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Chapter 1: Localization in the Global

Andrew McDowell, Lucile Ruault, Olivia Fiorilli, Laurent Pordié

In October 2017, a major, multilateral organization convened twenty experts to evaluate proposals for propagating information technology for health or "e-health" worldwide. Funding applications—written by large, international public-private consortiums proposing multi-million-dollar projects to provide health care through digital and electronic technologies—covered the tables. Each project hoped to extrapolate on a successful pilot project in a significant way. Scalability was crucial. The proposals, however, did not take into account the historical, socio-political, cultural or linguistic particularities of the milieu in which each pilot was launched. These were viewed, quite simply, as part of the "local context" that scalable programs would transcend. Social scientists on the panel raised concerns about this assumption. Other members seemed to genuinely care about their perspectives, but their votes were outweighed by the collective scoring of medical doctors, epidemiologists, statisticians, psychologists, economists and administrators. Ultimately, the process of evaluation and scoring did not allow social science and its minority position to balance these more unified disciplines and their numerical strength. This meant that proposals indifferent to the social and cultural complexity of scalability had chances of going through, whatever their potential for success.

While local acceptance was a prime concern in program design, considerations of what or who comprised "the local" remained undertheorized. A project had to show local success at some place, among some people, to get a chance to be replicated and disseminated on a large scale, or in other words become global. In short, it needed to speak to the diverse network of global health intervention sites, fit global actors' priorities, and demonstrate its

empirical success as measured by the medical experts who assessed it. This process begs the question, how did a diverse set of health interventions across the globe's many locals come to be viewed as comparable? How were "locals" knitted together to form a "global," and what happens to local specificity once the global scale becomes thinkable and knowable as a site of interpretive action?

The group's presumed (or pretended) lack of positionality allows it to act as an objective, universal arbiter and evaluator of situated acts and actors. Developing scalable interventions involves a number of iterative translation processes between the local and the global that are central to the field of global health. This chapter examines such processes. Events like these at a conference table in a European capital are ways of imagining the role of particularity across a whole web of other localization processes. The table is among the few nodes of global health that transcend or lack place. Situated at the center of the global health field's processes, the experts at this table set the rules of commensurability or universality that local or situated actors must follow. For instance, the biological scientists frequently thought of the specific site of a pilot program as a laboratory—a place to test a project before standardizing and extending it. Though these actors are at the end of a long chain of translation processes, they are still busy with the processes of localization that make global commensurability possible. As such, we begin our discussion of localization in global health with the global center of evaluation and assessment. Surprisingly, it is in the middle of localization processes not the end of them. Nonetheless, we cannot stay here for long. Attending to practice, health globalization, and the norms of the field direct us to other processes and other locals that must play by the rules set at this table.

Throughout this chapter, we reconsider the local as a process or emergence rather than a place or a thing, but this is not necessarily how global health uses the term. In this chapter, we, first, engage the ways that global health produces and reacts to the existence of spaces

not fully recognizable to its standardizing, universalizing logics by identifying them as "local." We then study how global health, as a field and apparatus, understands, morphs, twists, and adjusts these spaces, at times imposing global health logics, while at others allowing local knowledge to catalyze a recalibration of its epistemological tools. Third, we search out the places where the global fails to take root in the local. Finally, by taking on the local as process and assemblage within the field, we are able to engage one of global health's material and discursive formations.

Grounding Localization

If the "global" in global health aims to build health universality through techniques of knowledge, comparison and intervention on a planetary scale, what remains of the local? That "the local" persists—even as "the global" aims to subsume or supersede it—makes for one of global health's central contradictions. How can "the local," as shorthand for specificity, difference, and particularity, continue to flourish in a field that imagines health and bodies as globally standard or standardizable? The contradiction is good to think with and points to some of the contours of global health as it moves in scalar circulations and interprets the success and failure of its interventions on human populations and health.

The local is a *mirage* of perspective and position. Practices, objects, ideas, and interventions that may be local in one context, are global when moved to another. At the same time, those aspects of the global, which have become ingrained in a particular context can be lived as local. In this way, localization is a process by which factors outside of global health's central tenants or field come to be associated with or inseparable from a particular context.

Locals are global health's boundary objects (Bowker and Star 1999, Huvila 2011). Locals can be hospitals, languages, nation-states, regions, practices or cities. They can also be

cataracts in flows of circulation where a bottleneck or saturation occurs. Indeed, the local, at least in the world formed and framed by global health, comes to be meaningful only in opposition to the global as a discursive space of data, planning, and equivalence, while also being the space in which global agendas play out.

Anthropologists often study the local as a point of friction (Tsing 2005), a site that eludes or overflows global health's epistemological techniques (Petryna 2009, Lock and Nguyen 2018), or a space of *bricolage* and piecing together of globalized resources and community (Livingston 2012, Crane 2013, McKay 2018). Historians, conversely, study the ways in which locals are constituted across time as sites of difference either by the events that transpire there or the effects of larger phenomena on their particularity (Guinzburg 1993). In each case, the local is where action happens, data emerges, cases can be studied and bodies accessed. The local is also a site of miscommunication; islands of care and slippages flourish.

Localization, we have found, is closely linked to experimentality. Experimentality describes a complex set of processes that make people, bodies, and societies available as objects of experimental intervention by creating populations and people which are delimited and comparable (Nguyen 2009). As Fouzieyha Towghi and Kalindi Vora describe experiment: "A signature of modernity, the experiment is a technology of truth making, or in the scientific register producing facts, to test application of 'new' theories through observation. It is a test to demonstrate a known truth, to examine the validity of a hypothesis, or to determine the efficacy and safety of something previously untried" (2014). Experimentality then is the state of being open to processes of truth making, as well as the forms of power that enable and authorize it through iterative knowledge construction; a process that comes through strongly in global health's discourse of failing forward (Rheinberger 1997). Experimentality, however, plays out in situated local practices where, as Adriana Petryna suggests, risks and rewards are not evenly distributed (Petryna 2009). The

particular constellations of forces that play out in these processes of local experimentality identify sites in which novelty can be created and tested, and link people through shared risk and responsibility. Moreover, examining localization in global health in relation to experiment helps to contextualize the relationship between the local and the global. If the local is the site of an experiment, then it must have at least some characteristics of a laboratory, particularly those which allow for experiment. The presumption is, of course, that variables can be accounted for, maybe even controlled, in the laboratory local. This controlling or accounting for variation is one localization of global processes.

Localization processes that animate global health include proving a concept, developing a prototype, building evidence of reaching scale, and comparing two treatments. They also include circumscribing and furnishing the places where people—particularly sick people—might be identified, treated, or missed, and where commensurability might be made, aspired, or frustrated. As such, locals are nodes in a global net, but not all nodes are imagined to be local. The WHO, World Bank, and Bill and Melinda Gates Foundation might be nodes, but they efface their status as locals. They are imagined, instead, as universal arbiters of the knowledge local processes create. They constitute global health's fields of action, but play by different rules. As such, they are both inside and outside global health's constraints of space and money. Local as process thus reveals the rules of global health's game played in the health globalization's arenas, and what particular places and people must do to be recognized as players. As such locals are discursive hubs, sites of circulation, and points of interest for traveling experts who knit together a field of global health from arenas of health globalization. By looking to sites of locality here, we help sketch the boundaries of global health as field and look to the processes that create it. These processes look a lot like those that build the boundaries between the laboratory and the world, but as Hannah Landecker and Sarah Wylie show, the poles of experiment and control are shifting in the 21st century

(Landecker 2013, Wylie 2018). The lab is in the world and the world is in the lab and for global health, with its ethic of action, the whole world has become a space for trial and error (2013). It is now necessary to understand how local processes are global and how global processes are local in order to trace the political, economic, and ethical work of global health.

For our purposes, experimentality and localization come together in global health to produce a moving locus of knowledge, originality, and complexity. In each section, we examine how global health concepts play out locally as they are tested, observed, and applied. Localization generates globally-standardized health, and it remains the starting point and the final frontier in which the unexpected can happen.

Migrating Locals and Evidence for Scalability

In the mid-1950s, the WHO designated genetics as a high priority concern. Barely fifteen years later, the Human Genetics Unit was in crisis. Accused of stagnating, it was slated for closure. Beginning in 1979, consultant Anver Kuliev, a geneticist from the USSR, was charged with assessing genetics' potential role in reaching WHO objectives. He says, Halfdan Mahler "challenged me, as a scientist in genetics, to demonstrate if genetics was really important for public health and the WHO."[1] Together with geneticist John Edwards (Professor of Medical Genetics at Oxford), Kuliev came to the conclusion that focusing on endemic genetic conditions affecting specific populations would be a useful starting point for formulating a new hereditary diseases program. A group of WHO experts proclaimed the management and prevention of thalassemia in Cyprus to be the best example of such a program. In this sense, local knowledge and intervention played key roles in rehabilitating genetics within the WHO.

