogenes owns the sunlight he basks in. Alexander is a wandering conqueror, insatiate—Diogenes need only remain stationary. Alexander departs Diogenes changed. Alexander wishes he were satisfied and stationary like Diogenes.

This dialog is older than Alexander's brief empire. It has gone through many variations over the millennia, but now its pattern is perpetual, its periodicity now permanent—a constant buzzing. The architect today, in a double gambit of skill, must forsake intermediaries between our being and the world, only to also engage the greatest intermediary to date: the global web of relations reified in today's digital technologies. It is through both that we must operate as responsible makers of place—not through being, but by relating. Architecture is a complex and evolving discourse between the local and the global. Through architecture, the global wins the local; the local, by remaining, wins the global.

ENDNOTES

1 Heraclitus, fragment CXII, from Charles H. Kahn, *The Art and Thought of Heraclitus* (Cambridge: Cambridge University Press, 1987) 79.

2 Michel Serres commenting on his relationship with Gilles Deleuze in an interview with Hari Kunzru, "Michel Serres Interview (1995)," from an interview transcript, London, January 10, 1995. (www.harikunzru.com/michel-serres-interview-1995; accessed

7/16/2011).

3 Michel Serres, *The Parasite*, translated by Lawrence Schehr (Minneapolis: University of Minnesota Press, 2007) 224.

4 In many of his writings, Serres suggests that the river flows in a variable bed. He inverts Heraclitus by suggesting that we enter the same river but never return to the same bank. There is a dynamic between matter and action. Hence architecture is in dynamic relation to its material construction and the temporal activity (human and natural) that surrounds it. See, his "Lucretius: Science and Religion," from *Hermes: Literature, Science Philosophy* (Baltimore: John Hopkins University Press, 1982) 119.

5 Blaise Pascal, *Pensées* (London: Penguin Books, 1966) 90.

6 Michel Serres, "Anaximander: A Founding Name in History," *SubStance*, Vol. 22, No. 2/3, Issue 71/72 (Milwaukee: University of Wisconsin Press, 1993) 268.

7 I get this notion about place from Charles Olson's poem, "To Gerhardt, There, Among Europe's Things, Of Which He Has Written Us in His 'Brief An Creeley Und Olson.'" Specifically this section of the poem, "I offer you no proper names/ either from the great cities/ on the other side of civilization/ which have only to be visited/ to be got the hell out of, by bus/ or motorcycle, simply because place/ as a force is a lie./ or at most a small truth./ now that man has no oar to screw down into the earth, and say/ here i'll plant, does not know/ why he should cease/ staying on the prow!" from *Charles Olson: Selected Writings* (New York: New Directions, 1967) 190.

8 Michel Serres, "Anaximander: A Founding Name in History," *SubStance*, Vol. 22, No. 2/3, Issue 71/72 (Milwaukee: University of Wisconsin Press, 1993) 267.

9 Forest and trees were alluded to briefly in Michel Serres, *Genesis*, translated by Genevieve James and James Nielson (Ann Arbor: University of Michigan Press, 1995) 6.

10 Michel Serres, "Exact and Human," *SubStance*, Vol. 6, No. 21, Winter 1978-1979 (Milwaukee: University of Wisconsin Press, 1978) 10.

11 See William James' *A Pluralistic Universe*, "Lecture IV, Concerning Fechner," in *William James Writings 1902-1910* (New York: The Library of America, 1987) 704-705.

12 Blaise Pascal, *Pensées* (London: Penguin Books, 1966) 89. Nietzsche, who read Pascal and copied his aphoristic manner paraphrases Pascal, "In every Now, being begins; round every Here rolls the sphere There. The center is everywhere. Bent is the path of eternity." Friedrich Nietzsche, *Thus Spoke Zarathustra: Third Part*, from *The Portable Nietzsche*, translated by Walter Kaufmann (New York: The Viking Press, 1954) 329-330. For more on this declaration whose historical antecedents are essayed by Jorge Luis Borges, please see his brief text entitled, "Pascal's Sphere," from *Other Inquisitions*, translated by Ruth Simms (Austin: University of Texas Press, 1964) 6-9.

