Manuel de Landa

in conversation with Timur Si-Qin
Timur Si-Qin: Your philosophy is explicitly realist and there seems to be a reemergence of realism in philosophy in general these days. How do you see your work in relation to this movement? Do you think realist philosophy is/will become important for people in today's world?

Manuel de Landa: In the twentieth-century, at least in the humanities, idealism reigned supreme: the world, if it has any independent existence at all, is formless; we humans give it form with our mind and our concepts. Even in the hard sciences positivism was a dominant position, and it too is an anti-realist stance. (Positivists believe in the mind independence of directly observable entities, but not that of electrons, atoms, viruses, bacteria, etc.) So just in terms of timing, there is a feeling out there that those two forms of anti-realism are exhausted, and a search for new alternatives is on. Of course, Marxist materialism was always a countervailing force, but this form of realism is also increasingly regarded as having had its best times in the past. So there is a vacuum today, a vacuum that could be filled with a new form of materialism that rejects a priori schemes of morphogenesis (e.g. Hegelian dialectics) and replaces them with a plurality of schemes for which there is evidence, and that are, therefore, a posteriori. Now, many of the problems facing humanity are caused by material processes that are not directly observable, such as the slow pollution of the atmosphere, rivers, oceans, or the slow degradation of human skills due to the spread of routinized labor in mass production. Idealists would have no way of dealing with this (as far as they are concerned, these processes do not exist) and positivists would also have to treat their existence as a mere hypothesis. So it may be due to the urgency of the material problems that we face, many of which escape direct experience, that realism could make a come back.

One fascinating thing in your writing is how you debunk the existence of “Capitalism” as a generalized whole, in favor of much more heterogenous, emergent processes at play in the global economy. This seems like a refreshing non-conspiratorial position to take. Is this one of the ways your new materialism stands in contrast to marxist materialism? Could you talk about this and some other important differences?

The author that inspired me in this respect is Fernand Braudel, the main economic historian of our time. His history of European economies from 1400 to the Industrial Revolution is the most comprehensive that has ever been written: he and his disciplines actually checked Florentine bank books from the 15th century; the books from factories in Milan in the 16th century; the history of the Venetian arsenal, the most important military-industrial complex in the early part of the past millennium. And after gathering all this data, his conclusion was that as far back as the 13th century there have always been at least two economic spheres: wholesale was never like retail (until the 20th century); industrial production using economies of scale was never like that based on the agglomeration of talent in a region or city and based on small firms; and high finance has always been an entirely different world from that of small money lenders. At the end of the third volume of this work, Braudel concludes that there never was a single overall system. To fix this misconception he changes the definition of the term “capitalism” to signify Big Business, with its capacity to manipulate demand and supply, and keeps the term “market economy” for populations of small firms that are in fact governed by anonymous economic forces. Today, in the middle of an economic crisis created by firms that were too big to fail, a crisis in which profits were privatized while losses socialized, Braudel’s words sound deeply prophetic.

As far as a contrast with Marxist materialism, the answer is two-fold. Against historical materialism we need a new vision of history without teleology, one which avoids a periodization into internally homogenous eras: feudalism, capitalism, socialism (or the Age of Agriculture, the Age of Industry, the Age of Information). There were never such Ages or Eras. Braudel, for example, shows how in the 14th century the areas of Europe that would become France and Spain did have monarchs ran by feudal lords, but the city-states in northern Italy and northern Germany (the Hanseatic league), as well as Flemish and Dutch towns, were already modern in many respects. Thus, we need to rethink our philosophy of history in the face of historical evidence. On the other hand, dialectical materialism is objectionable for different reasons. Any materialism needs a theory of synthesis to be able to account for the historical identity of mind-independent entities. But Marx took his theory from Hegel, synthesis through the negation of the negation, and this is an a priori scheme, the inadequacies of which were made obvious by Engels’ attempt to apply it to nature. What we need are a variety of a posteriori schemes of synthesis (from physics, chemistry, biology and other fields) to account for all the different morphogenetic or synthetic processes that shape the non-human world, as well as the world of economics, starting with an account of the emergence of prices (when not manipulated via economic power) as a collective unintended consequence of intentional action.

