

TAOBAO VILLAGES, CHINA, 2019

THE ARMATURES OF A NEW AUTONOMOUS URBANISM

自行城市规划的新架构 | Jason Hilgefort & David Li

The recent emergence of Dispersed Infrastructures frames a moment in time when we can fundamentally reconceive of how we make, fund, and even conceptualize the form of the world around us. The technologies of moving parts which defined the 20th century city—i.e., cars and elevators—reshaped our now Constellated Cities. What then are the spatial implications of these emergent, non-city hubs for digital transactions, photovoltaics, drones, etc? If we as a society no longer require centralized systems and their subsequent governments, what is the role of the spatial practitioner in this emerging reality?

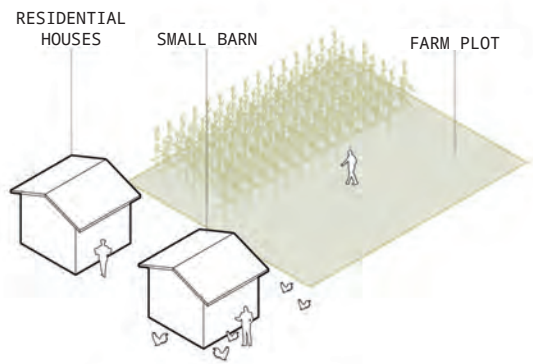
AN AUTONOMOUS URBANISM

Cities began as a simple collection of individuals sharing common elements to each other's benefit. Over time they have slowly evolved to include mega-regional, multimodal, geographically carpeting spaces facilitated by vast infrastructural, capital, and political networks manifested by large, far-reaching governmental and corporate built forms. With the emergence of dispersed infrastructural realities, we stand at a disruptive moment—where the assumed reliance of human habitat on top-down governmental systems and intensely urbanized forms of development is very much in question.

The collective innovations of elements such as mobile phones, self-driving technologies, photovoltaic cells, drones, block chain and AI points toward a myriad of possible shared autonomies. Existing development of a *community* requires assorted pipes, wires, banks and other environmental insertions. But now we can easily obtain energy from the sky, exchange value digitally, move without roads, and much more. These technologies allow for a totally new, and simultaneously retrograde, form of civilization formation. A new form of interdependent individuality is possible.

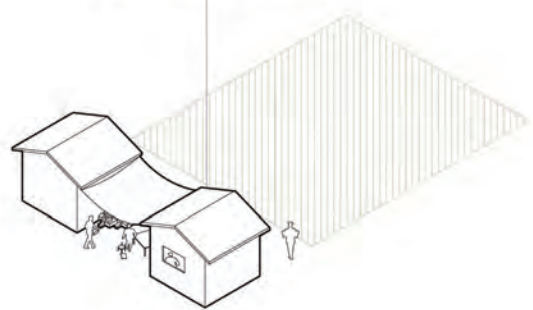
The smart city perspective sees all these societal tools and continues to assume that a top-down system should be employed by larger powers to the benefit of all. Dispersed infrastructures allow for a total recalibration of the collective. Now that our infrastructures can *talk to each other*, an overriding framework

BEFORE
2006



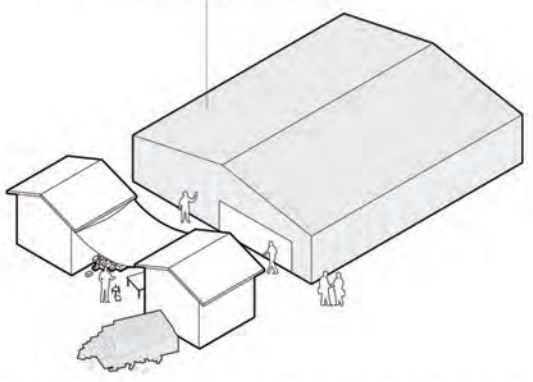
2014

SMALL BARN BEING TRANSFORMED INTO
PRODUCT PRODUCTION AND STORAGE AREA



2016

BUSINESS EXPANDED.
NEW WAREHOUSE OR PRODUCTION FACTORY



is no longer necessary. These tools for an autonomous urbanism can be self-funded, self-managed, and yet all work together. The scale of such imbricated infrastructures allows for stepped funding, evolving phasing and more self-sufficient modes of *urban* development.