Prior to this intervention, thalassemia, a recessively inherited blood disorder, posed a severe health threat in Cyprus because of the high frequency of an abnormal globin gene in

the population. In the early 1970s, about 16% of Cypriots carried the thalassemia mutation. This meant a high number of marriages between people who carry but do not express the mutated gene (heterozygotes) and the birth of about one baby with two mutated genes and will have β-thalassemia disorder in every 135 births (Angastiniotis and Hadjiminas 1981). The Cypriot government had recognized thalassemia as a major public health problem since the 1960s, but its national policy in the 1970s focused on growing medical awareness and better standards of treatment. Intensive treatments with blood transfusions and the pharmaceutical removal of iron from the blood were developed to handle the most severe forms of thalassemia, responsible for chronic anemia, slow infant growth, bone deformities and early death. As curative services improved, clinical management of the disorder raised quality of life and life expectancy. Taking into account the rising survival rate, the estimated costs of treatment and need for blood were identified as an important drain on health resources. In 1971, the Cypriot Government sought the support of a WHO adviser, Professor G. Stamatoyiannopoulos, who concurred that continued management of the disorder would be a potentially heavy burden for the community. His report spurred the Ministry of Health to formulate a national prevention program, in 1972, as part of the government's five-year development plan. Beyond the goals of more standardized and effective treatments through special thalassemia outpatient clinics, improved blood transfusion regimens, and blood donation campaigns, etc. (Angastiniotis, Kyriakidou et al. 1986), recommendations emphasized prevention, through public education campaigns and genetic counseling (Cowan 2008). Population screening was enacted in the country from 1973 onward.

Meanwhile, population movements[2] gave this local issue a larger scale. In other words, the needs of "local populations" across the world caught the attention of experts in the Global North, who then dedicated their work to thalassemia and sickle cell disease (hemoglobinopathies), especially in places with considerable Cypriot migration, such as

England. This is best illustrated by the case of patients from the Cypriot community in North London whose treatment needs led the clinical geneticist Bernadette Modell to get involved in thalassemia care delivery, epidemiology, and research. Starting in 1977, she also cared for women traveling from Cyprus to London for prenatal diagnosis. As her interest in the issue grew, she began traveling to Cyprus. There, as a result of the Cypriot anti-anemia association efforts, Modell met the Minister of Health and discussed some of his misconceptions about prevention: "He said that the techniques involved are far too complicated […] And I said to the Minister of Health, 'Well, you know in my laboratory it's run by Cypriots and our patients are all Cypriots. So if we can do it in London, you can do it here!' And he said, 'Fine, I'll send someone for training."[3] The first training in London at the Galton Laboratory was for Michael Angastiniotis, an obstetrician/pediatrician who came to play a leading role in developing the thalassemia program in Cyprus in the 1980s and 1990s. Through knowledge transmission and the use of equipment, Modell strove to replicate her own diagnostic techniques in Cyprus. This process thus represents a "relocation" of tools and expertise.

Concurrently, Robert Williamson, a biologist who specialized in the application of molecular biology to hemoglobin disorders, became another driving force in the dissemination of knowledge. He organized a meeting in Crete in 1978, gathering "young people from the whole Mediterranean area [so as to] open their eyes to [the] future possibilities"[4] of treating thalassemia. Following this meeting, several Italian, Greek, Cypriot, Portuguese, as well as Indian and Iranian physicians (obstetricians, pediatricians, clinicians, biochemists), received grants for training in England on molecular biology and prenatal diagnosis, etc.—sometimes even bringing patients with them. Amongst themselves, Modell and her colleagues called this project of locally necessary, but globally relevant thalassemia treatment the *Club Méditerranée.*[5] The club promoted a global perspective for thalassemia screening, starting from a particular regional local. The construction of an

international network and global health interest in a local issue led to strong links between patients' associations and international experts, the circulation of people seeking prenatal diagnosis or scientific training, and also the propagation of educational, diagnostic, and treatment tools.

The emergence of hemoglobin disorders "in areas where they are not endemic" (Angastiniotis, Modell et al. 1995), such as London, paradoxically pushed experts to turn their attention to the Global South, because they realized that their approach could be effective in the context of a large population struggling with the management of a hemoglobinopathy. Simultaneously, the local situation caught the attention of the small WHO team trying to renew the Human Genetics Unit. A confluence of interests between thalassemia specialists and WHO officers, which materialized in Bernadette Modell's collaboration with Anver Kuliev (individuals whom some interviewees called "the parents of community genetics"), turned Cyprus into a laboratory with the aim of proving the utility of genetics for public health and designing global standards surrounding genetic diagnoses and treatments.

The Cypriot prevention program has changed over the years. In the 1970s, it consisted of public education in order to sensitize the public to the issue. This took the form of mass media reminders, talks in rural community centers, blood donation campaigns, introduction of the topic into school curriculum, and distribution of information booklets in most endemic areas. In the late 1970s, population screening and genetic counseling were introduced. Population screening rested on the selection of target groups to identify carriers. This changed over the years. At first, priority was given to relatives of homozygotes and young single people (girls leaving school, men doing their national service). Then, with the advent of fetal diagnosis in the 1980s,[6] the paradigm shifted to focus on "those with the most immediate risk of producing an affected child—those already pregnant."[7] In 1983, the

Cypriot Christian-Orthodox Church asked couples who sought the church's blessing for engagement to undergo testing for the thalassemia trait to become aware of their carrier status. Even though few couples called off their marriages because of a heterozygosity diagnosis, the advantage of this compulsory test was that reproductive-aged people would be made aware of their carrier status, and could either refrain from having children or, at the least, perform prenatal diagnosis. As Anver Kuliev recalled in an interview:

> [The] thalassemia control program in Cyprus [was] the first national community program for [the] control of hereditary disease, which […] provided the basis for [the] initiation and development of [the] WHO-model approach for community control of congenital disease […] [As we] discussed in detail during the Second Annual Meeting of the WHO Working Group on Community Control of Hereditary Anemias, Nicosia, 28-30 November 1983, […] it was considered to be a unique experience which might be of great value in initiating a control program in developing countries where congenital anaemias represent a major health problem.[8]

Thus, the formulation and implementation of this national policy was meant to be a point of departure for community-based control of "congenital diseases." Beyond its disease-based definition, the concept of "community" was, in this context, similar to population-oriented approaches, with a tacit understanding that the target population shared a certain genetic background and cultural traits.

Other pilot studies on hemoglobinopathies were conducted in Greece, Italy, the UK and the USA (Boyo, Cao et al. 1983). And yet, Cyprus was deemed a model in the struggle for large-scale disease prevention, due to its concentration of traits in one demarcated population. This "local" situation combined the features of a population at risk—i.e. a high

incidence of thalassemia, said to be the second highest after the Maldives—social visibility of this crippling disease, and rising burden of treating homozygous people. It also featured the conditions that made disease controllable—a small and isolated landmass,[9] and a modest population size (about 600,000 people) with a low birth rate, relatively high standards of living, literacy rates, and standards of health care.[10] These features of the local made the population easier "to reach, investigate, and influence" (Angastiniotis and Hadjiminas 1981). As "a small, educated and uniform cultu[ral] community which has inevitably close contact with the homozygous condition," Cypriots were even said to "[respond] well after public and individual counseling."[11] In addition, experts acknowledged the role played by "the collusion between medicine, state and the Church/religion" (Chattoo 2018). Model outlined the latter institution's role in coercing testing. She noted that, "unless you mandate premarital screening, […] it's like everything else! […] Unless you mandate it, it didn't work."[12] But it was mandated, and it did work. Together, these factors made the country a perfect place to launch a local prevention program at a large scale, aiming, ideally, for the eradication of the disease.

