

Towards a New Notion of Geography: A Topocritical Review of Ogallala's States

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From the voyages of Vasco de Gama to the expeditions of Sir Francis Drake, from the Mercator's projection of the World through the botanical exploration of Saint Bernardin de Saint Pierre, a desire to accurately model the planet was shared by representing the Earth. The discovery of the unknowns of the planet was entirely dependent on a discovery of knowledge - positive sciences and the antipodal spirits of the "Big Narratives" of Modernity. This desire compelled the discoverers towards "the limits of the probable" which elevated the knowledge and its forms of representation. While the National Societies of Geography conveyed an understanding of the World as being smaller than the Earth, endeavoring to better orient humans within the globe. This understanding, has since inverted: Earth is smaller than the World. By being entirely remodeled by techniques: satellites, telecommunications, aerial photography, radars, drones, and the breadth of internet has deployed a new abysmal world interwoven with a deep knowledge of the physicality of the Earth and its complex environments. This new notion of geography is engaged through an activism that is trying to represent the relationships that currently exist between all the traceable layers of the knowledge and its appropriated forms. This activism is the labor of a renewed artist called "topocritic" that borrows every system of representation of the different disciplines in favor of showing this reality within its complexity – to reconnect the remote with the proximate by showing the actual relation between different forms of the World, silos of knowledge and systems of representation. The Ogallala aquifer is the case study of this paper that concludes with the "Atlas of Ogallala's States".

PREMISE

Through the belief that architecture is a tool capable of transforming reality, we are interested in a conversation that discusses architecture as infrastructure [1] instead of object. While we still think that architecture is manifest in "artifacts", we want to stress that these artifacts become "infrastructure" if they are activated from a map of relationships, and not from an object of self contemplation that desires to contain the whole meaning. Through this gaze, the role of the artifact is to take agency from the map, while the role of the map is to establish possibilities, potentialities, and opportunities to draw one architectural solution among others [2].

SHALLOW HISTORY "TO DEVISE THE HISTORICAL PROFOUNDNESS OF THE MATTER"

From this perspective, Architecture could never be simply a unique object but must be one that is always pragmatic and functional. Beauty will result from the functionality of the project merged with the latent forms of the map: For instance, in his project "Potteries Thinkbelt" of 1963-66, Cedric Price proposes a set of strategies to develop an extensive territory, measuring 180 kilometers in the East Midlands of Northern England, which has been subject to erosion by the exploitation of coal and pottery production since the beginning of the industrial period until the first half of the Twentieth Century. This project proposed to re-activate by reusing, or re-inventing, the use of the infrastructure of this abandoned industry. The program would be an experimental university model that would stop the "Brain Drain" that was afflicting the country in the late fifties.

Cedric Price drew the opportunity of a new territory by exposing arranging it through a set of technical drawings and strategies that followed a timeline. The architecture appears, not as a result of technical operation that considers a pre-established program in the building, but as a collection of actions that re-investigates what exists and how to manage it. Aligned with "Potteries Thinkbelt" there is another family of projects that follows a different trail, but presents similar questions of functionality and technology instead of objectuality. The project "New Babylon" of Constant Nieuwenhuys of 1950-74 is one such spatial organization based in the technologies capable to reinforce and develop culture instead of business and ownership environments. The project ideology