OPEN SOURCE VILLAGES

Our current reality of interconnected global capitalism has left the rural lands beyond in pursuit of more urban conceptions. Whether the vacancies of Italy, left-behind villagers in China or the ignored realities of small-town America, the challenges facing the rural have yet to be resolved. But there are indications about models for alternative futures for our rural habitats.

Taobao villages in China point to a future where rural making and craft skills pivot to link to global supply chains and permit the labor realities of the rural to demand the potentials of the urban. Looking at older formal examples such as *Citta Diffusa* outside of Venice, one can see the potential of a constellation of urbanisms linked to global supply chains. Extending upward from Venice and arching to the UK, the so-called *Blue Banana* is a series of smaller cities linked by transport and economic exchanges across Europe (Brunet 1989). Similar urban forms have existed historically in India—Calcutta to Delhi—and are often described with the term *Desakota*, first coined in regard to urban/rural forms seen in Indonesia (McGee 1991).

These forms of Constellation Cities point towards a possible new future for our scattered countryside habitats. The necessity in these places for greater logistical, ecological and economical connections to our new global reality can be seen in Dispersed Infrastructures and the potential resulting Autonomous Urbanisms.

DISPERSED INFRASTRUCTURES

The inventors and industries that designed and released cars and elevators upon our cities last century could not have foreseen the implications of their innovations on our environment and society. The technology companies now developing new forms of markets, movement, waste, and water and energy collection are similarly blind to the extrapolations of their works. However, test sites across the globe form a series of experimentations and case studies where one can document the realities on the ground. These spatial realities can be used to extrapolate lessons for our emergent environments.

The implications of new markets and financial exchanges can be observed in the so-called Taobao villages of China and the mobile banking hubs for M-Pesa in Kenya. The most iconic storage nodes for self-driving vehicles are in Germany, while the first drone port is currently underway in Kigali, Rwanda. The future of water-based microports is perhaps in the ancient but ever-evolving floating fishing villages of Ningde, China. The supply of fresh water from the air is being explored by companies like Watergen in communities in Israel and Morocco. Meanwhile, waterless small-scale toilet technologies are being implemented



SHAJI, 2006



SHAJI, 2015



SHAJI, 2018

in Madagascar. New microgrid systems that mix storage, photovoltaics and small-scale wind energy generation are being tested in the dispersed island communities of the Philippines.

AN E-MERGING EXAMPLE

In China, digitalization brought by the Internet is one of the key drivers of economic reform. While the tremendous growth of e-commerce through Alibaba and Taobao, and the widespread use of WeChat payment, has grabbed global attention, the foundational dynamism driving such growth remains invisible. The tremendous growth of e-commerce in China would not have been possible without the dynamism of villagers to leverage the tools and technologies of digitalization for economic development and prosperity.

Shaji village (沙集镇 *shajizhen*), a small township of 50,000 in the north Jiangsu Province next to the city of Xuzhou, came into focus for Alibaba Research as it analyzed the e-commerce market in China using big data visualization in 2010. Shaji sparkled on the map as a bright dot of e-commerce activity in middle-of-nowhere rural China. The staff of Alibaba Research were puzzled, and their first reaction was to check the accuracy of the source data. The data was accurate, and the team booked the earliest possible flights to travel to this village.

As they arrived in this rural farming village in north Jiangsu, they met people young and old working in front of old computers in their e-commerce shops. These people processed orders and handled customer service from their humble houses. In the backyard of their farmhouses, people worked in makeshift factories producing flat pack furniture, packaging it to be shipped all over China. In the early evening, the villagers carried these packaged goods made in their backyard factories on DIY rickshaws produced from motorcycles, to the town's logistic center, where they awaited pick up for distribution across China.

THE ORIGIN STORY

The origin story of Shaji has a humble beginning. Sun Han, a Shaji native, left the village for school and worked in a coastal area, like most rural youth, in early 2000. Sun returned to Shaji on his parents' request to prepare for marriage in around 2005. While going through rounds of matchmaking, he opened up a small Taobao shop to resell mobile phone accessories sourced from friends he had made in Guangzhou. Once married, Sun took his new bride for a honeymoon in Shanghai where he discovered Ikea and the flat pack furniture that was becoming popular amongst the emerging middle class of China. He acquired a few simple Ikea pieces and brought them back to Shaji for study with two other friends. Working with local carpenters, they made their first version of hacked furniture, photographed it and put it on their Taobao shop. They sold a few in the first week and demand continued to increase. Business was booming. Very soon, they were fixing up their houses and buying new cars and the whole village was curious about how they had made their money. As the business expanded, they recruited villagers to join their operation, and the knowledge of e-commerce and the business of flat pack furniture spread. Their employees and relatives



started to open up their own e-commerce shops. With the low barrier of entry to e-commerce and the simple form of the furniture, the village flourished with rapid multiplication of shops and factories making flat pack furniture to be distributed all across China.