According to Kuliev, the Cypriot success in eradicating thalassemia impacted the WHO's priorities as a whole: "having all the stuff, we formulated for Halfdan Mahler […] the program of community control of thalassemia in Cyprus. [He] was impressed by the technique, and he decided to re-establish the programme of genetics." Moreover, this local "archetype" (Beaudevin 2010, 300) directly inspired the community approach advocated by the WHO expert group on human genetics. Kuliev explained:

> You could cover the whole population of Cyprus, which was half a million. […] [F]or this reason, we thought about the approach for community control. […] So, at that point, we thought that it was very easy to overcome and investigate the whole community. And to use thalassemia as an example to

> demonstrate how genetics could work. […] The approach was specifically for Cyprus […] [I]n Cyprus, all the marriages go in the Church, the Church would be requested to ask for the certificate of testing of thalassemia genes. […] And because [of that], all the population was under control and all of them went to the screening, to the Thalassemia center in Cyprus, which was giving them certificates[13]

The advisory group's early works on the community control of hereditary anemia, established at WHO in 1981, mostly emerged from this success story. For instance, two pillars of the community approach—sensitization and population involvement in WHO experts' recommendations—were rooted in the emphasis, within the Cypriot program, on the local potential for health information diffusion and the promotion of "community involvement."[14]

In May 1983, a Cypriot delegation reported at the World Health Assembly that their country had "become the first […] [to be] at the edge of the eradication of thalassemia," which sounded like "a miracle" to Kuliev. Later, still predicated on the Cypriot testing ground, the head of the Human Genetics Program "[announced] to the whole world that thalassemia can be prevented," in an eloquent article in *World Health Forum*. (Kuliev 1986) Such a visibly effective program of eradication thus provided an ideal basis for continuing to develop preventative strategies and tools, and to expand interest in genetic medicine.

In the early 1980s, Kuliev continually supported the Archbishop Makarios III Hospital's Thalassaemia Centre in its application for a WHO technical services agreement to the construction global standards. For instance, he argued in 1984 that "operational research […] under way in the Institution […] might be of considerable relevance to the WHO Hereditary Diseases Program," notably "on community knowledge and attitudes to the

control of hereditary disease."[15] Throughout the decade, the center received WHO grants to undertake further investigation into "community knowledge and attitude to the control of hereditary diseases" and to "assist in training for population screening and fetal diagnosis of hereditary anemia." The Cypriot experience therefore remained a convenient testing ground for eradicating hereditary disorders. Indeed, beyond thalassemia management, the Cypriot model gathered momentum to the point of providing the initial protocol for tackling hemoglobin disorders and even "other genetic disorders on a global basis"[16].

However, the idea that a local "laboratory" could incubate global efforts for the control of genetic disorders presumed the transferability of the Cypriot program. WHO experts kept emphasizing the country's community approach as one that should be generalized and incorporated into the health services (preferably the primary care systems) of developing countries with high prevalence of thalassemia (the Mediterranean and South East Asia), and hemoglobin disorders more broadly. In 1990, the next head of the WHO Hereditary Disease Program, Victor Boulyjenkov, still assumed that the Cypriot "thalassemia control program deserves the recognition of serving as a model for other such programs which could be established in other countries in the EMRO region."[17] More than a test site, "the local" appeared to be applicable to larger populations, and as such was "advisable for all countries where [hemoglobinopathies] are endemic." (Boyo, Cao et al. 1983)

Simultaneously, Cyprus remained a very special case. Awareness of its limited transferability still stands out in Kuliev's account:

> The idea was community [disease] control. […] Because our idea was that you cannot control the conditions without covering the whole community, [when] you have identified everybody who is in the community. And this approach was not possible in bigger countries. Absolutely impossible in the United States for example, where there is not any community control procedure. It's only family-

based. So, […] it was possible only in some social [health systems] like Greece, UK, France, and so on. But at the same time, in big countries it is impossible to do, as there was not [a] filter, like the Church.[18]

Such a dilemma, which is barely perceptible in the debates surrounding community genetics, shows that Cyprus was somehow an illusion, a local constructed by fantasies of an immobile, docile community that extended only as far as social bonds of religions and marriage. To what extent, then, would experimenting at a small scale bear fruit at a global level? Bypassing that question, WHO experts continued to use the Cypriot program as a hybrid reference, that is to say both a matchless case and a replicable model, fostering global standards. It was a local par excellence.

The Local as Site of Innovation

In the late 1980s, tuberculosis (TB)—a life-threatening, but treatable, airborne, infectious disease—re-entered universalized health's sphere of concern. Global health's strategies, values, and epistemics applied particularly well to the disease. Consequently, the globalization of an already transnational disease involved simultaneous processes of localization and delocalization. To study these processes, we examine two local, pilot projects for what would, by 1997, become a global TB intervention. In doing so, we consider the institutions, people, and practices that connected locals in a nascent global web. For instance, laboratories require webs of connectivity to produce knowledge and science relies on networks of comparability (Shapin and Schaffer 1985). We consider transformations necessary to move data, practice, and ideas from a local laboratory in Tanzania to another in India. Such movement involved standardization and localizations of communication, comparability, intelligibility, portability and mutability. The new forms of exchange between

locals are one effect of an imaged global scale of health on particular practices and data. They also create and reshape networks.

The Tanzanian and Indian projects were nodes in 1990s postcolonial networks of TB expertise but by the turn of the millennia, the pilots had transformed those very networks of knowledge. The first project, implemented in Tanzania by the International Union Against TB and Lung Disease, elaborated a novel and draconian approach to TB treatment at a national scale (National Tuberculosis and Leprosy Control Unit 1987). The project used a standardized diagnostic process and treatment regimen overseen by healthcare workers rather than patients to transcend the local as clinic, nation, and poverty.[19] The second project, run in a TB clinic in Mumbai, encouraged physicians and technocrats to implement the Tanzanian protocol, and simultaneously transformed the health system and Indian TB science (Sarin and Dey 1995). Taken together the two projects, or forms of the local, elaborate global health's local laboratories, and demonstrate the ways in which objects and practices accrue a sense of being local through practice, use, and remembering.

These locals, however, were influenced by changes in global institutions like the WHO and the World Bank. In a situation akin to the Human Genetics Unit, the WHO's Geneva-based TB Unit struggled withered the 1980s (McMillen 2015). Despite the introduction of TB treatment in the 1940s TB rates seemed to have increased or stagnated in countries throughout the developing world. There was—according to the WHO's 1993 declaration of TB as a global emergency—little interest or capacity to manage the disease outside of Europe and North America (World Health Organization Global Tuberculosis Programme 1994). TB treatment at a global scale existed only as pharmaceutical aspiration. Even the TB Unit's two staff members focused on drug discovery. Aside from the fiscally struggling International Union Against Tuberculosis, TB epidemiology and control were the problems of nation-states and bilateral cooperative agreements, but not global institutions.

This changed in the late 1980s, when Hiroshi Nakajima became the WHO's Director General. In 1989 he appointed Arata Kochi, a Japanese compatriot, to lead the TB unit. As Kochi settled in, he published articles outlining the need for a global TB control strategy and uniform tools to assess TB programs (Kochi 1990-91, Sudre, Ten Dam et al. 1992, Raviglione, Snider et al. 1995). The WHO and its officers had never advocated for such a global standardization before. Kochi hired a young Italian physician fresh out of the Harvard School of Public Health, where he was friends with Chris Murray. The recruit began increasing the WHO's presence in local TB treatment by providing technical assistance. Ultimately, he led a team that transformed one local program, then a cluster of replications, and then created a globalized paradigm. In an interview he explained:

> I wrote a protocol based on what I had done in Italy and in Afghanistan, and what I had learned at Harvard. Kochi read it and it is lucky that he did not fire me. Instead he said, "Well, what if we start with a new protocol. We can write it by learning what the Union is doing in Tanzania and Malawi." So, we went to Malawi for several days, and Karel Styblo was there. So were several others who had run the program and we talked it out for several days and we came up with a protocol for the WHO. We started by focusing on what Karel had done in Tanzania. I carried my copy of the "Manual of the National Tuberculosis/Leprosy Program in Tanzania" to Afghanistan even before the meeting, and I used it whenever I had a doubt. So, we sat in Malawi and we discussed the forms they used, and the kinds of diagnosis, and how to do observation and everything. And we transformed it directly--with the help of two women from the CDC who know how to do these things--into a set of training modules that we could distribute to countries.[20]

Thus, the group extrapolated a global strategy from a local national program and its expert Karel Styblo. Styblo, as much as the WHO actors, facilitated the globalization of the Tanzanian experiment. He insisted on running a local intervention of drugs known to be effective as if it was a drug trial. He wanted to show quantifiably that his combination of diagnosis, pharmaceuticals, and patient control could cure a high rate of those enrolled. One prerequisite for this outcome was that he enrolled only patients whom he could prove to have TB through sputum-smear microscopy. By enrolling only the verifiably infected, he could use laboratory evidence to show a change of state among patients' smears, from the demonstrated presence to absences of tuberculosis bacilli. By proving the efficacy of individual cure, Styblo hoped to avoid the need for a population-level effect. Instead of pointing to lower rates of TB throughout the population, he could show the effects of a treatment regimen followed to the letter. Styblo used this careful data collection, and analytic process, in a particular place and population to make claims about planetary possibilities, just as experimental evidence is used to make arguments about life outside the lab. Despite several years of lobbying by the Union, it was only when Styblo had amassed enough evidence of his project's potential that the WHO and World Bank took interest.