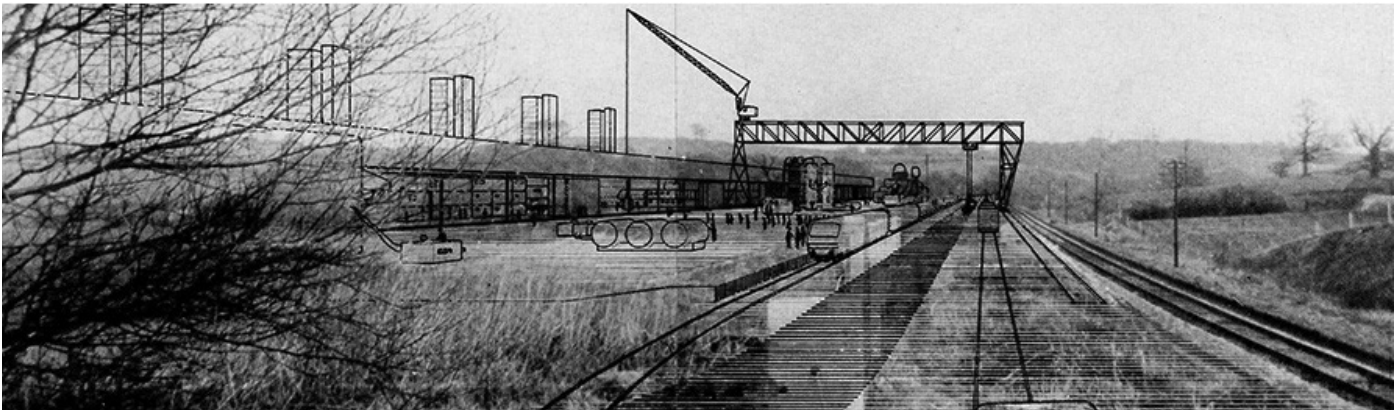


Figure 1: Potteries Thinkbelt, Cedric Price, 1963-66

starts by presenting the statement of Vaida Voivod III, the President of the World Community of Gypsies for a nomadic town: "We are living symbols of a world without frontiers, a world of freedom, without weapons, where each may travel without let or hindrance from the steppes of central Asia to the Atlantic Coast, from the high plateau of South Africa to the forests of Finland". The social model of gypsy communities is the origin of this narration that concludes in a building emancipated from the ground. Constant's project is not singular building, moreover is a net of nodes, sectors and collectors that stands hovering over different locations and countries [3]. Less idealized and more pragmatic, projects such as the "Sin Center" of Michael Webb in 1959 and the Fun Palace of Cedric Price in 1962, and later on to the proposal of Rem Koolhaas and Bernard Tschumi in the late sixties and early seventies in the Architectural Association, representing how this vein of thought has been producing architectural works less crystallized in exclusivity as objects and more inclusive as "infrastructures" (More interested in realized buildings and material form, and more socially utopic than realistic, this ideal project presents very open and pragmatic structures, some even emancipated from the soil): that became pure functions to construct the ludic atmospheres of Constant or the powerful programmatic operations of OMA. Even still, some cases presenting the beauty [4] of formal approaches allow for the creation of attractive forms emerging through a lack of interest in form as a form. All the mentioned projects are instead forms as "organization, strategy and pragmatism," and their "beauty" should be in the search for capabilities and functions, or as in Potteries Thinkbelt - how this investigation reopens a new understanding of a world already made - emanating from the idea that nothing is designed out of a designed need. Therefore, the map for some, and the map and territory for others, are the documents that empower the project, even the project themselves.

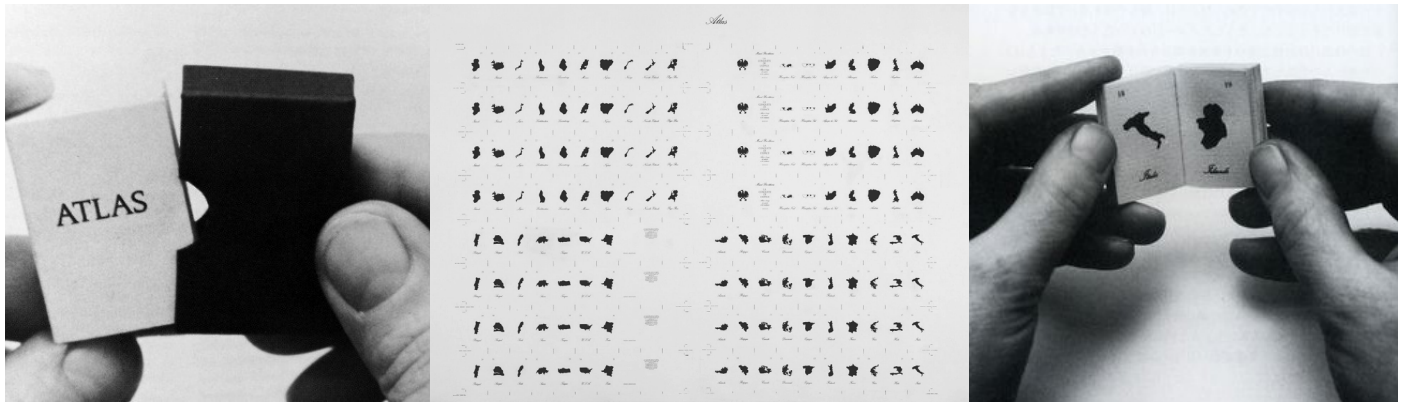
CONFUSION, REALITY AND THE NEED OF MAPS

In his essay "Atmosphere, Atmosphere" (2003), Bruno Latour suggest that those that think that the future will be clearer than the past are still moderns [5]. In opposition, those that consider the future will be more confused than the present are out of the Modernism. Frederic Jameson, in his lecture (based on the book of the same title):