A NEW MODEL

Inspired by what they saw in Shaji, Alibaba Research worked with the Chinese Academy of Social Science (CASS) on a “Shaji model” that summarized the critical drivers of their success (CASS 2011).

1. *Bottom-up model*: unlike typical attempts at bringing e-commerce to rural areas via top-down decisions, e-commerce had been started from the bottom up by the rural residents themselves.

2. *Copy to scale*: the low barrier of entry enabled others to copy the existing business and start their own. The paper called this cell division copying with exponential growth.

3. *E-commerce markets drive industrialization*: unlike the traditional model of industrialization, by offering a considerable amount of cheap labor for the manufacturing of goods for others, the industrialization was driven by the market reality in deciding what kind of tools, equipment and technologies to adopt.

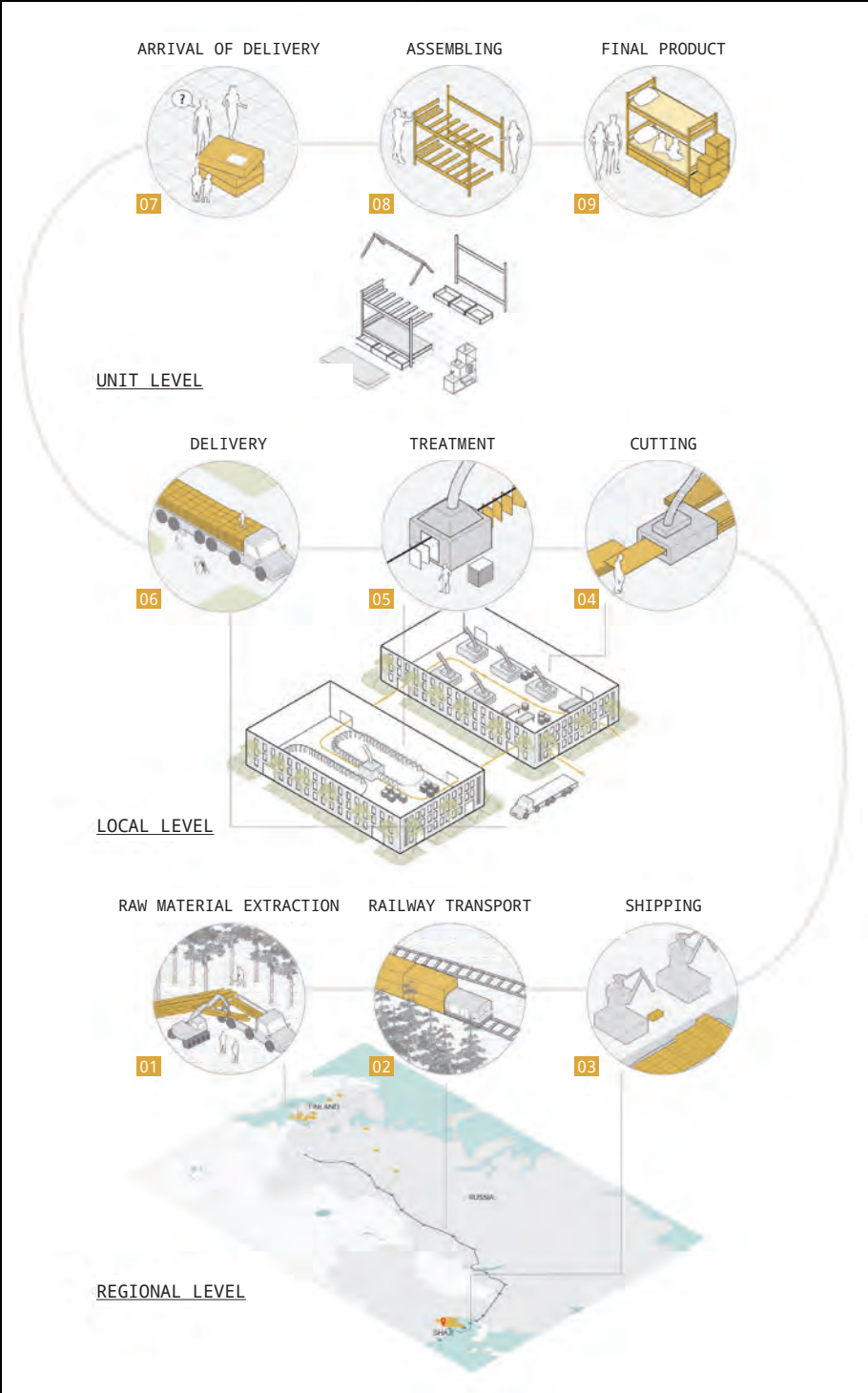
4. *A clear core group who compete and collaborate*: the core group of Shaji e-commerce were new entrepreneurs who were mostly related to each other through family ties. The multiple layers of relationships created a system of competition and collaboration that further expanded the complexity of the business ecosystem and contributed to the growth of diversification and specialization.