The team then transformed the project from local to global by using it as a pattern for standardizing tools and training. First, they began making Styblo's Tanzanian model portable by creating training materials. The WHO published these training modules as global knowledge, with no specific connection to Tanzania. By erasing the place in which they were created, the training modules transformed what was once an intervention into a local into a context-independent experiment that was the basis of a globally portable health regime. Nonetheless, building a global strategy from this particular local was always already global since the Tanzanian program was originally implemented by another global institution—the International Union Against TB and Lung Disease—utilizing the colonial health system's

material and knowledge infrastructure (Farmer 2005, Street 2014, McMillen 2015, Packard 2016).

Laboratories are full of training manuals like those created in Tanzanian, and manuals standardize laboratory practices. These texts provide details about how to stabilize and manipulated objects in order to understand what may happen when a new regimen, tool, or technique is introduced. They also provide a format for inscription techniques (tables, calculi, and reporting sheets) that can be standardized across a larger scientific public to make health global (Latour and Woolgar 1979, Shapin and Schaffer 1985, Haraway 1997). Manuals, inscription techniques, training, and standardized treatment protocols facilitate the sanitization of a local, but also bringing it into scalar processes of comparison and accounting, as Styblo's work prefigured. Nonetheless, attempts to experimentalize the local do not always go smoothly. For instance, when the Tanzania protocol and training materials came to India, they were received as anything but objective and useful.

India had long been a site in which to test TB drugs, both because of medical expertise and bioavailability. Managing and documenting this experimentation was a key role of India's TB institutions. Scientists in these institutes carefully monitored field sites and collected long-term epidemiological statistics about them so that the effects of new ways of managing TB could be traced and operations research conducted (Jagota 2000). These projects were led and implemented by Indians from the 1960s until the 1990s, when a new set of TB pilot sites were established to help work out the best ways to organize care and help avoid some of the issues that might occur after scale-up. In late 1992, Indian TB experts suggested that new TB pilots to ready India for a World Bank loan should be run in the existing experimental areas near the three important institutes in Agra, Bangalore, and Chennai. These plans were scrapped by early 1993, however, after an initial review determined that the proposed pilots were too similar to India's existing treatments and

incommensurable with the Tanzania project. When finally initiated ten months later, the new pilots would be monitored directly by the Ministry of Health with support from the WHO and frequent appraisal visits by the World Bank. As such they would need to be in cities and rural areas that were far both from these existing TB institutes and close to routes of international expert circulation. Moreover, in order to predict the projects' outcomes at a national scale "if maximal inputs were given," sites would need to be in those places where the primary healthcare system functioned well. Thus, global flows and burgeoning asymmetries in expertise worked to limit sites in which the local could be meaningful.

Mumbai's municipal corporation hosted one of these pilots. In a rather stark inversion of the local as an unpredictable place with factors like language, culture, community, and infrastructure that make it unamenable to global health, this local was chosen precisely because it was more open to global health intervention. Its medical staff and bureaucracy were largely Anglophone and its role as a major economic hub made gave it a privileged place in national infrastructures. This local was keyed even into national resources and could be modified by adjusting existing infrastructural settings as needed. One of the pilot administrators linked the kinds of resources provided by the state to particular locals and to a form of experimentation that might predict the future. He said:

> You know we picked those areas where the health system was stronger. Mumbai, Gujarat, Delhi, etc because we knew that all the necessary resources could be there. We really wanted to see what it could do when the program in India was given the very best inputs. Besides when you do something, you want to do it where it is a best-case scenario, so that you can argue for more resources by saying, 'Look if we put in maximal resources this is the output we will get.' That is how you convince people to change.[21]

The Mumbai clinic could mediate the fragility of infrastructures, and extra resources could be given, he suggested, to "see what would happen if everything worked well." This way of identifying a particular place as manageable meant that its connectivities could be modulated and its health resources, particularly those like staff, raw material, and pharmaceuticals that rarely functioned at the same time, could be concentrated. The test here was not of the Indian context, but of efficacy in a hypothetically well-functioning Indian health system. The local is a space in which new tasks are measured for their operability rather than population-level effects. Interventions here can occur so as to reveal what may be possible at the global, international, and epidemiological levels. The idea that a particular outcome in a single "local," if given optimal resources, can predict the future of an intervention at larger scale, makes for the local as a part of a mosaicked global which is known through specific versions of the local as well as international organizations. The local is a laboratory and an advertisement.

The idea that these locals are controlled and known, however, may suggest a too easy identification between a local and a lab. The local, particularly those local pilot studies that were to reveal the interaction of global priorities and particularly Indian social and spatial configurations, were simultaneously clinics, neighborhoods, train stations, health posts, and social relations. They were the locus of activity, but global health's TB intervention was not the only activity occurring. The pilots were not even the only TB-related activity in these spaces. As one of Mumbai's pilot physicians explained:

> In those days, my clinic served all of the north west of Mumbai from the Mithi River to the Northern boundary of the city and they came to Mumbai and asked to start the program in one of the areas. They chose the ward that the clinic was in and the health posts near it to implement the project. This was great. We could focus more easily on implementation because it was nearby, but still, I

> was the only doctor on staff and still I had to see all the patients from our catchment area. That meant that maybe only one in ten of my patients was from the project and I had to pick which treatments to give the project ones while also using the only treatment available on the non-project ones. At times it was a little delicate[22].

This was not her only difficulty. She recalled two other serious challenges. The first was the difficulty posed by the inscription devices that she now had to use to document local progress.

> I was terrible at it. Everyone knew when it came near the time to do the monthly reports. I'm not very good at maths and we would have to go through the register for each patient and I had to know what was happening because they would ask. They would see the report and say that two patients were missing and ask what happened to them so I had to be ready. My husband he would do all the maths and the tables but I had to know what information to put in.

The local, a month of "running up and down chasing patients" had to be fit in a table that could circulate from Delhi to Geneva to Washington.

The inscription of local action into a global traveling text was a monthly hurdle, but the pilot physician's colleagues were even more important local challenges. "No one thought it would work. They thought it was not going to be effective with Indian patients. They said it was developed abroad and would never be acceptable to our patients. I said I did not know, but was going to try it." Indeed, Indian physicians from the public system, medical colleges, and even the health bureaucracy criticized the Tanzania protocol, saying that it was from

outside of India and would not be suited for India's particularities. They hoped to stay with the older, more flexible program developed in India in the 1960s. What was local in Tanzania was viewed in India as global, "WHO," and foreign.

Indeed, the work of the pilots and of WHO's staff in India was to make the protocol developed elsewhere work locally. They were to build standardized projects that could be shown to itinerant experts. These pilots were like Timothy Choy's acts of comparison in which new evidence is placed in front of an expanded, expert public (2011). Though we asked each pilot organizer if they had done anything to tailor the project to their context, none could recall doing so.

To make international protocols acceptable to the local, WHO actors looked to the past and to India's TB institutions. They unearthed publications from the 1950s and 1960s, to argue that the new protocol did not indeed come from outside, but rather was based on studies conducted in India. This project led an anthology of Indian science that supported the DOTS model compiled by Tom Frieden—the WHO's technical officer for DOTS oversight, who was stationed in India starting in 1994, and would later become head of the US CDC—and called the "Annotated Bibliography of DOTS,." Using several selective reading strategies, the WHO found a way to make Indian science fit with the Tanzanian protocol and argue that the global program was indeed based on Indian science. This historical reconstruction was so effective that many within India's TB milieu were convinced that the new project was simply a reformulation of that old, local project. One of the implementers tasked with convincing skeptical Indian doctors remembered how useful localizing the origins of DOTS to India was. He said, "We showed them studies that had been conducted in Chennai. They were Indian studies and the science was Indian, so it was an Indian program that the WHO was implementing." These processes of remembering allowed proponents of a

global program to suggest that it was local and Indian even though it had been elaborated on the other side of the Indian ocean.

These two projects are both localized and standardized to link scales and allow for particular epistemological games to play out. Just as a laboratory is still within the world, and survives through traffic to and from the world of business, politics, and labor (Latour and Woolgar 1979), local health interventions remain within the global. However, like the controlled space of the laboratory, the local's relations to the global in global health is mediated by imagining, knowing and controlling "variables." These translations or mediations blur the lines between aspiration and experiment. They create the local as a controlled environment in which to test particular global experimental objects like human behavior or pharmaceuticals, while adjusting for variables like finances, history, and microbiology (Rheinberger 1997). These locals are sites where variables and people can be documented, at times controlled, and eventually reduced to the manageable; places where global strategies can be developed, tested, incubated, and monitored before entering the world. At the same time, the local exceeds this experimental paradigm; it is a site of complication and lack of fit (Amrith 2006). Indeed, what localizes a place is a set of factors that reveal connection to global similarities, dissimilarities, or imagined futures. These contexts come together in contemporary global public health parlance as a "setting."