Do you have any thoughts on what a neo-materialist social and/or economic politics would look like? For example how could issues like privatization versus socialization be approached?

Once we break with the idea of the capitalist system, a system that you must replace as a whole via a Revolution, many options open up. I mentioned before the distinction between industrial production based on economies of scale and that based on economies of agglomeration. The former is typically based on routinized labor (Taylorism); the leaders are managers of a joint-stock company (in which ownership and control are separated); its actors have pricing power (managers add an arbitrary mark-up to their costs); and it typically forms oligopolies, dominated by a few giant firms. The latter uses skilled labor (it depends on the agglomeration of talented people in a region); it is led by entrepreneurs (owners with a vision that risk their own savings); its actors do not have pricing power; and it forms large populations of firms in which, unlike oligopolistic rivalry, there is real anonymous competition. Now, this is a rough distinction that needs to be nuanced in many ways but it will serve to make my point. While economies of scale are private, the system resembles that of a government ran set of companies. As John Kenneth Galbraith, a great but neglected economist, pointed out half a century ago, oligopolies constitute a planning system, hardly distinguishable from communist central planning. And the fact that large firms are ran by hired guns (managers can own stock options but they do not have to) also resembles government ran firms
in other countries. So, as it turns out, the distinction between the private and the public is a lot trickier than it seems.

Politically, this matters because if you are, say, part of the Occupy Wall Street movement, you need to make a distinction between fair competition among small firms ran by entrepreneurs and the rigged system of large corporations in which the impersonal forces of demand and supply are manipulated, and hence, do not allow prices to set themselves. You need to make this distinction because you do no want to come across as denouncing the “system” as a whole. In a study by AnnaLee Saxenian comparing Silicon Valley (dominated by economies of agglomeration) and Route 128 near Boston (once dominated by economies of scale) she shows that during bad economic times, economies of agglomeration are more robust and “weedy,” while economies of scale are brittle, and hence, must rely on government bail-outs when external shocks bring them down. Hence, there are choices to be made that are not the old choice between “privatization” and “nationalization,” a distinction based on marxism, and one still carrying the stigma that Marx, borrowing from Proudhon, phrased with the ridiculous slogan “Private property is theft.” There are many leftists out there who still believe in that silly slogan.

Your latest book Philosophy and Simulation systematically describes different stages of life on earth and their corresponding computer simulations. Why should simulations be considered to provide insight into these processes?

In other books I have expressed my commitment to the existence of a mind- independent world, a world in which autonomous entities are characterized by their actual properties as well as by their tendencies and capacities. The latter are real but need not be actual if they are not currently being manifested or exercised. Since tendencies and capacities can thus be potential (or virtual) it is necessary to come to terms with their ontological status. For tendencies, such as the tendency of water to freeze at zero degrees centgrade, what we need is to determine the structure of the possibility space associated with water. In this case, the space is characterized by two singular or special points (freezing and boiling points) and by many ordinary ones. Thus, for tendencies it is a distribution of singularities that sustains their reality when not actually manifested. For capacities, on the other hand, we do not have such an analysis, partly because they are relational: a capacity to affect must always be coupled to a capacity to be affected for it to become actual: the capacity of a knife to cut must be exercised in interaction with something (bread, cheese, but not solid titanium) with the capacity to be cut. Mathematics, so useful in the analysis of tendencies, is of limited value here. What we need is a way to stage interactions in which capacities are exercised, and by staging a large number of these with different parameter values, we can begin to map these other possibility spaces. In my new book, I argue that computer simulations are the best way of exploring the structure of the spaces associated with capacities.

This concept of the phase transition, such as when materials go from solid to liquid to gas, plays an important role in your work and you apply it to everything from economics to genetics. How did you first come to correlate the process of the phase transition from dynamical systems to philosophy?