13 Heraclitus, *Fragments: the Collected Wisdom of Heraclitus*, translated by Brooks Haxton (New York: Viking, 2001) 27.

14 Michel Serres, "New Technologies," from *Mousaion: Journal for Library and Information Science*, XIX(1)2001 (Cape Town: University of South Africa, 2001) 29.

15 Michel Serres in an interview with Hari Kunzru, "Michel Serres Interview (1995)," from an interview transcript, London, January 10, 1995. (www.harikunzru.com/michel-serres-interview-1995; accessed 7/16/2011).

16 Michel Serres, "Language & Space: From Oedipus to Zola," from *Hermes: Literature, Science Philosophy* (Baltimore: John Hopkins University Press, 1982) 44-45. The whole quote is here, "My body lives in as many spaces as the society, the group, or the collectivity has formed: the Euclidian house, the street and its network, the open and closed garden, the church or the enclosed spaces of the sacred, the school and its spatial varieties containing fixed points, and the complex ensemble of flow-charts, those of language, of the factory, of the family, of the political party, and so forth. Consequently, my body is not plunged into one space but into the intersection or the junctions of this multiplicity."

17 Michel Serres, "Language & Space: From Oedipus to Zola," from *Hermes: Literature, Science Philosophy* (Baltimore: John Hopkins University Press, 1982) 45.

18 Michel Serres, "Language and Space: From Oedipus to Zola," *Hermes: Literature, Science Philosophy* (Baltimore: John Hopkins University Press, 1982) 43.

19 The word 'complex' is derived from the Latin, *plectere*: to braid, to ply, or to fold together.

20 This statement calls to my mind Jorge Luis Borges' "Parable of the Palace." In the parable, Borges states that, "The world cannot contain two things that are identical." The map cannot replace the territory; hence a representation never matches its referent. See, Borges, *Collected Fictions*, translated by Andrew Hurley (New York: Penguin Books, 1998) 317-318. Serres writes of the significance of maps in, "Anaximander: A Founding Name in History," *SubStance*, Vol. 22, No. 2/3, Issue 71/72 (Milwaukee: University of Wisconsin Press, 1993) 266-273.

21 This sentence makes me think of Jacobs Ladder from the Bible. Jacob dreamed of the intercourse of angels transiting between varying magnitudes—with messages being passed between each rung in an infinitesimal calculus of relation—stitching together all totalities into a liquid reality. Each rung of Jacob's ladder is a quantum of transcendence spanning between the total and the particular—between the local and the global. See Genesis 28:12-17, from *The Holy Bible*, Revised Standard Version (New York: William Collins Sons & Co., 1952) 24.

22 The natural and social exchanging of energy and information is central to Serres' essay "New Technologies," from *Mousaion: Journal for Library and Information Science*, XIX(1)2001 (Cape Town: University of South Africa, 2001) 25-34.

23 Michel Serres, "Michelet: The Soup," *Hermes: Literature, Science Philosophy* (Baltimore: John Hopkins University Press, 1982) 32.

24 Chuang Tzu, *The Inner Chapters*, translated by David Hinton (Washington, D.C.: Counterpoint, 1997) 27.

25 Michel Serres in an interview with Hari Kunzru, "Michel Serres Interview (1995)," from an interview transcript, London, January 10, 1995. (www.harikunzru.com/michel-serres-interview-1995; accessed 7/16/2011).

26 Serres introduces the quasi-object in many of his books. Notable is the chapter, "Theory of the Quasi-Object," in *The Parasite*, translated by Lawrence Schehr (Minneapolis: University of Minnesota Press, 2007) 224-234. See also *Genesis*, translated by Genevieve James and James Nielson (Ann Arbor: University of Michigan Press, 1995) 87-93.