SkyCare and the Virtual Global

SkyCare is an erstwhile e-health intervention like those covering the European table. A chain of e-health franchises in the Indian state of Uttar Pradesh, Skycare incorporated global discourses of social entrepreneurship, transnational pharmaceutical and technological flows, satellite communications infrastructure, and ideas of the market as an effective producer of health. Uttar Pradesh is considered one of global health's most challenging

"settings." The SkyCare franchise is a stunning example of the localization of global ideas. Franchises like McDonalds have been key to research on localization and globalization because they show how the local is created by unique intersections of global ideas (Watson 2006). Like McDonalds, the SkyCare franchise tapped into global health's core concepts: markets, technology, pharmaceuticals, quality of care, and even a revolving drug fund, while accounting for local health practices.

SkyCare's designers, aptly named World Health Partners, hoped to implement standardized biomedical techniques in a setting where the state-run public health system has historically struggled. They develop a project to connect Uttar Pradesh-based patients to medical experts in Delhi. Local franchisee practitioners, most of whom practiced medicine without training, referred patients to these experts via a "sky clinic"—a telemedicine system located in a franchisee's clinic. Patients were connected to World Health Partners' center by video call to be triaged and treated by physicians there. Patients could buy medicine from the franchisee's Sky Pharmacy or be referred to accredited hospitals nearby. The profits from pharmaceutical sales and consultation fees were to pay the local clinic's overhead and the telemedicine center's maintenance (Lo 2011, Ravindran 2011). A description of the project in the Bulletin of the World Health Organization portrayed SkyCare's franchise model as an eminently standardizable, self-sustaining, and mobile intervention on the front lines of global health. Its authors write:

> "The aim is to improve a socially desirable outcome, such as health, while generating sufficient revenue to be self-sustaining. In social franchising, a franchisor offers a standardized, branded set of products of services through franchisees who pay a subscription fee to join the franchisor's network. Franchisees, who are typically existing local providers, in turn, receive training and follow service delivery protocols established by the franchisor" (Mohanan, Giardili et al. 2017, 343).

The system seemed to work well. In 2011, the Gates Foundation was excited to replicate the project in neighboring Bihar. SkyCare, its proponents argued, would help to standardize Bihar's variegated and corrupt medical landscape by training physicians to think in terms of protocolled medicine and by habituating patients to expect a high quality of care (Mohanan, Giardili et al. 2017). At the same time, it would address the state's discouraging health indicators without significant infrastructural inputs. In return for approximately 25 million dollars, the Gates Foundation charged SkyCare with improving diagnosis and treatment of four conditions at the core of global health: tuberculosis, visceral leishmaniosis, childhood pneumonia, and diarrhea. The collaboration hoped to provide care in over half of Bihar and to make a dent in epidemiological indicators for these locally endemic diseases in three years (World Health Partners nd).[23]

They reasoned that Bihar and Uttar Pradesh, with broadly similar linguistic, socioeconomic, and cultural practices, would be commensurable. Furthermore, if the system could work in particularly difficult contexts like Uttar Pradesh and Bihar, it could work anywhere on earth. World Health Partners aimed to build its parallel social profit system just a few hundred kilometers away from its initial location and practitioners reacted with excitement, several thousand franchised as SkyCare contact points (World Health Partners nd). Those who bought in were excited to have access to cutting-edge communication technology and the incentives they were promised. There was a catch, however. To become a center in which telemedicine services were located, the physician would need to pay a franchise fee of $500, invest $1000 in equipment, and pay a one-time $17 access fee (Wharton Business School 2014, Mohanan, Giardili et al. 2017). Franchisee practitioners then received training on treatment protocols and how to use the system.

Business schools like Warton and the Indian School of Business wrote case studies to help inform other social entrepreneurs, and the project won several international awards (Chavali 2011, Chen 2016). A Wharton publication and its management experts lauded the program as follows:

> Shane Walker, associate director, consumer medical devices & digital health at IHS, a global information company providing analysis and insights into industries such as health care, believes that WHP has devised a strong model for delivering health care to rural populations. Walker, who has been tracking the WHP model closely, says: 'Broadband connectivity issues are being circumvented with cellphones; last-mile supply challenges are being addressed by LMOs; reinforcement of quality standards and monitoring patient adherence is being done through mobile phone apps. I find it really interesting that WHP's model is harnessing indigenous informal health providers as village-level franchisees. Fostering entrepreneurship is a good way to achieve sustainability without a reliance on public sector funds. Their approach of integrating preventive care with curative health care services is also forward-thinking.' (Wharton Business School 2014)

As the "forward-thinking" World Health Partners expanded the project across contexts, they made changes to franchise terms to increase standardization. World Health Partners reported that "Stricter enforcement of norms and standards have been institutionalized to increase adherence to policies and achieve greater credibility" (World Health Partners nd, 3). The same document goes on to say that patients, physicians, and infrastructures resisted their efforts to standardize, "A cultural challenge is the promotion of long-term behavioral changes that reduce the target population's dependence on ineffective

traditional methods of treatment, especially with regard to diarrhea and pneumonia. An operational challenge has been working with lower levels of technology infrastructure than anticipated" (World Health Partners nd, 4). These were issues of the local or "culture," infrastructure, physician behavior, and scaling up.

After three years, the project was only able to reach about 6% of the clinics in their catchment area (Mohanan, Babiarz et al. 2016). Local physicians with good reputations did not need the branding or access to expertise in Delhi via telemedicine that SkyCare provided. They were less willing to pay the high franchise fee to access the technology and technology-mediated expertise that might undercut their own. Conversely practitioners who struggled to attract patients were often more interested in training on simple medical protocols.[24]

By the end of the project, a group of international researchers, who specialized in the evaluation of large programs like this one, found that the project had had no effect on childhood diarrhea or pneumonia care among franchisees, let alone an epidemiological effect (Mohanan, Giardili et al. 2017). Franchisees too began to revolt. World Health Partners' franchise agreement required that participating physicians send a portion of their consultation fees to the central hub, and local doctors felt that they were given little in return. Delhi, though near Uttar Pradesh, was too far for Bihari patients to travel. By January 2014, most of India's global health players had decided that the project was a massive failure due to an inability to get local buy in and provide a service that was of value at the ground level. Some of the project's expatriate global health staff left or were asked to leave while World Health Partners doubled down on its next project with the Gates Foundation in hopes of putting the "SkyCare fiasco" behind it.

The meteoric rise and fall of SkyCare outlines three aspects of localization. First, localization is at times a translation of global health ideas into situated practices, i.e. the making of a franchise, revolving drug funds, digitalization and pharmaceuticalization, and

efficiency. Second, localization is the translation of global health ideas to manage existing practices and respond to local ways of dealing with disease. Third, localization is a movement of practices from one place to another, i.e. circulating experts and technologies through flows to reach a resting point somewhere. Together SkyCare's three facets of localization reveal that localization occurs in concert with the kinds of globalization that knit together global health. At the same time the global imagination of the local that shaped SkyCare and the way in which global nodes reconstruct local processes reveals localization in texts and trans-national institutions.

Community: The Discursive Local

The local of global health is not only a space, but also refers to the people inhabiting it. The concept of "community" is a widespread but particular iteration of the idea of people inhabiting a local. Experts so frequently imagined the local as a community, that the two words are nearly synonymous. For instance, development expert and WHO consultant Peter Oakley uses the two words interchangeably in one of the founding texts on community participation in health and development (Oakley 1989). However, this is not always the case. A community need not necessarily occupy a specific geographical unit, and, conversely, a group of people who live in the same area does not always compose a community. In this section, we tackle community as a specific iteration of the local by following "community participation in health's" conceptual trajectory from Alma-Ata through the 1990s, when "participation" became a buzzword. We argue that it was through the institutionalization of community participation that "the local" as imaginary progressively became an element of global health and development.

The 1978 WHO/Unicef Alma-Ata conference launched the primary health care strategy. The strategy developed at the conference officially aimed at making "health care[,]

based on practical[,] scientifically sound and socially acceptable methods and technology," accessible to "individuals and families in the community through their full participation and at a cost that the community and country can afford" (The Director General of the World Health Organization and The Executive Director of the United Nations Children's Fund 1978). Clearly, community participation was one of the key tenets of the strategy. The Alma-Ata Declaration called on governments to "encourage and ensure full community participation through the effective propagation of relevant information, increased literacy, and the development of the necessary institutional arrangements through which individuals, families, and communities can assume responsibility for their health" (WHO 1978).