I first encountered the idea in the work of a physicist named Arthur Iberall, a pioneer in the study of nonlinear systems. He proposed looking at the main transformations in human history—hunter-gatherer to agriculturalist, and agriculturalist to urban—not as steps in the ladder of progress but as critical thresholds at which a quantitative change becomes qualitative. What I found attractive about this idea was that it eliminated teleology, as if it had been the destiny of humanity to progressively grow from a hunter-gatherer infancy to an agriculturalist adolescence, and then to full urban maturity. But if these are critical thresholds we can imagine hunter-gatherers rejecting agriculture: it was more fragile for a while; it caused a reduction in the body of knowledge about edible roots, nuts, and other plant products; it involved new problems associated with sedentary life, like getting rid of human refuse. And we can imagine agriculturalists actively preventing the crystallization of a State, by ritually burning food surpluses and making sure leadership was not permanent. The first thesis suggests that agriculture was imposed on European hunter-gatherers by invaders from North Africa, a hypothesis that seems to be verified by the genetic patterns studied by Luigi Cavalli-Sforza: genes from North Africa are present in the European gene pool in a way that suggests violent replacement not peaceful coexistence and intermarriage. The second thesis, the existence of active mechanisms to prevent the emergence of formal authority, has been studied by Pierre Clastres. These two theses make sense if we follow Iberall and think of small bands of hunter-gatherers interacting irregularly as forming a human gas; of the earlier agricultural settlements as a condensation of this gas into a human liquid; and finally, of the emergence of mineralized cities and a central government that codifies every aspect of life, as a crystallization of liquid humanity.

My mother had a large Luigi Cavalli-Sforza book, I think it was The History and Geography of Human Genes, lying around when I was a kid and I remember being quite fascinated by it's illustrations. To me they impressed a certain materiality of genetic distributions. Do you foresee current societies approaching any critical thresholds? If so can you make any predictions on what those future states may resemble?

A very important property in nature that exhibits critical threshold is connectivity. A good example are percolation thresholds: if the empty spaces between grains in the soil are fully connected then water and nutrients can flow freely, else they can't. These thresholds are also present in a more abstract form in any phenomenon that can be modeled as a graph: are the nodes in the graph fully connected? In chemistry, for example, substances are represented by nodes, possible reactions between them by edges between nodes. If the percolation threshold is reached then it means that entire chains of chemical reactions become possible, long chains that are crucial for the development of living metabolisms. Although the social world has increasingly become interconnected during the last few centuries (through maritime and railroad transportation, and telegraph and
telephone communication) it is clear that the kind of connectivity being produced by the Internet has no precedent in human history. I have not made any detailed studies of percolation thresholds involving computer networks but I am sure they exist and the moment they are reached they create new opportunities and risks for communities, organizations, cities, and countries. On the other hand, there can be such a thing as an excess of connectivity, in which case we may have to rely on technologies of disconnection, the most important kind of which is cryptology. Humans may soon be forced to learn that they have to manage their connections more actively, encrypting some while letting others unencrypted.

In *Intensive Science and Virtual Philosophy* you describe physical laws as philosophical fossils embedded in the philosophy of science. Do you see this notion affecting actual scientific practices? If so, how would the alternative look?

The concept of an eternal and immutable law of nature is, indeed, a theological fossil, a leftover from the times when all scientists were deeply Christian. It is important, then, to get rid of the word, but not of its referent: the immanent patterns of being and becoming that scientists have discovered. Philosophically, this is important because laws assume a concept of a material world that is obedient (that is, that follows the law) and a concept of matter as an inert receptacle for forms coming from the outside. This is so close to the Aristotelian view (the hylomorphic schema) and even to creationism (in which a transcendent god gives commands, “let there be light,” that matter follows), that any new materialism must try to fix this. Deleuze and Guattari (in the chapter on Nomadology) point this problem out and attempt to replace the concept of a “passive matter that follows the law” with that of an active matter that possesses its own tendencies and capacities (or, in their terms, its own singularities and affects). On the other hand, the fact that we can remove the concept of “law” while leaving the objective knowledge produced by scientists mostly intact, implies that the concept is playing a rhetorical role in the discourse of scientists, not an epistemological one. Hence, it does not really affect scientific practice that much.