"Postmodernism or the Cultural Logic of Late Capitalism" (1991) supports the argument that the reality nowadays is untraceable and may only be represented by cross sections of specific moments and conditions that will have the feature to be as local as global. The last paragraphs are titled "the need of maps [6]." For him, the filmmaker Alejandro Gonzalez Inarritu uses movies such as "21 Grams", "Babel" and "Amores Perros" to assemble the world, making maps using a diverse set of scales relating to social, political, economical and cultural systems [7]. In all cases a banal circumstance initiates the mobilization of the entire world. The pressure, the inflammability, and the tension of our present reveals the density of relationships between institutionalized environments, the heaviness of the laws and agreements, the technicality of our cultures that makes the world un-representable. Nowadays the world is exactly as it was before the great commissions launched by the National Societies of Geography [8] in the XVIII Century. If politicians, lawyers or journalists traffic in the representation of a world that changes daily, what is the position of architects within this very same world - a world entirely remodeled by the scientific thought and new consequence?

TOPOCRITICS "HOW TO MAP THE WORLD?"

What becomes clear at this point is: when the "National Societies of Geography" endeavored to dominate the globe by mapping the Earth as a quarry of resources, the Earth was bigger than the World. This understanding, has been inverted: the Earth is now smaller than a World [9]. Being entirely remodeled by our techniques: satellites, radars, drones, telecommunications, aerial photography, the breadth of internet, etc, a new notion of geography is not needed to map the Earth, but the World. This new notion of geography is engaged through an activism that is trying to represent the relationships that currently exist between all the traceable layers of the knowledge and its appropriated forms as we grapple with the information, speed and connectivity of the new millennium [10]. This activism is the labor of a renewed artist called "topocritic [11]." This topocritical activist borrows representational tools of various disciplines in favor of showing the reality within its complexity - reconnecting the remote with the proximate by showing actual relationships between disparate forms of the World, silos of knowledge and systems of representation.



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SHIFT IN REPRESENTATIONAL TOOLS

“Techniques and Temporalities”

From the positions of Latour and Jameson - the future is considered to be even more complex than our present. This view challenges design actors to move out of their characteristic realm of voracious productivity and into the critical observation, description and representation of our proximate World. This work needs assistance through other conceptions of temporality, spatiality and mobility as we seek inclusivity and criticality within the values of our conventional depicting tools.

If in the past representation distinguishes: A/ the representation of the nature by the features of precision, exactitude and reference: B/ the representation of the people in society by the features of faithfulness, confidence, and obedience. Now everything is merged. Today representation means everything at once. How to assemble the world?

In his book “Atlas: How to Carry the World on One’s Back” [Atlas: Como llevar el Mundo a Cuestas], George Didi Huberman presents how the Atlas has been supporting the history of humanity through the way in which it constructs knowledge, and how the current trend to the Atlas is trying to re-think this construction. The principal object of analysis is the well known “Atlas Mnemosyne” - Aby Warburg’s attempt to map the afterlife of antiquity. Huberman presents the Atlas of Marcel Broodthaers (1975) to illustrate how institutionalized forms are subject to being reconsidered through the artistic lens of agency. If the problem of the representation is critical, it is because this allows to construct the actual world (empowering or marginalizing the actors, and permitting or restricting the ability to act).