27 The image of the supermodel amplifying the importance of a specific locale came to me through an advertisement for Louis Vuitton of Angelina Jolie in Cambodia. The photograph is part of Louis Vuitton's ongoing and multiyear "Core Values" campaign (www.louisvuittonjourneys.com).

28 From an interview with Michel Serres conducted by Georg Diez and Christopher Roth, "The Neolithic Age is over!," from *032c, Culture Magazine*, Issue #20, Winter 2010/2011 (<http://032c.com/2011/the-neolithic-age-is-over/>; accessed 7/16/2011).

29 See Michel Serres, "The Natural Contract," in *The Natural Contract* translated by Elizabeth MacArthur and William Paulson (Ann Arbor: University of Michigan Press, 1995) 27-50. There is a concise one-page article titled, "Nature Seen through Culture," in *Naturopa: Nature and Culture*, No. 102 (Strasbourg: Council of Europe, 2004) 6. See also parts of his book *Mafeasance: Appropriation through Pollution?*, translated by Anne-Marie Feenberg-Dibon (Stanford: Stanford University Press, 2011).

30 The quote from which this notion came is here, "[T]his old cybernetic metaphor for politics is becoming so weak as to almost fade away, since in the current reality the successive directions of the *gouvernail*, or rudder, change the state of the sea itself, and the volume of the vessel . . ." from Michel Serres (with Bruno Latour), *Conversations on Science, Culture, and Time*, translated by Roxanne Lapidus (Ann Arbor: University of Michigan Press, 1995) 178.

31 I was thinking throughout this section of Rilke, who in 1907, wrote about aesthetic experience, "and not break out from all its borders,/ burst like a star: for there is no place/ that does not see you. You must change your life." My minor variation of Stephen Mitchell's translation of Rainer Maria Rilke's "Archaic Torso of Apollo," from *The Selected Poetry of Rainer Maria Rilke* (New York: Vintage International, 1989) 61.

32 See the "Code of Hammurabi," cited in Eugene Weber's *The Western Tradition: From the Ancient World to Louis XIV* (Boston: D. C. Heath and Company, 1965) 15-20.

33 Wallace Stevens, "Notes Toward a Supreme Fiction," from *The Collected Poems of Wallace Stevens* (New York: Alfred A. Knopf, 1981) 385.

34 From *Herakleitos and Diogenes*, translated from the Greek by Guy Davenport (San Francisco: Grey Fox Press, 1979) 40.

35 For more on this allusion, see Michel Serres, *The Five Senses: A Philosophy of Mingled Bodies*, translated by Margaret Sankey and Peter Cowley (London: Continuum, 2009) 299-303. He ends in summary when he concludes, "Through their topological design, their friction and their strength, in distinction and clarity, knots weld the local to the global and conversely."

36 A version of this quote can be found in *Herakleitos and Diogenes*, translated from the Greek by

Guy Davenport (San Francisco: Grey Fox Press, 1979)

44. Their exchange goes like this:

I am Alexander the Great.

I am Diogenes, the dog.

The dog?

I nuzzle the kind, bark at the greedy, and bite louts.

What can I do for you?

Stand out of my sun.

Michel Serres contemplates this dialog in a chapter entitled, "Friar," from his book *Detachment*, translated by Genevieve James and Raymond Federman (Athens: Ohio University, 1989) 65-97.

37 Diogenes' disposition to eliminate the intermediary is best captured in this fragment, "I broke my bowl when I saw a child drinking from his palm at the trough." A version of the quote above can be found in *Herakleitos and Diogenes*, translated from the Greek by Guy Davenport (San Francisco: Grey Fox Press, 1979) 44. I fused Davenport's rustic translation with Serres' story of the same incident, which can be found in his book *Detachment*, translated by Genevieve James and Raymond Federman (Athens: Ohio University, 1989) 66-67.

38 Covered in Michel Serres' book *Detachment*, translated by Genevieve James and Raymond Federman (Athens: Ohio University, 1989) 81.