I think this is another example of locating and dismantling essentialist and transcendent notions in philosophy. Another example is in your writings on species archetypes vs. populations as well replacing the idea of “survival of the fittest” with a topological understanding of ecological optima. Can you talk about the importance of ridding philosophy of transcendental, archetypical and essentialist thinking?

In contemporary biology the human species, or any other species, is not considered a higher taxonomic category (as in Aristotle) but an individual entity. Not, of course, an individual organism but similar to it in that a species also has a date of birth (the event of speciation) and a potential date of death (the event of extinction). Hence, just like organisms are unique and singular (not even a clone is an exact replica, since it has a different embryological and ontogenetic history) so are species: once driven to extinction they never come back.
In my book *A New Philosophy of Society* I tried to create a social ontology that is like this: individual persons, individual communities, individual organizations, individual cities, individual countries. That is, an ontology populated exclusively by unique and singular historical entities. Each individual entity is made out entities of lower scales: thus, communities and organizations are made out of persons, cities are made out of communities, organizations, and persons, and so on. This way, the properties (and tendencies and capacities) that characterize each entity can be explained as the emergent product of the interactions between its components. Emergent properties, in turn, exorcize transcendence: when properties are not explained as a historical result of actual and sustained interactions they become transcendent. When they are emergent, on the contrary, they block reductionism (in that the properties belong to the whole not its parts) but they do depend on there being some interactions between parts, that is, they are immanent to these interactions.

On the other hand, each of these individual entities always exist as part of a population: a population of people, a multiplicity of communities, a plurality of organizations, and so on. This means that we must tackle these entities statistically, that is, that we must find out how variation is distributed in a population. This is another way of breaking with essentialism: for Aristotle the variation observed in a population of animals of a given species was a smoke screen, a sort of noise that did not allow one to see the eternal archetype of which these animals were but imperfect copies. But when you think statistically, the variation is the key (in biology, no variation = no evolution) as is its distribution. Thus, when you consider the distribution of secondary sexual characteristics in a population of men and women, you do not see two mutually exclusive categories instantiating the essences of masculinity and femininity, but two overlapping statistical distributions with many ambiguous cases in the area of overlap.

What is the ontology of the psychedelic experience?