OGALLALA

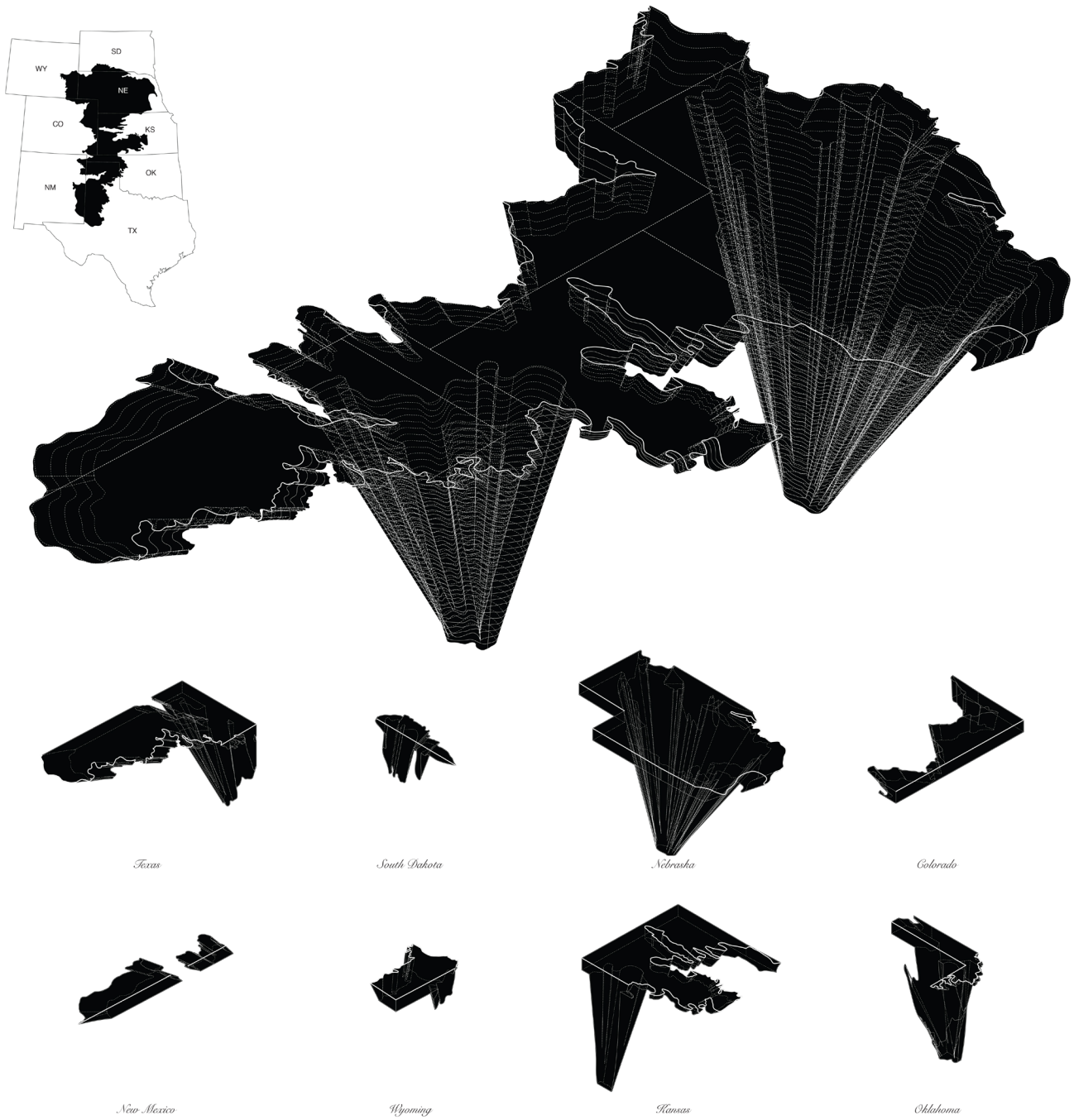
“From the Muesli on the Table to Permian Basin”

Living in Lubbock, a city dependant on a sole source of water in the Ogallala Aquifer, as architects involved in infrastructural activities,

it becomes imperative for us to be critical of our situation. How can we realize the connection between the Muesli on the table with a subterranean water structure from the Miocene to early Pliocene ages when the southern Rocky Mountains were still tectonically active; a seemingly “Latourian” expression to put in tension the Earth with the World.