5. *“Presence and not interfering” governance*: the government did not try to lead the development policy or direction, and instead focused on building infrastructure such as roads, electricity and telecommunication. Also, the government was responsible for solving problems that arose from the community, such as securing land usage for the factories (changing farmland to industrial land is extremely difficult in rural China).

6. *Proper vertical markets*: the furniture market, with its vast segmentation, enabled the cell division model of scaling to specialize across different segments. Thus, a proper vertical market facilitated the cell division model of scaling in the Shaji model.

THE MASS FLOURISHING OF TAOBAO VILLAGES

The researchers also came up with a definition of *Taobao village* to study the phenomenon of e-commerce driven industrialization and the modernization of rural areas. The *Taobao village* is defined as an administrative area where more than 10% of the population is involved in e-commerce activities, including sales,



BUNK BED SUPPLY CHAIN MAP, SHAJI, CHINA, 2019

customer services, production of goods and logistics that generates more than 10 million RMB annually in e-commerce sales. When the team discovered Shaji in 2010, 37 similar villages were also discovered. As of 2018, there are 2,500 Taobao villages across China which generate hundreds of billions of RMB in revenue. Shaji village itself has grown from one e-commerce shop in 2007 to over 6,000 in 2018 that generate over 10 billion RMB.

While it's easy to read the story of Taobao villages as a poverty alleviation measure, it is, in fact, a "disruptive innovation" (Christensen 2015). The combination of Internet/e-commerce and the use of digital fabrication lowered the cost of the flat pack furniture versus the mass production and warehousing of Ikea, and made them affordable and accessible to the emerging middle class in China. The open collaboration and sharing of the system further brought down the risk and cost of new product development.

Technologies do not bring about change, they are merely tools to facilitate change in the hands of the right people. The innovative people of Shaji and the other Taobao villages quickly adopted new tools to capture opportunities. While the number of Taobao villages has grown tremendously over the past decade, there are also a large number of failed attempts. Technology transfer can bring in some initial economic growth, but it was indigenous innovations, enabled by high dynamism, that led to real sustainable long-term growth.

AFORMAL ARMATURES

Cities have traditionally been the centers of civilization and knowledge, but we are now at a time where one must ask yet again—what is a city? Where does a *city* stop? Cities have always been defined not merely by planners, architects, developers and governments, but often by their moving parts. Le Corbusier famously said that historic cities were made of "curved streets that are a donkey's track" and that the industrial age would allow for "long straight streets for men." If we no longer need roads, power grids, and market halls, and knowledge now flows through the air—what space remains for society? How do we create armatures within the possibilities of this new Autonomous Urbanism?

REFERENCES

- Brunet, Roger, and Jean-Claude Boyer. 1989. *Les Villes "européennes": rapport pour la DATAR, Délégation à l'aménagement du territoire et à l'action régionale*. Paris: Documentation française.
- CASS, and Ali Research. 2011. "“沙集模式”调研报告." Beijing, China: China Academy of Social Sciences.
- Christensen, Clayton M. 2015. *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Reprint. Cambridge, Mass: Harvard Business Review Press.
- McGee, T. G. 1991. "The Emergence of Desakota Regions in Asia: Expanding A Hypothesis." In *The Extended Metropolis: Settlement Transition in Asia*, 3–25. Hawaii: University of Hawaii Press.