The concept of community participation emphasized the idea that communities should be actively involved in the identification of their own health needs, as well as in the planning and implementation of the responses to those needs. This idea had surfaced in development discourse well before Alma-Ata, with the emergence in the 1950s of community development, an oft-cited antecedent of community participation in health. But in the 1970s, community participation resonated with a whole set of new ideas: the postcolonial rejection of vertical programs; the Third World critique of top-down international health and development approaches; the emphasis on self-reliance—propagated by the New International Economic Order; the critique of biomedicine and medical authority; and the interest in non-professional health knowledge and lay perspectives on health and disease (Packard 2016). Community participation was also in line with Alma-Ata's emphasis on developing local strategies to promote health for all, which was embedded in the concept of "acceptable technologies." Community participation in Alma-Ata encapsulated the idea that the local (understood as an alternative to imperial, Western, high tech and costly) had to be taken into account in health development, and that this could only happen if communities were allowed to have a say in the determination of health priorities and the design of

responses. As a principle of health development, community participation also resonated with a form of political "triage" of health priorities prevalent in the 1970s.

In the decades following the Alma-Ata conference, the WHO actively promoted community participation in various ways. First, the organization endorsed exchanges between member states on this subject. An example of this is the interregional workshop held in Brioni, Yugoslavia, in 1985, to discuss the progress and limits of the implementation of community participation. Second, through the 1980s and 1990s, the WHO promoted research that aimed at defining and systematizing the concept of community participation, creating metrics to measure it and identify its correlates in order to facilitate implementation and to make it more "effective" (Agudelo 1983, Rifkin, Muller et al. 1988).[25] In 1989, development expert Peter Oakley was commissioned to write a book that summarized critical issues in the implementation of "community involvement in health"—a formula WHO documents used alongside "community participation"—based on the results of the Brioni workshop (Oakley 1989). Subsequently the WHO and UNICEF commissioned planning expert Susan Rifkin to research factors that facilitated participation in maternal care, childcare, and family planning (Rifkin 1990). In 1989, the Study Group on Community Involvement in Health Development was created to design recommendations and methodologies to implement and evaluate community participation. In all of these projects, community was defined as people living in geographical proximity—despite the variability in size from a cluster of houses to an entire nation; community was a proxy for the local.

The local as community could be modeled through standardized methodologies of intervention. Indeed, between the end of the 1980s and the beginning of the 1990s, a growing amount of research sustained the publication of a number of guidelines for the standardized implementation and assessment of community participation. The proliferation of these new

global guidelines testify to the progressive emergence of what Lynn Morgan has called an "overly technocratic view of participation" (Morgan 2001).

In WHO documents and guidelines, the concept of community participation is vast and includes a variety of approaches. For instance, in her WHO-sponsored book on community participation, Rifkin lists at least five ranging from passive to active participation. (1990). Similarly, in his seminal publication on community involvement in health development, Oakley situates participation along a scale that goes from "participation as a means" for achieving predetermined health objectives to participation "as an end" in and of itself (1989).

Despite recognizing that these approaches were profoundly different, in the 1980s, in the abovementioned publications, the WHO acknowledged all of them—including the more "utilitarian"—as forms of community participation, and thus intrinsically valuable. This legitimacy was further reinforced by the way the WHO framed the objectives of community participation. Indeed, in its documents the WHO framed the objectives of community participation as stressing programs' efficiency and effectiveness and ensuring community self-reliance, including economic self-reliance. Rather, it stressed the idea that community participation would lead to health programs' efficiency and effectiveness and ensure community self-reliance, including economic self-reliance. For instance, the WHO's Study Group on Community Involvement in Health Development listed the advantages of participation as follows: better coverage of services and development projects; improved efficiency and effectiveness of services; better equity among the members of the community; and self-reliance, with people taking responsibility for their health (World Health Organization 1991, 5). This was echoed in WHO-sponsored methodological guidelines for assessing and measuring community participation, which ranked resource mobilization in and

by the community, through fees or other methods, as indicators of good participation (Rifkin, Muller et al. 1988).

In the wake of structural adjustment programs in the late 1980s, community participation could also become a mechanism for complying with the imperative of "cost-effectiveness" insisted upon in the terms for loans provided by international institutions. Taking the mounting scarcity of public resources after 1985 into account, the WHO actually proposed community participation as a means for improving efficiency and cost-effectiveness despite budgetary constraints.[26] In particular, the WHO's plans for funding primary health care strategy featured *community funding*, along with users' fees and private insurance as *alternative sources of finance*. More decisively, the technical discussion on funding national health-for-all programs, held during the 40th World Health Assembly in 1987, explicitly proposed community involvement in health development and the decentralization of decision-making as tenets of a strategy to respond to increasing budgetary constraints and to maximize effectiveness.[27] Reframing community participation as a tool for facing budgetary constraints is but one example of the way the WHO tried to strategically adapt to a changing context—in this case the ascendance of austerity policies—while maintaining its priorities (Chorev 2012). It is worth noting, however, that the acceptance of the logic of budgetary constraints and cost-recovery was only one phase of this process of strategic adaptation.[28]

In resonance with these overarching discourses, health policy makers often interpreted community participation as meaning that local communities contributed labor, material, and financial resources to the implementation of health measures whose objectives were decided by experts and bureaucrats. This perspective was not unknown to WHO leaders in the field. A WHO report on primary health care implementation issued sixteen years after Alma-Ata explained, "while there is a general agreement on the importance of community participation in health development […] studies carried out in all WHO Regions show that passive

participation, in which the public utilizes the health services and contributes money, materials, and labor, is fairly widespread. Yet active community involvement, in terms of the planning and management of health activities, is still uncommon" (Tarimo, Webster et al. 1994, 20).

Indeed, in the 1990s, in a context marked by mounting critiques of structural adjustments, authoritarian initiatives like population control, and "old-style development" (Connelly 2008, Chorev 2012), "community participation" met growing success in international health and development discourse and became a buzzword (Cooke and Kothari 2001, Leal 2010). It was enthusiastically embraced by organizations such as the OECD, UNICEF and the World Bank (Kahssay and Oakley 1999). Indeed, at this time community participation as self-reliance resonated with the ascendance of neoliberalism as a style of governance focusing on individuals, costs and benefits. It is in this decade that the WHO proposed, "supporting the empowerment of communities for health development" as one of the key elements of community participation (World Health Organization 1991, 9). It is worth noting that in the 1990s mainstream development and health experts co-opted the concept of empowerment, which was previously associated with alternative approaches to development, and emptied it of its critical meaning (Al Dahdah 2017). In the 1990s, the new mantra was that empowering individuals—in particular women—and communities was the best way to help them autonomously fulfill their needs and become active contributors to economic development. As many authors have remarked, empowerment became a buzzword in the development jargon of the 1990s because it encapsulated neoliberal critiques of welfare and "dependence," as well as discourses of "human capital enhancement" (Sharma 2008, Baqué and Biewer 2013, Murphy 2017). The association of community participation with empowerment in the WHO discourse could easily be articulated within all of these ideas.

The trajectory of community participation from Alma-Ata through the 1990s provides interesting insights into the place of localization in the emergence of global health. The concept of community participation emerged in the 1970s—a period conventionally framed as preceding the era of global health—from the idea that the local should count in health planning and that local people's voice should be represented in decision making. Nevertheless, while making its way into health governance discourse, community participation was progressively made into a formula through its standardization and translation into a set of methodological packages. In its effort to define methodologies to implement and assess community participation, the WHO participated in the paradoxical tendency in community development to standardize participatory health planning. This tendency was paradoxical because it contradicted the commitment to move away from top-down, blue-print approaches to health that were at the basis of the creation of community participation (Morgan 1993, Gujit and Shah 1998). Through the production of research and methodologies, the WHO contributed to transforming community participation from a quintessentially contextual and site-specific—i.e. local—process rooted in the unique history of each place (Morgan 1993, 4), into a transferrable standard package. In this process, the local as community with its irreducible specificities became nothing but a slogan or a discursive element in international health jargon.

Once detached from its initial set of ideas and made into a standard package, community participation could easily be aligned with the new logics of austerity and neoliberalism prevalent in the 1980s and 1990s. Neoliberal rationality proposed community participation as a tool for tapping into local resources in times of austerity and making people productive actors in their own development. This transformation granted community participation enduring success during the structural adjustment policies of the 1980s and health sector reform in the 1990s.