When I write about the structure of possibility spaces I feel confident that this structure exists because mathematical models (and simulations) give you evidence that it exists. But this evidence in only for each case individually. There is no evidence whatsoever that all the structures of all possibility spaces (i.e., all multiplicities) form a space of their own. This overall virtual space is what we just referred as the plane of immanence. If it did exist it would be a kind of “divine” plane, in the sense that it would contain all the morphogenetic resources available to the material world. The first philosopher who thought about this, Spinoza in the seventeenth-century, conceived it as a god, but as an impersonal and immanent god, not at all like the personal and transcendent god of the bible. Now, the reason I have been investigating the psychedelic experience for four decades now (and 400 or so trips) is because I need evidence for all this. Not necessarily evidence that scientists would accept as legitimate, but enough so that I can write about it with conviction.
The existence of a plane of immanence is, of course, hypothetical. Or to put it differently, it is a concept that is the product of philosophical speculation. Nevertheless, the speculation can be constrained in a variety of ways. In addition, we may practice “transcendental empiricism” to have direct experience of the virtual plane so that the speculation is not entirely a priori. In my book, *Intensive Science and Virtual Philosophy*, I first began by making the existence of such a plane plausible using the work of a mathematician named Felix Klein. Klein showed that the different geometries known to him in the nineteenth-century (projective, affine, Euclidean) were related to one another by a relation of progressive differentiation: in projective geometry all conic sections are one and the same figure; in affine geometry, circles, ellipses, and parabolas are distinct, but small and large circles, small and large ellipses, are the same; finally, in Euclidean geometry (and other non-flat versions of metric geometry) small and large circles are different figures. Klein’s followers added new geometries to this scheme, differential and topological, geometries which are even less differentiated than projective geometry: in topology, all closed figures, squares, circles, irregular polygons, are the same. It is almost as if topology gave birth to the other geometries as it differentiates, or to use the technical term, as it loosens symmetry. I used this well known ordering of the geometries by a symmetry-breaking cascade to speculate that material reality itself is the product of a process of progressive differentiation, from virtual topological diagrams (defined by non-metric properties like connectivity, dimensionality, and distribution of singularities) to actual entities in which length, area, volume, and other metric properties are important. This is, indeed, just a metaphor. For one thing, there are other symmetry-breaking cascades that are not geometrical: the four forces of physics (gravity, electro-magnetism, strong and weak nuclear forces) are thought to have progressively differentiated from an original super-symmetric force existing at the Big Bang. And in biology, the progressive differentiation of a single fertilized egg into a hundred different cell types arranged to form bones and muscles, brain and heart, is also not just a metrization of topology. Nevertheless, the metaphor is a fruitful one. It allows you to give the virtual plane its own temporality, without which it would be an eternal repository of diagrams hardly distinguishable from a reservoir of essences. The idea is to think of actual time as metric (cyclic in this case, since we measure “lengths of time” by counting cycles) and then trying to conceive of a topological time, one in which there is no present (all presents are actual) but only past and future topologically stretched in an unlimited way. This virtual temporality (which Deleuze calls *Aion* to oppose it to metric time or *Chronos*) is necessary to allow us to think of the virtual plane as emerging from the actual world, while at the same time being irreducible to it.

By what mechanism do you think specific arrangements of atoms introduced to the brain are able to reveal this plane?

The state in which we are born is a state of delirium, in which all the different intensities that have the capacity to affect our senses—intensities of color and sound, of flavor and aroma—exist in an unstructured field. As we grow up, habit and routine forge associations between intensities (by similarity, spatial contiguity, temporal co-occurrence) to create the more or less stable world of everyday perception. This is, of course, the Humean theory of experience in which language does not play the key role, as opposed to the Kantian one in which conscious experience is basically conceptual. Deleuze expressed his allegiance to the former by writing his very first book about Hume. At any rate, if habit and routine stabilize a field of intensities and allow a subject to crystallize, then is it not possible to think of ways of destabilizing subjectivity and liberate the intensities? Sensory isolation chambers, a strong enough fever, madness, and yes, psychedelic drugs, can all produce that effect. When you overdose on the latter, your self literally disappears (it melts away as in a phase transition) but you do not become unconscious: rather consciousness becomes decentralized and now belongs to each of the intensities. This is, as it were, the story from the software point of view. The hardware story has more to do with the way the molecules of the different psychedelics mimic serotonin (they all share a molecular motif) and so can act on the brain stem to induce a dream-like state.

I’ve noticed in some of my own experiences of becoming aware of certain mental routines or thought-loops, that once I became aware of, I could disengage or dissolve. Maybe this is an example of breaking up subjective routines. But another kind of experience is one of emotional and intellectual integration. Would that be a different process? Maybe a recrystallization of subjectivity?

Can you recount an important or influential trip you have had?

When I mentioned the state of delirium above I said that it involved intensities, and gave colors and sounds as examples. But emotions are also intensities: pride and humiliation; love and hate; joy and sadness. These too become unhinged during a psychedelic experience and as they escape the grip of your ego, and they take concepts along with them. The cognitive side of emotion is therefore heightened. Unlike language, which is basically a “digital” (more exactly, a discrete) form of coding physical information, emotions are analogue and like analogue recordings of sounds or pictures, they contain a lot more information than their digital counterparts. This is yet another variation of the topological-metric distinction, now along the lines of subjective intensity. You learn a lot on a trip, but you can verbalize only a small portion, so you need to trip as many times as you can. Hence, despite the fact that some trips are more memorable than others, it is the overall cumulative effect that matters: each trip is a “revelation,” not of course in the sense that a personal god is speaking to you from above, but merely in that the amount of information that you are processing is much larger than when you do
not use emotions cognitively. But only after many such “revelations” you learn how to bring a few gold nuggets back from the virtual side, coded in actual language.