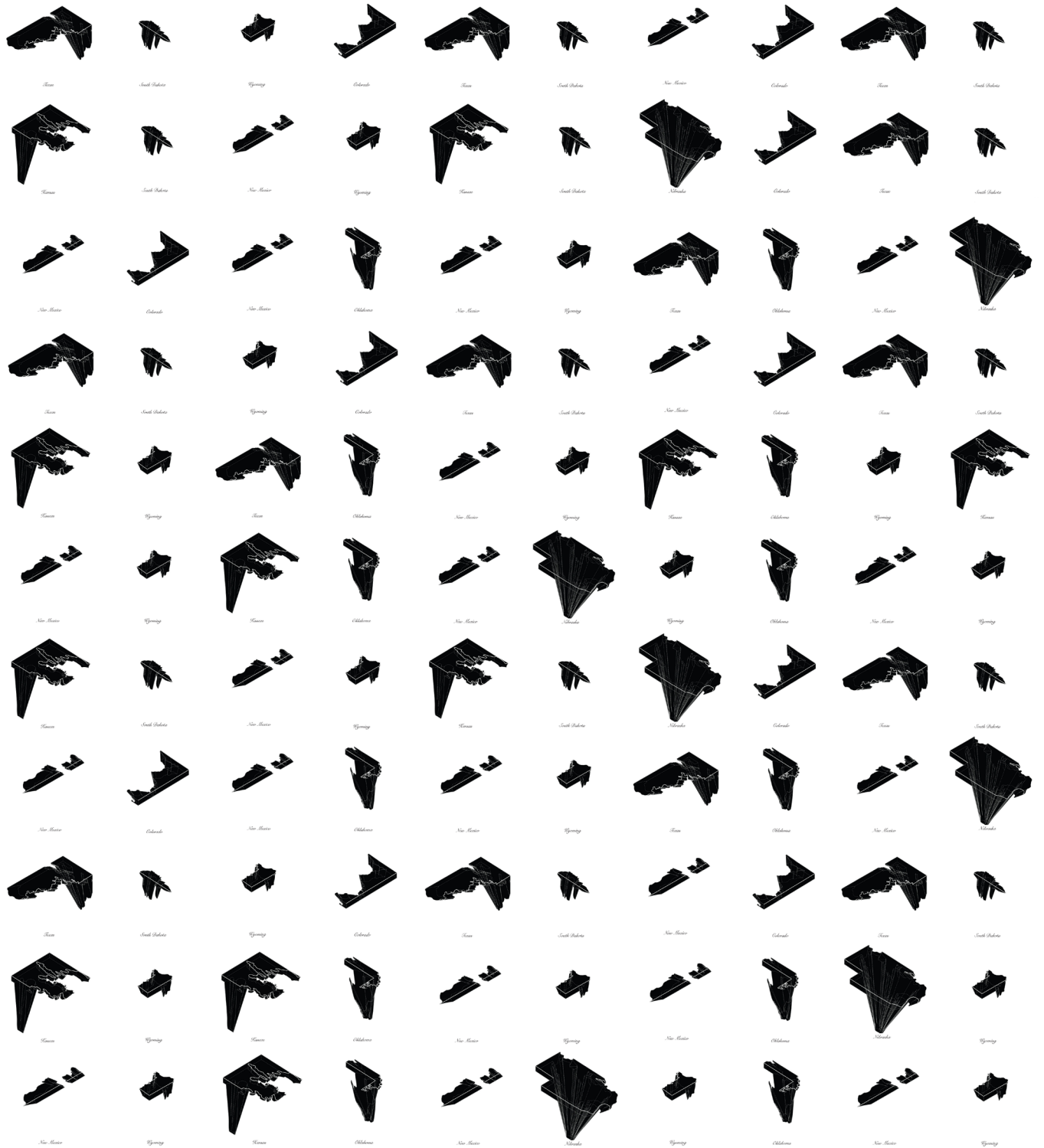
A/ The Earth: The Ogallala is an hydrogeological structure made by millions of years of accumulated water. This fossil sea embedded within layers of varied soil structures, water flows, and permeable rocks with different densities. This aquifer is an immense structure that goes from south Dakota to north Texas. The technique of the irrigation has constructed a new landscape: a Green Carpet of crops that using the fossil water connects the remote with the proximate, the glacial age with the Muesli on the table. Part of an ancient geological structure merged with the West Texas plains, where Lubbock is located, and overlapped with the Ogallala geological structure, the Permian Basin is an underground landscape made by Rocks, Gas Bubbles, Oil, and Water; matters with thousands of millions of years of history.

