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Tracking Topologies of Global Trade

> Cities in their present context are modern inventions, and as the new electronic pathways that crisscross the globe circulate and readapt images of the modern city, they also produce the desire for tourism that fuels new contacts and movements within already clogged global travel circuits, unraveling hegemonic tendencies that have always made it difficult to read the map of spatial difference. Okwui Enwezor, *Introduction, Under Siege: Four African Cities*

L: global shipping lanes; R: global flight paths

Acts of trading produce the vapor trails of globalization's expansive reach. Various forms of trading circulate goods, services, ideas, data, waste and those people engaged in it across borders, continents and oceans. The movement of goods, for instance, from factories to markets to users link national economies with global cities. It is the millisecond movement of money across borders by the algorithms of financial trading that has created the economic imbalances stirring protests in the canyons of lower Manhattan and on the streets of Madrid. The movement of information and data across the Hertzian stata of the globe, what Hardt and Negri in *Empire* call "informatization," has marked "a new mode of becoming human" and has radically altered access to information and knowledge in many parts of the world. As a course, a path, a way, a "trade" is both spatial and temporal and some would argue was one of the fundamental human acts necessary for the formation of cities. What therefore are the emergent urban and architectural conditions produced by global/local trading? How should trading—physical or virtual—be monitored in order to comprehend and orchestrate productively its impact at the points of origination and arrival as well as upon the physical landscapes across which things traverse?

We will locate our global node of exchange in Africa where trading has had a long history. Under the successive waves of European colonization, for instance, the infrastructures of roads and railways in many parts of Africa were designed for the massive extraction of resources to exit the continent. Today this exploitation continues with the rush to grab agricultural lands and the exportation of raw materials by European, Asian and the Middle Eastern countries and corporations. The studio will invert that dynamic in order to understand the development of intercontinental trading and importation of goods and services. Johannesburg, located in the resource rich mining belt of South Africa, has the ambitions of becoming a "world class African City" (a recently contested claim.) The ethos that pervades the densely populated sidewalks and street trading stalls of Central Business District's (CBD) Bree Street and the generic concrete and glass clad office buildings that line the wide boulevards of tony Sandton to the north is that Johannesburg embodies the quintessential city of business. While occupying different ends of the economic and political spectrum, both the street traders of downtown and financiers of Sandton find themselves enmeshed in networks of trade that are affected by the variability of the global supply and demand chain. With South Africa's rise in the Global South to become one of the five BRICS nations, what had been infrastructures and urban structures conceived under Apartheid's racial logics of segregation to exploit labor pools for resource extraction and production has been reconfigured in the Post-Apartheid era to serve the needs of the neo-liberal State and transnational elites—without necessarily improving the conditions of life for those still disenfranchised. With the rise of new technologies of mobile communication and knowledge transfer is it possible to redirect the flows of trade in order to equalize these economic and power imbalances?

Johannesburg's Post-Apartheid landscape (pop. 3.6 - 4.5 million) has been characterized as space of extreme disparities, contradictions, and contested terrains that create gaps—synaptic clefts—as it adapts to a globalized networked society. Evidence of these clefts are demonstrated by the fact that South Africa has the highest mobile phone penetration rate in the world having broken the 100% barrier in 2008 and a total market reach of 44.5 million customers. This statistic exists despite the fact that broad areas of many settlements and other areas lack telephone landlines, adequate transportation infrastructure, sufficient electric power service, water supply and sewer service. To understand how networks of trade that flow from Johannesburg outward and back navigate across and through the city's spatio-temporal disjunctures, the studio will use parametric data spatialization to develop new topological models. Developing ideas through animations, videos, and other modes of representation, students will investigate how trading is impacted by these new types of relations and exchanges via mobile phone usage (SMS, transactions, exchanges, etc.) and time-sharing social practices, social media, and social networks (SMS, BBM, Twitter®, MXit, etc.) The studio research and projects will become part of an exhibition in the summer and fall 2014.

`Tracking Topologies of Global Trade` will pick up the research threads and methods developed in the summer workshop on *"Mobility and Trade: Data, Media, Race + Space"* conducted by Global Africa Lab (GAL) at Studio X in Johannesburg. The first half of the fall semester will research the spatial, temporal and socio-political dynamics of exchange. Trading will be studied at multiple scales—*macro/meso/micro*. Student teams will track the movement consumer goods, migrants, mining, energy, water, finance, and telecommunications that connect the local with people and places elsewhere in the world. The studio will also document the politics of the mobility across urban and national boundaries whose thresholds maintain different degrees of porosity. The first four-weeks of the studio hosts a series of workshops that introduce techniques of data mining and spatialization through parametric modeling. These topological models developed in Rhino with Grasshopper* will allow these systems and phenomena to be studied in magnitude from the global (macro) to the local (meso) to the site (micro). The studio will rely on tracking movements of trade in social media feeds such as Twitter®, MXiT, and other relevant resources. These animated parametric models and conventional mappings/diagrams will capture the temporal and spatial dimensions of the inequalities embedded within these systems and networks. This research will be further honed through a weeklong visit to Johannesburg in the fifth week of the semester to engage in further research at the *meso/micro* scale, project reviews, and workshops at GSAPP's Studio X JNB. With the rich body of research and the parametric and analogue models as a foundation, the studio for the rest of the semester will develop architectural propositions for the African Trade Zone Observatory (ATZO) an organization located on three sites along Bree Street in the CBD. Operating as trade, data, and transport hub, as well as a public forum, the ATZO's mission is to monitor, collect, research, and publicize data on trading as it occurs in real-time across the continent. Students will develop theses on the utopian or dystopian possibilities of global trade as the studio makes evident it's links to the rise of neo-liberalism, informality, explosion of tax havens, the exploitation of resources, and despoiling of land. Throughout the semester we will confer with various experts on these topics.

**Note: prior knowledge of these tools is not required; but interest in learning how to use them is mandatory!*