The Local as Hub of Global Circulations

Moving beyond global health as a field to examine processes of health globalization reveals localization from a new angle. Health globalization and its arenas highlight the inextricable links existing between localization, circulation, and space. Whether located in the elusive global arena or in an easily identifiable local hospital, everything occupies space. This obvious point provides the backbone to understand processes of localization in health globalization. There must be a ground or tangible space on which localization takes place. Transnational, Asian medical knowledge transmission, and patients' international mobility help ground localization.

People, objects, ideas, policies and institutions circulate through vast and highly heterogeneous networks. They follow circuits, shift direction and change meaning, get connected and transformed. Claude Markovits and his colleagues put it boldly: "In circulating, things, men, and notions often transform themselves. Circulation is therefore a value-loaded term which implies an incremental aspect and not the simple reproduction across space and time of already formed structures and motions" (Markovits, Pouchepadass et al. 2003, 2-3). Even location itself, writes James Clifford (1997, 11), is "an itinerary rather than a bounded site—a series of encounters and translations." Being mobile and fluid, these people, things or institutions move from one place to the other, but they are always anchored in specific (but changing) grounded spaces, which play important roles in defining them. Objects, for example, are context specific, as studies in science and technology have taught us. The status of an Ayurvedic drug is modified when that drug leaves India and arrives in a country with a different legal environment; from being a medicine in India, the drug becomes a health supplement, a functional food, or a nutraceutical elsewhere. In this context, this shift in category (and meaning) is consubstantial with international circulation (Janes 2002, Pordié

2008, 2015). People also experience translocality and transformation when they go across international borders; these changes may bear on their subjectivity (Langford 2002) and on their biology and physiology, subject as they are to transport, jetlag, food intake, medicine, weather and pathogens. Travel and place help produce distinct corporality: "diverse kinds of travel produce diverse kinds of *re-localized* (i.e. traveling) bodies and biologies," write Elizabeth Roberts and Nancy Scheper-Hughes (Roberts and Scheper-Hughes 2011, 21).

While studying networks is central to understanding circulations in global health, examining place highlights the way these networks overlap and collide; thus, the two domains of enquiry should be practiced concomitantly. In order to grasp how a place is socially, culturally and materially produced, transformed and inhabited, we need to look at processes. Take the case of an Ayurvedic spa in southern India, belonging to a successful chain of about twenty high-class, standardized centers prominent in the wellness tourism industry, and spread across the country and abroad (Pordié 2011). These centers are part of a reputed Indian hotel brand and their clientele is mostly foreign. The average stay of the clients within the spa premises amounts to a couple of hours. However, these clients circulate in a global space that includes the spa as the nodal point of several networks, and as a hub for processes of health globalization. What actually brings stability to this hub are the Indians who staff it. Although some may come from states located hundreds of miles away to seize a job opportunity, once at work they become immobile, stabilizing agents. These agents (managers, therapists, cleaners, gardeners, accountants) form the backbone of the global space; they allow for its functioning and sustainability. In this case, the suggested unit of analysis is the spa itself, and everything that constitutes it—from the geographically immobile people, institutions, objects and technologies to the international patients and their means of mobility (such as cars, airplanes, and credit cards). While the dialectical interaction between national territory and global space must be acknowledged and closely examined

(Robinson 1998), the significance of the local in health globalization here is exemplary, as it is in general in the medical travel industry: it is a national construct with cross-border appeal and global aspirations.

To be effective and operational, a local hub in health globalization must be embedded in networks that extend beyond borders and must comprise circuits (which may involve new territorial arrangements) that converge within definite places, such as hospitals, clinics, health insurance offices, and international agencies. Such places are situated contexts, which house global activities. These locations and networks both result from and produce specific assemblages (Ong and Collier 2005), which crystallize in particular places and moments in time. This does not preclude the fact that these assemblages are fluid; they may change patterns and content, while at the same time being prone to a relatively time- and space-bound stability. This merging of places and networks, mobile and immobile agents, technologies and materials plays an instrumental role in the making of health globalization.

A network is qualified by both circulations and linkages, each of which present different problems. Circulations are plural in form; the nature of the circuits varies according to what or who circulates and where it goes to and comes from. Thus, Chinese drugs follow different circuits than influenza vaccines, pharmaceutical raw materials, Ayurvedic medical knowledge, or Filipino nurses. The same heterogeneity applies to linkages that may be of different intensities depending on whether or not people meet in person, discuss, have physical contacts, or communicate through the Internet. Of particular interest for us is that linkages and interactions happen and intensify in specific places that result from the crystallization invoked above, whether it is a hospital, a spa, a teaching center, a multilateral health institution, or specific places connected through cyberspace. These are hubs that allow health globalization to actually take *place*. They localize it.

Spaces in health globalization may take various shapes. In the case of distance

education in Ayurveda, linkages are exercised in cyberspace. Ayurvedic therapeutic knowledge is transmitted from India, through the internet, to international students located anywhere in the world. It is a form of transnationalism that can be described as "virtual migration" (Aneesh 2015), where all human actors are geographically immobile. None of them embody the transnational the way a migrant would, but all have the possibility of extending into other places and times through their virtual modes of communication. There is an "in-betweenness of social practices linking different local contexts, but not strictly reducible to any of them" (Boccagni 2012, 120). Here virtual contacts within a virtual space—which comprises concrete people and things, such as the teacher, his house, the students and their homes, computers, satellites, physical correspondence, etc.—take a tangible form in knowledge transmission, in the granting of certificates and ultimately, in newly acquired therapeutic practices. Once established and stabilized, a hub in health globalization is characterized by intensifying linkages that foster exchanges. In this case, these exchanges contribute to the production and transformation of therapeutic knowledge and practices; Ayurveda is adjusted and transformed *in order to* become global, for instance, by withdrawing sensory experiences and oral knowledge, two modalities absent from "cyber Ayurveda." These transformations involve creativity and imagination—a social practice characteristic of globalization (Appadurai 1996). However, imagination here is not only affected by the desires of those at great social, cultural and geographic distance, but also by linkages in the form of contacts, discussions, interactions and frictions between individuals on a planetary scale—be it through the internet, phone calls, therapeutic interventions, or teachings in a classroom. Medical culture is reorganized across space and time and contributes to the formation of new "translocal cultures" (Gupta and Ferguson 1992, Clifford 1997), albeit in very concrete places.

This is not to say that clinics, hospitals, classrooms and cyberspatial nodes remain

stable indefinitely. In fact, change happens all the time, as attempts are made to increase the level of linkages and interactions in a particular place, often with the aim of promoting commercial development. One evident situation is branding and marketing in the medical and wellness travel industry (Crooks, Turner et al. 2011, Pordié 2011). A variety of strategies have been deployed in most Asian countries, from drafting and implementing specific national policies to establishing international accreditations and certifications for health institutions. In general, medical institutions rely on a growing global awareness of the hospital brand and the reputation of the country—such as Singapore for Indonesian patients—or of the city—for example, hospitals in Bangalore, India, are trading on the city's reputation as "India's Silicon Valley," and thus a center for the knowledge-based service economy and scientific expertise. In other places, the context of medical and wellness tourism is significantly different. The Indian state of Kerala has a well-established tourism industry and is a major center for Ayurvedic tourism. This has allowed the Indian state to create the brand "Kerala Ayurveda" in an attempt to attract an increasing number of patients. Given the growing popularity of medical travel worldwide, the success of Ayurvedic tourism and the high volumes of tourists who were already coming to India, various cities and states, such as Kerala, have also sought to expand their "biomedical tourism" industry. This has led to collaboration between entrepreneurs and state governments in many places in India as efforts are made to re-brand the country as a global health care destination. Specialized travel agencies and guidebooks, as well as medical structures in the West and health insurance companies in Asia and abroad, work together to reinforce not only circulations, but also and most importantly linkages in global health networks.

Efforts directed at increasing linkages have entailed a profound reorganization and transformation of medical and wellness infrastructures everywhere. Corporate hospitals have opened specialist accommodation wings, providing rooms equipped with cable television,

telephones, sofas, fridges and air-conditioning and modifying the aesthetics and functionality of medical space (Evans, Crooks et al. 2009). Ideally, medical travel involves the rapid transfer of people from the airport to the hospital—which, interestingly, often shares some characteristics with the new design of airports, such as cleanliness, impersonality, and brisk temperatures—and the provision of foodstuffs from patients' countries or places of origin, in order to make them as comfortable as possible. Some of the key staff working in "medical tourist wards" have experience working overseas, are well versed in foreign languages, and consider themselves more aware of cultural considerations. The industry has realized that it needs to adapt and learn from patient responses to inter-cultural differences, and to use this knowledge to minimize cultural frictions in the future.