B/ World: in the south plains, a wild mechanization system to harvest cotton, wheat or corn is drawing circles, squares and dots. In Lubbock, Water and Oil have a symmetrical image on the surface: Oil Bombs and Cotton flowers: facing north to Amarillo Wheat, Corn and Cattle “gardens”. In the south plains, the production is drawing circles, squares and dots. There the territory is flat and the surface is a green garden. Above the horizon’s line: there are cylinders, triangles, rectangles, ramps, pipes, and aerial industrial structures, and on the floor: road lines, green circles, concret dots and railways. Infrastructures that will be obsolete as soon as the natural sources will be depleted. At this moment those infrastructures will present the question: How can we reinvent their functions? Using a Potteries Thinkbelt methodology, in architecture it is easier to say: The redoing is the new doing .



*Construction of Ogallala's States
State boundaries ~ Consumption ~ Speed of Recharge*

Figure 3: Construction of Ogallala's State by RBD



Atlas of Ogallala's States

Figure 4: Atlas of Ogallala's State by RBD

CONCLUSION

Due to these immense liquid extractions, water has become an issue of now. The United States Geological Survey (USGS) estimates that by the year 2028 the Ogallala aquifer could be depleted [18]. The independent laws of each bordering state determine a varied legal structure for water withdrawal, as history, culture, and economical models allow for exploitation of the aquifer at differing speeds. The surface, divided by geopolitical lines since 1803 to 1855 has split the unity of the great geological forms in different states. Interestingly, this division precedes its discovery, as the Ogallala aquifer was brought to light in 1898 by Nelson H Darton, a hydrogeologist who deciphered the actual dimension of continuity across these seven states.

If the representation of the states prioritize geopolitical forms of the surface, it is urgent to shift to a new image that demonstrates the dependency of human activity on the depths of the aquifer (Fig 3). The agricultural land above the Ogallala aquifer is currently the most productive in the world, representing 25% of the cotton produced in the United States, and 30% of the entire economic output of Lubbock. Observing the economic dependency on this high plains aquifer, and the different laws and cultures of each state this paper presents: the Atlas of Ogallala's States (Fig 4)[19]. A three-dimensional map that could "represent" both at once aquifer water volume and state boundaries (The Earth and the World). The result is this: an actualized Atlas of the states showing how each is dependent on the Ogallala.

How to represent the World? If the physical, cultural, structural... conditions of the site, historically, were considered as a document containing the knowledge(s) of the place, now the site becomes a small piece of a bigger puzzle that only the map can represent. But the map, should no longer be a two-dimensional reading of surface conditions, but must be given agency as a critical construction to reveal or hide the matters acting on a place.

This map, therefore, is the essential tool topocritical actors produce to connect disparate pieces of knowledge, the proximate with the remote, to gain a fuller understanding of our complex reality represented through new cartographic deployments.

ENDNOTES

1. "Between 1965 and 1969, Toyo Ito worked in Kikutake's office. Upon starting his own office, Ito adapted and redefined his master's exploration of the cross-fertilization of new technologies, urban life, and "nature." He recognized a post-identity city where boundaries such as inside/outside and private/public were becoming increasingly porous. Illustrative to his thinking is the Pao for the Tokyo Nomad Girl project (1985), which introduces the vision of an "urban nomad," immersed in the bubble of booming Japan. The performance of the building's skin as an ephemeral interface between building and city inform his explorations, illustrated for instance in his project Tower of Winds(1986)." From studio SO-IL, Idenburg, Florian: Liu, Jing; Papageorgiou, Ilias; <http://so.il.org>. Is being 32 years since, the 1985 Toyo Ito's project for the Nomad Girl of the XXI Century, presented the question of how much the city could be servicing the needs of their inhabitants or how much program could be included into the minimum shelter of a mega-urban infrastructure. Nomadism, mobility, migration or temporary residencies are the matters that make Ito consider the minimum

requirements of space and function for a XXI Century dwelling. A house for a "girl" who looks for opportunities in different cities. Ito's project radicalized the idea until the last very step where the girl is only demanding a makeup space. As infrastructural architecture, the project inhabits a net of other services accreting its functions by consuming existing technologies for the inhabitation of a city. The case of the territory is different, as the infrastructures are servicing productive landscapes and exploiting natural resources. In a difference of the Ito's Nomad Girl, the challenge is the representation of the infrastructure to open them for a functional reprogramming.