Can you tell me something about your shaman? Is she Mazatec or a member of another indigenous tribe? When and how did you come to know her?

I met Julieta in 1974 when I visited the Sierra Madre mountains in the state of Oaxaca. The most powerful species of mushrooms grows there. She was Mazatec, leaving near Huautla, the largest indigenous town in Mexico. Unlike the north-west of the country where the sacred plant is a cactus, the trip is during the day baking on the dessert sun, and the shamans are male, in the south-east the plant is a mushroom that comes out with the full moon, the trip is at night in a place with more luscious vegetation, and the shamans are women. Somehow, when given the choice I went for the second one almost immediately (though I have many friends that swear for the dessert experience). Julieta was a peasant woman, with a humble vocabulary, but incredible wisdom, and we became close almost right away. I already had my own ideas about the experience, and her discourse was heavily inflected by Christianity, so it is not as if I had become her follower. Rather we established from the start a kind of partnership based on mutual respect, a partnership that lasted until her death in 1997.

You are the Gilles Deleuze chair at EGS and most of your books explicitly mention him, but your latest book does not. Does this reflect a shift in your relationship to Deleuze or do you feel like you are exploring concepts previously unexplored by him?

Deleuze is there in the new book, only now he’s become virtual: he just kind of floats over the pages without his name being mentioned. I think he would have liked this. But you are right, in that book and the one I am writing now (on philosophy of chemistry) his presence is not nearly as prominent as it used to be. And the reason is that there are many Deleuzians out there that are idealists (you know, mixing Deleuze with Heidegger, or with Lacan) and they will destroy his work, at least for a generation. I have been present in Deleuzian conferences in which some of the presentations are like vomits of jargon: bodies without organs, lines of flight, desiring machines... all the terms used without a definition and, in many cases, without any serious understanding. So, with the world of Deleuze now populated by idealists, I see no point in belonging to it. Materialist Deleuzians, like John Protevi and others like him, are of course, an exception to this, and they keep the hope alive that the idealists will move on to the next intellectual fashion and leave us alone to develop a new materialist philosophy.

Can you tell us a little about the objectives of the philosophy of chemistry book you are currently working on?

After having focused on ontology, I needed to write a book on epistemology, but I did not want it to be about individual persons, but a collective epistemology. Hence, studying a scientific field, in which a whole community of practitioners confronts the phenomena in a domain and searches collectively for solutions posed by the domain, seemed like the ideal subject. Chemistry is the perfect example of a minor science, a concept introduced by D&G (in Nomadology). Minor sciences, unlike royal ones like astronomy or classical mechanics, deal with variety and heterogeneity. One way of illustrating this is by comparing the domain of phenomena studied by different fields. Physicists study energy which, as we know, comes in a limited variety of basic forms: gravitational, electromagnetic, and the two atomic forces, weak and strong. There are, of course, many other varieties, like the energy of movement (kinetic), or of deformation (strain), but these can be reduced to the first four. When you have four targets to explore, the hope of a final theory seems justified. The domain of chemistry, on the other hand, is made of substances and their transformations (chemical reactions). This domain increases in size every year as chemists synthesize new substances (and these can enter into new reactions). By one calculation, there were 16 million substances in the domain, with a million added each year after that. This means not only that the domain is unsurveyable, but that it gets even more so with time. Clearly, no chemist could ever dream of a final theory. It is the perfect example of a community collectively exploring an ever expanding domain, and having to invent new concepts, statements, problems, and models all the time.