As far as biomedical travel is concerned, people are realizing that it is necessary to promote a generic, sanitized, pristine medical environment built on international standards and the qualifications, expertise, and international experience of doctors. Biomedical travel is therefore based on a principle of "cultural insulation." Health care professionals are trying to create a globalized, culturally neutral space that will be familiar to all, in order to develop a better fit between the visiting patients and the host hospital. Many medical care seekers do not feel comfortable travelling to another country for treatment, some have never traveled abroad before, and therefore minimizing cultural difference is extremely important to the success of medical travel ventures. Biomedical entrepreneurs are increasingly learning to de-couple the word "medical care" from "tourism," preferring to frame their clients as "international patients." These international patients may not be interested in the local culture or place, so providers seek to insulate them as much as possible from it, perhaps offering an optional, one-day trip to a famous and easily accessible temple or monument. Practitioners also appear to prefer to learn and work within the common globalized language and practice of biomedicine, where cultural differences are recognized and removed. Here, universality of

therapeutic practice is sought after to ease linkages and interactions.

While local culture is played down in biomedical hospitals, it is emphasized in other forms of therapies. Ayurveda or Thai massage, for example, are perceived to be based on tradition, heritage and nature, and the corresponding centers or clinics are more often than not located in pleasant, restorative, nurturing, tropical environments. Interior design, furniture, music and atmosphere are chosen in relation to healing and traditions, and form an integral part of the therapeutic service and experience. In these contexts, the visitor's ability to learn about the place and interact with the local culture is of significant importance. However, issues of translation are ever present in that the "cultural experience" and place are represented, adapted and translated to meet the needs, demands, and expectations of foreigners, including their cultural conceptions of the body, wellness, "traditional medicines," age, and gender.

In each of these configurations, circuits and circulations congregate at the networks' nodal points, where linkages deepen and interactions intensify. Hospitals, health centers, international organizations' offices or (virtual) classrooms are such sites of coalescence in global health. They incarnate a type of grounding in health globalization that forms one possible and specific way of localizing.

Conclusion

These diverse processes of making sense of something called "the local" within global health are central to the field's mode of understanding and acting in the world. Indeed, the cases presented here reveal a slow and iterative process of making global health scientific. They show the creation of commensurable and portable knowledge that can be deployed at population scale. We then demonstrated how that knowledge can also be created in the periphery, in new locals, by adhering to processes of commensurability and engaging circuits

of roving experts who would knit these circuits together and to the metropolis. Next, the chapter established how global ideas condense in particular places as projects, which are tested and, though lauded for their excellent fit with global priorities, are unable to show an effect in the local. We then toggled back in time to consider just one of those ideas, "community," to elucidate how the tenets or formulas required to make locals commensurable came to be. Finally, we considered those zones that, though harboring traces of global health's formulae, fail to engage in processes of localization and commensurability, and thus remain outside the scientized field.

Localization as process allows us to highlight how "the local" is simultaneously discursive, material, territorial, and experimental. It is both central and peripheral as a site of knowledge creation, and is a process that enables the creation of deterritorialized synthetic knowledge. By looking at these processes, we have made sense of the ways that global health employs methodologies that resemble science to establish the bounds of a field, as well as the rules of play.

We have shown how localization is a font of ideas and a foil of commensurability. It is both cause and effect of global health. By considering processes that make the local knowable, representable, and comparable— and thus no longer local—, we have looked from the anthropologists' privileged loci of knowledge. We have seen flashes of the global, but, more importantly, we have seen how dreams of commensurability grow and swallow up the processes that created them. Perhaps a disciplinary myopia encourages us to recuperate the local within global health, but this is also a project of situating the knowledge that global health aggregates in the name of accountability, evidence-based action, and global science. Whether localization is about community or genes or protocols or pills or commensurability, separating foreground and background and looking at processes of localization shows how global health's knowledge is made from experimentation, movements through space, and the

creation of replicable formulae. Its laboratory is simultaneously the world and the village, and people are both the test and the control.

Notes to chapter 1

[1] Interview with Anver Kuliev, 12/2018.
[2] Accounting for the high prevalence of hemoglobinopathies in the (sub)tropics, scientists argue that they emerged in areas where malaria was endemic, meaning that carrying a single copy of the mutated gene protects against malaria.
[3] Interview with Bernadette Modell, 11/2016.
[4] Interview with Bernadette Modell, 11/2016.
[5] A humoristic reference to the French company which bears this name and running holiday resorts in various countries.
[6] "From 1977, cases were sent to London and Athens, but also to Jerusalem" in order to get prenatal diagnosis (Angastiniotis and Hadjiminas 1981).
[7] "Factors limiting the effective delivery of fetal diagnosis for thalassaemia," by M. A. Angastiniotis, Archbishop Makarios Thalassaemia Centre, Nicosia, Cyprus. *WHO/SERONO Meeting on perspectives in Fetal Diagnosis of Hereditary Diseases*, Geneva, 2-4 May 1984. WHO archives, G3-181-129.
[8] Memorandum from Anver Kuliev (Hereditary Diseases Programme) to the Director of the Department of Noncommunicable Diseases, 13 March 1984. WHO archives, G3-181-129.
[9] Like Sardinia, also known as a successful example of thalassemia care and prevention.
[10] M. Angastiniotis, "Prevention of Thalassaemia in Cyprus" (report, est. 1983-84). WHO archives, G3-181-129.
[11] "Factors limiting the effective delivery of fetal diagnosis for thalassaemia," by M. A. Angastiniotis, Archbishop Makarios Thalassaemia Centre, Nicosia, Cyprus. *WHO/SERONO Meeting on perspectives in Fetal Diagnosis of Hereditary Diseases*, Geneva, 2-4 May 1984. WHO archives, G3-181-129.
[12] Interview with Bernadette Modell, 11/2016.
[13] Interview with Anver Kuliev, 12/2018.
[14] For instance, the blood bank was deemed "one of the best examples of community involvement in our health system" (Angastiniotis, Kyriakidou et al. 1986).
[15] Memorandum from Anver Kuliev (Hereditary Diseases Programme) to the Director of the Department of Noncommunicable Diseases, 13 March 1984. WHO archives, G3-181-129.
[16] "Community control of hereditary anaemias: Memorandum from a WHO meeting," *Bulletin of the World Health Organization*, Vol.61, n°1, 1983.
[17] Memorandum from Victor Bulyzhenkov to EMRO Regional Director, 2 April 1990, for the "Re-designation of the Archbishop Makarios Thalassaemia Centre, Nicosia, Cyprus, as a WHO collaborating Centre."
[18] Interview with Anver Kuliev, 12/2018.
[19] Styblo, K, and WHO Tuberculosis Programme. 1988. The national tuberculosis/leprosyprogramme in Tanzani a. TB Geneva: Styblo papers, Cermes3.
[20] Interview with F.S., 5/2018, Geneva, Switzerland.
[21] Interview with A. B., 8/2016, Mumbai, India.
[22] Interview with M.P., 8/2017, Mumbai, India
[23] https://www.globalgiving.org/pfil/10277/projdoc.pdf
[24] Interview LS, 1/2014, Patna, India
[25] For instance, in 1983 Aguadelo published a PAHO sponsored study in which he proposed a metrics that was supposed to measure community participation by assigning a score to "agents of community participation" (e.g. health promoters, health committees etc.) and "participatory activities" in a given community (Agudelo 1983).
[26] Interestingly enough, at the very same time that the WHO reiterated the "spirit" of community participation as proposed in Alma-Ata through the promotion of the concept of "community action in health" at the WHO/Canadian Department of Health and Welfare's conference that gave birth to the Ottawa Charter on health promotion in 1986. See International Conference on Health Promotion (1986: Ottawa, Canada) and World Health Organization. Division of Health Education and Health Promotion. (1995). Health promotion: Ottawa Charter = Promotion santé, Charte d' Ottawa. World Health Organization. https://apps.who.int/iris/handle/10665/59557. On the link between the PHC strategy and the Ottawa Charter see Cueto, Brown et al. (2019, 199).
[27] See in particular the background document for the technical discussions: World Health Assembly, 40. (1987). Economic support for national health for all strategies: background document. World Health Organization. https://apps.who.int/iris/handle/10665/164144. This technical discussion had be prepared with the support of the World Bank, which endorsed four policy measures: user charges in government health facilities, insurance of other

risks, use of nongovernmental resources and decentralization of government health services (J. Akin, N. Birdsal and A. R Measham to J. North, may 27 1987, "Back to office Report", World Bank Archives, 30158262). Community funding seems to have been a WHO idea.

[28] For instance, as Chorev contends, at the end of the 1990s, the WHO objected to "users' fees," which were endorsed by the World Bank using the same economic reasoning that was prevalent at the time (Chorev 2012, 172-174).