2. The map is presented here as "a potentiality"; a net of connections capable to connect different nodes and create different forms. Potentiality: See note 52 of Lubbock Scapes Collective in Marfa Conference ACSA 2017 Proceedings
3. To support the idealized society, Constant Nieuwenhuys defined the "Homo Ludens" as a Man that differs from the "Homo Sapiens" is defined by a ludic ethos.
4. Some of the authors presented above have identified themselves with a lack of interest on buildings plastic beauty, but in the end even some plastically can result in beautiful simplicity.
5. Latour, Bruno, Atmosphere, Atmosphere, an entry for the catalog of Olafur Eliasson, London, New Tate Gallery, 2003.
6. To present this switch between the modern world and the postmodern the term 'postmodern' could be used too as first coined by Jean-François Lyotard in his 1979 book *The Postmodern Condition: A Report on Knowledge*. Stating that the transition between modernity and post-modernity is the diminished importance of the Big Narratives that guide societies and our individual lives. Grand narratives like religions, the Enlightenment, Humanism, Marxism, Capitalism, Jeffersonian democracy, patriotism, and so on. Lyotard applauds the loss of these "Big Narratives" as they reinforce, if not create, oppressive power structures throughout the world.
7. As presented in conversation with the Philosopher Ramón Castillo in the *Círculo de Bellas Artes de Madrid* in Madrid, Spain, in November 6, 2015.
8. From the voyages of Vasco de Gama to the expeditions of Sir Francis Drake, from the Mercator's projection of the World through the botanical exploration of Saint Bernardin de Saint Pierre, a desire to accurately model the planet was shared by representing the physicality of the Earth. The discovery of the unknowns of the planet was entirely dependent on a discovery of knowledge - positive sciences and the antipodal spirits of the "Big Narratives" of Modernity [2]. This desire compelled discoverers towards "the limits of the probable" which elevated the knowledge and its forms of representation. As explained in Peter Sloterdijk's book "Foam, Spheres III", the National Societies of Geography and Botanists had the challenge to represent an entire hidden planet with it's oceans, mountains, rocks, weathers, animals and plants. The challenge today is to represent the world that human beings have constructed.
9. By World we refer to Human constructions: geopolitics, politics, culture, society, etc. By Earth we refer the Physicality of the Planet, the atmosphere, the electromagnetic poles, etc
10. Calvino, Italo, "Six Memos for the next Millennium", Chapter 01 *Lightness*. (Cambridge, Massachusetts: Harvard University Press, 1988), 13.
11. Bourriaud, Nicolas, in the reader "Heterocronias, tiempo, arte y arqueología del presente," *Murcia, Spain*, Ed. Cendeac, 2008.
12. We only need to follow news trying to choose one or two realities on the same event, mass media, or observe the current United States administration and North Korea agendas.
13. The problem of representation is positioned here through Richard Rorty's questions of the values and systems of validation of knowledge. The doubts of the representation, as holder of the truth, bring to us the question of our own disciplinary systems of representation, and as consequence its capabilities to support the relations with the actual world that architecture tries to consider. In some point of this theoretical clue, the architecture it self have to be consider as a system of representation to capture the meaning of the reading of this text.
14. Ibid 5
15. Didi-Huberman, George, "Atlas: Como llevar el Mundo a Cuestas", *MNCARS* (Madrid, Spain: 2011), 18.
16. Muesli: Whole grain oats, raisin (raisins, sunflower oils), sunflower Seeds, dried cranberries, brown rice crisps, dry roasted soybeans, dry apples, almonds, coconut and pumpkin seeds, melded with almond milk and honey is used as breakfast. A 1-pound package brings to the breakfast table a representation of an entire productive landscape. The high Plains from South Dakota to North Texas covered

by pivot irrigated surfaces are harvesting cereals that supports a big national and international consumption and its parallel economy.

17. The historical paradigm that forms follow the function is inverted in this premise. In the Late Capitalism, after post-industrial periods, wild mechanizations and the obsolescence of system understanding does not mean that the infrastructures are obsolete, the question will posit: redoing is the new doing.
18. A giant sinkhole collapsed near Denver City on July 28, 2009, demonstrating how the ground could be considered a landscape of movement. The metastable ground is evolving and reactive instead of solid and firm. It reacts with sensitivity to our surface actions and our social and ecological landscapes.
19. As each state increases the height of the water elevation in relation to different parameters of water consumption and speeds of recharge.